
Enduring Individual Differences and Rational Choice Theories of Crime

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In explaining crime, some criminological theories emphasize time-stable individual differences in propensity to offend while others emphasize more proximate and situational factors. Using scenario data from a sample of college undergraduates we have found evidence to support both positions. A measure of criminal propensity (poor self-control) was found to be significantly related to self-reported decisions to commit three offenses (drunk driving, theft, and sexual assault). Even after considering differences in self-control, there was evidence to suggest that the attractiveness of the crime target, the ease of committing the crime with minimum risk, and perceptions of the costs and benefits of committing the crime were all significantly related to offending decisions. Our results suggest that theories of criminal offending should include notions pertaining to persistent individual differences in criminal propensity and choice-relevant variables.

Criminological theory has developed along two separate and distinct tracks. Theorists along one track have argued that time-stable individual differences distinguish offenders from nonoffenders. Such criminological theories have attributed crime to enduring individual characteristics like “willful antisocial proclivities” (Goring 1913:370), feeblemindedness (Goddard 1911), emotional instability (Abrahamsen 1960), physical and mental deficiency (Hooton 1939), and antisocial personality (Gough 1968). In one form or another such theories constitute “types of person” theories. While differing somewhat in their exact nomenclature, the theories share the common theme of explaining the distribution of criminal offending with reference to stable individual differences in something like “criminal disposition” or “criminal propensity.”

The second track of criminological theory rejects the assumption that offenders dramatically differ from nonoffenders in terms of some time-stable personal characteristic. Instead, these theories attribute crime to circumstances and situations

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in the social setting that are external and proximate to the offender. The early classical school of criminology, for example, attributed crime to the nexus of costs and benefits of offending. Economic theories of crime (Becker 1967) have elaborated this line of argument, and early social control/social learning theories brought nonlegal costs and benefits explicitly into considerations of the causes of crime (Toby 1957; Briar & Piliavin 1965; Reckless 1967; Hirschi 1969; Akers 1973).

On the surface, recent developments in criminological theory appear to sustain this trend of two separate theoretical tracks. The work of routine activities and lifestyle theorists such as Hindelang (Hindelang et al. 1978), Cohen & Felson (Cohen & Felson 1979; Cohen et al. 1980, 1981; Cohen & Land 1987; Maxfield 1987) and of rational choice theorists (Piliavin et al. 1986; Cornish & Clarke 1986; Clarke & Cornish 1985) focus on the role of situational factors and the perceived costs and benefits of crime as determinants of target selection and more broadly of the decision whether to offend. In contrast, work by Wilson and Herrnstein (1985) and Gottfredson and Hirschi (1991) continues the tradition of attributing persistent criminal offending to enduring differences in criminal propensity among persons; their work, however, radically departs from early "type of person" theories. While underappreciated, both sets of authors also incorporate key assumptions of rational choice theories.

We report here on an empirical study that combines considerations of stable criminal propensity with concepts that are central to utilitarian and social control theories of crime—the perceived costs and benefits of crime and the objective characteristics of an offending opportunity. We find substantial evidence that "lack of self-control," the central construct of the Gottfredson-Hirschi theory and implicitly of the Wilson-Herrnstein theory has a positive and highly significant association with intentions to commit several different types of crime. We also find that the perceived benefits and costs of crime have a comparably large impact on intentions. The latter finding supports the arguments of Sampson and Laub (1990, 1992, 1993) that the strength of social bonds materially influences propensity to engage in crime independent of enduring individual differences associated with life course antisocial behavior.

Contemporary Theories of Offending as a Reflection of Individual Differences and Rational Choice

Rational Choice Theories

At least two recent theoretical developments in criminology, routine activity/life style, and rational choice theories ignore or attach relatively little importance to notions of endur-

ing individual differences in criminal propensity.¹ Routine activities/lifestyle theories (Hindelang et al. 1978; Cohen & Felson 1979; Cohen et al. 1980, 1981; Cohen & Land 1987; Maxfield 1987) are not theories of offending per se; rather they are theories of victimization risk. Notwithstanding, they have obvious implications for theories of offending (Hough 1987; Riley 1987; Tuck & Riley 1986). These theories, which presume a supply of motivated offenders, examine the effect of situational obstacles and attractions on their target selection. As such, routine activity/lifestyle theories focus on situational characteristics that vary across offense opportunities not offenders.²

The rational choice perspective shares the routine activity/lifestyle theory focus on situational inducements and impediments to offending but also places at least as much emphasis on would-be offenders' subjective estimates of expected rewards and costs (Cornish & Clarke 1986, 1987). From the rational choice perspective, costs and benefits of crime are not enduring characteristics of persons but vary from one potential crime situation to another, and comprise what Cornish and Clarke (1987:935) describe as the "choice-structuring properties" of offenses.

In sum, what is common to both the routine activities and rational choice theories is an inattention, in both the theoretical and empirical literature, to the possibility that persons may differ with respect to their initial propensity to offend. Theoretical writings provide virtually no discussion of time-stable individual variation in the motivation to offend, and empirical models fail to incorporate criminal propensity as one of their exogenous variables.³

Theories of Enduring Individual Differences

Early in their influential text, Wilson and Herrnstein (1985:25) make clear that the central theme of their theory of crime and human nature is enduring individual differences in

¹ Considerations of expected utility and rational choice have a long tradition in deterrence theory (see the articles in Cornish & Clarke 1986; Piliavin et al. 1986; Paternoster 1989; Grasmick & Bursik 1990). When referring to rational choice theory, then, we mean rational choice/deterrence theory.

² Another situational factor that affects criminal offending is the exposure of the crime target. Felson & Cohen 1981 define exposure as the accessibility or availability of potential victims to potential offenders. In our hypothetical scenarios, described below, the crime target and offender are brought together, making exposure nonproblematic. For this reason, we focus on what Cohen and Felson refer to as target attractiveness and guardianship.

³ In fairness to routine activities/lifestyle theorists, the issue of enduring differences among would-be offenders is of only tangential relevance to the objective of their theories—explaining victimization. Our point, however, is that if such theories are recast as theories of target selection, the issue of enduring individual differences in criminal propensity is no longer tangential.

criminal propensity: “one can supply an explanation of criminality—and more important, of law abidingness—that begins with the individual *in, or even before, infancy*” (emphasis added). Quoting approvingly an earlier article by Gottfredson and Hirschi, Wilson and Herrnstein (p. 23) define criminality as reflecting “stable differences across individuals in the propensity to commit criminal (or equivalent) acts.”

At the core of Wilson and Herrnstein’s conception of criminal propensity is the idea that offenders possess certain enduring personality traits that include defiance, hostility, a weak conscience, and, in particular, an inability to plan for the future or defer gratification (impulsiveness). Wilson and Herrnstein further hypothesize that these characteristics, together with other equally stable individual characteristics such as low intelligence, incline persons to commit not only criminal offenses but a wide variety of legal but reckless behaviors—promiscuous sexual behavior, abuse of alcohol, job instability, and so on.

In *A General Theory of Crime* (1990), Gottfredson and Hirschi adopt a very comparable theory of individual differences in criminal propensity. The central theoretical concept in the Gottfredson-Hirschi scheme is self-control, the elements of which include (pp. 89–90) an inability to defer gratification, self-centeredness, a preference for risk taking, and little interest in long-term planning. Like Wilson and Herrnstein, Gottfredson and Hirschi argue that persons who lack self-control are likely to engage in both crime and legal but imprudent behaviors. Also, like Wilson and Herrnstein, Gottfredson and Hirschi are explicit in their belief that self-control is a time-stable personal attribute established early in life.

In summary, the recent work of both Wilson and Herrnstein and Gottfredson and Hirschi continues the track of criminological theory that emphasizes the influential role of time-stable individual differences in shaping population variation in offending through the life course. But neither of these two theories argues that persons who, in the parlance of Gottfredson and Hirschi, lack self-control are wholly unresponsive to incentives or devoid of a capacity to reason. Quite to the contrary; both theories treat individuals as rational decisionmakers who respond to perceived incentives. The Wilson-Herrnstein theory takes as given the central tenet of reinforcement theory—the influential role of rewards and penalties in shaping behavior. The Gottfredson-Hirschi theory adopts the key premise of routine activity theory—crime is the product of a motivated offender encountering an attractive opportunity. Gottfredson and Hirschi provide a theory of the “motivated” offender. Thus, neither theory argues that individuals who lack self-control are unresponsive to incentives or respond to different incentives than do individuals with greater levels of self-control.

The Role of Incentives

We raise the issue of rational choice in the Wilson-Herrnstein and Gottfredson-Hirschi theories because if incentives of the immediate situation are choice relevant, why are not other variables in the rational choice framework such as risk of damaged social bonds? Neither set of authors directly addresses this question, but their theories suggest at least two explanations of the limited impact of social bonds.

One is advanced by Hirschi (1986) in an article that anticipates some key aspects of the Gottfredson-Hirschi theory. He argues that individuals who commit crimes attend principally to the incentives of the moment and greatly discount uncertain and delayed consequences. Among these consequences are the threat of formal and informal forms of social censure. The threat of damaged social bonds is an ineffective deterrent not because social consequences are irrelevant *per se* but because offenders are so present oriented that the social censure that may ensue from crime receives little weight in their decision calculus.

For several reasons this present orientation argument is not persuasive. Both the Wilson-Herrnstein and Gottfredson-Hirschi theories share the premise that differences between persons who do and do not commit crimes are ones of degree, not kind. All individuals to some degree discount future consequences; individuals who engage in crime are just (on average) especially present oriented. They are not, however, incapable of foresight. If potential offenders (individuals with low self-control) are responsive to situational incentives affecting apprehension risk, it logically follows that they should to some degree be responsive to formal or informal forms of social control.

Now it may be the case that the *average* offender is so oriented to the present that as a practical matter future consequences have only a *de minimus* impact on their decision calculus. Even if this were the case, it does not follow that the *marginal* offender is completely indifferent to future consequences. The marginal offender is one who is on the boundary or margins of offending, neither strongly committed to crime nor unwaveringly conformist. In fact, the logic of the Gottfredson-Hirschi and Wilson-Herrnstein theories implies that the marginal offender will be more responsive to future consequences.

Both the Gottfredson-Hirschi and Wilson-Herrnstein theories posit a population distribution of self-control or its equivalent, with those persons most lacking in self-control being most crime prone. Thus, the average offender will be more lacking in self-control (and more present oriented) than the

marginal offender. Further, because the distribution of offending in the population is highly skewed, the distribution of self-control must itself be comparably skewed. The skewed distribution of self-control implies that differences between the marginal offender and average offender may be especially large. Stated differently, concluding from the behavior of the average offender that future consequences have no material impact on the decision to offend suffers from the same flaw as concluding from the testimony of the average prisoner that the threat of prison is not a deterrent.

A second and more substantial argument is that the strength of social bonds are themselves determined by self-control and have no *independent* influence on offending behavior. Weak social bonds are thus not a cause of crime but just another manifestation of low self-control. Both Gottfredson and Hirschi and Wilson and Herrnstein argue that the time-stable attributes that give rise to a greater propensity to commit crimes are also manifested in an inability to establish enduring relationships and hold steady employment.

Space does not permit a lengthy response to this fundamental challenge, but we attempt a brief exposition of our argument. In an ongoing stream of research, Sampson and Laub (1990, 1992, 1993) have attempted to reconcile three empirical regularities: (1) individuals who do not display troublesome behaviors (e.g., fighting, defiance, impulsivity) as children rarely become chronic offenders as adults, (2) virtually all chronic offenders displayed troublesome behaviors as children, but (3) most individuals who were troublesome children do not become chronic offenders. Thus, most children who display temperaments and behaviors that are the hallmarks of individuals who become chronic offenders as adults do not themselves pursue careers of crime; something deflected their trajectory from chronic antisocial behavior.

Sampson and Laub argue that this something is strong social bonds. They do not argue that enduring individual differences in predisposition to commit crime have no impact on the development of social bonds, but they do argue that such individual differences are not the sole or necessarily even the most important determinant of individual differences in the strength of the social bond.

In a nutshell, our argument is twofold. First, we see no fundamental incompatibility between the theories of Wilson and Herrnstein and Gottfredson and Hirschi that emphasize enduring individual differences and the rational choice, routine activities, and social control perspectives. Our argument is an extension of Hirschi's (1986) own position on the compatibility of social control, routine activities, and rational choice theories. Second, we share the view of Sampson and Laub that factors

emphasized in rational choice and social control theories are not necessarily of secondary importance compared to enduring individual differences in explaining criminal behavior.

In the analysis that follows, we provide an empirical test of a model that includes considerations of persistent individual differences in criminal offending, the situational elements of target vulnerability and attractiveness, and external and internal social control variables.

Methods

The Scenario Method

Data were assembled using a survey that presents respondents with a scenario describing in detail the conditions under which a crime is committed. Selected scenario conditions (described below) were experimentally varied across persons. Respondents were asked to estimate the probability that they would commit the act specified in the scenario, the chance that their commission of the offense would result in arrest and in exposure without arrest, and questions designed to measure their perceptions of the costs and benefits of committing the offense described in the scenario.⁴ The survey also included a battery of questions to measure the extent of respondents' self-control.

The scenario method differs from conventional data collection approaches in perceptual deterrence research in only one important respect. Instead of using self-reports of one's own criminal involvement or alternatively self-reports of future criminal intentions as the response variable, the scenario method uses offending scenarios to elicit the response variable.

The principal weakness of this approach is that an expressed intention to offend is not synonymous with actual performance. Fishbein and Ajzen (1975:368–81), however, argue that under appropriate conditions, "there should be a high relation between a person's intention to perform a particular behavior and his actual performance of that behavior." They specify those conditions as (1) the degree to which the intention to behave is measured with the same specificity as the behavior that is being predicted, (2) the stability of the expressed

⁴ The strategy of using respondents' self-reported intention to offend, as opposed to self-reports of actual behavior, has been used successfully in much recent deterrence research (Grasmick et al. 1984; Tittle 1980; Murray & Erickson 1987; Klepper & Nagin, 1989a, 1989b; Bachman et al. 1992). Of these cited studies, however, only Klepper and Nagin and Bachman et al. use the scenario method as described below.

The use of behavioral intentions also has a rich and productive history in psychology (see Fishbein & Ajzen 1975). For example, elicitation of projected behavior has been extensively used by scholars of decisionmaking under uncertainty (Kahneman et al. 1982; Nisbett & Ross 1980).

intention, and (3) the degree to which the individual is able to willfully carry out the intention.

With these three criteria in mind we have attempted to construct the scenarios to maximize the correspondence between intention and actual behavior. Intentions to offend are measured under very specific conditions. Given the specificity of the scenarios and the fact that they involve situations that are not foreign to our respondents, there is no compelling reason to suspect instability in the expressed intentions. Finally, the behaviors in question are under the general volitional control of the respondents, and we measure the important impediments to behavior (e.g., moral inhibitions, social attachments, perceived opportunity).

Notwithstanding our efforts to maximize the link between intention and actual behavior, we acknowledge that this link is still problematic. In our judgment, however, certain advantages of the scenario method outweigh this weakness. These strengths stem from the specificity of the scenarios. First, it allows us to examine the effect of situational factors on intentions to offend and on perceptions of risks and rewards. Second, absent specificity about circumstances, respondents must necessarily impute their own. Imputed circumstances will undoubtedly vary across respondents and affect their responses to many variables of interest such as estimates of the risk of arrest and the social consequences of arrest. Third, for some offenses such as sexual assault, perceptions of what constitutes a breach of the legal prohibition will vary, perhaps considerably, across people. If differences in definition vary systematically with variables of interest (e.g., consequences of arrest or exposure), analyses relating self-reported offending to such variables may seriously misrepresent the relationship of the variables to actual behavior. Fourth, in both cross-sectional and panel studies using self-reports, questionable assumptions must be made about the appropriate lag interval between exogenous and endogenous (criminal offending) variables (Klepper & Nagin 1989a, 1989b; Grasmick & Bursik 1990). With scenario data, however, we are able to estimate what Grasmick and Bursik refer to as an “instantaneous” relationship between independent variables and self-reported intentions to offend.

The scenario methodology is a hybrid. It combines the use of hypothetical scenarios that provide respondents with a specific and detailed offense situation with traditional survey questions. We believe this hybrid approach is superior to past data collection methods used in perceptual deterrence research. The scenarios allow us to provide a specific situation to serve as a reference point for our inquiry into the perceived costs and benefits of the criminal behavior. Unlike traditional vignette research in this area (Rossi & Anderson 1981), we do not specify

beforehand the values of the risks and rewards but instead specify the circumstances of the offense and ask respondents to estimate their own values.

Sample

Respondents were undergraduates at the University of Maryland enrolled in several large introductory criminology and criminal justice courses. A total of 399 males and 300 females completed the questionnaire. Participation was voluntary but nobody refused to complete the survey.⁵

There has been a good deal of criticism of the use of convenience student samples in deterrence research (Jensen et al. 1978; Williams & Hawkins 1986). One of the major objections raised about such samples concerns their representativeness. While we acknowledge some element of truth to these criticisms, there are two reasons why we believe they pose less compelling arguments for the purposes of this study.

First, it should be understood that a sample of respondents from a large public university is likely to contain a moderate number of offenders, particularly for the kinds of offenses whose intentions to commit we are gauging (theft, drinking and driving, sexual assault). For example, from December 1991 to November 1992 the University of Maryland Police Department received 1,252 reports of theft. A spokesperson for the campus police relayed that the “overwhelming” proportion of these offenses involved student offenders. Although the number of thefts is small relative to the size of the university, this is the number of *reported* thefts. Alcohol use and drunk driving is undoubtedly even more pervasive. While campus police made only 19 arrests for drunk driving during the 1991–92 period, this official statistic vastly underestimates the prevalence of student drinking and driving. A survey of 1,287 University of Maryland students conducted in 1991 (Kuhn 1992) revealed

⁵ The respondents ranged in age from 17 to 32 with the mean and median age being about 20. About equal proportions of respondents were in their freshman, sophomore, junior, and senior years.

It might be argued that there may be some bias in our selection of introductory criminology courses since criminology students may respond to crime scenarios differently, and they may have some knowledge of deterrence from their course work. There are a number of reasons allaying our own concerns about this. First, according to the instructors' registration roles, fewer than 50% of the students enrolled in these classes were criminology majors. These criminology courses meet general university requirements for a social science course. As a result, about half of our respondents came from majors throughout the university (engineering, business, humanities, mathematics). Second, these were introductory courses with no prerequisite but were prerequisites for other, advanced criminology courses. It is quite unlikely, therefore, that any student had previously taken a criminology course before. Third, questionnaires were administered during the first week of classes before any lectures. There was no opportunity, therefore, for students to learn about deterrence or the criminal justice system. Fourth, class standing was unrelated to any of the outcome variables.

that almost one-half were regular users of alcohol and 45% of these reported drinking four or more drinks at a time. Of the drinking students, almost one-half reported vomiting, 30% reported experiencing memory loss, and over half reported driving within an hour after consuming their last drink.⁶ Although the number of complaints to the police for sexual assault was low (fewer than 10 in a year), all campus officials indicated that this number grossly underestimates the number of actual sexual assaults occurring on campus. One rape counselor affiliated with the university but not the police reported to one of the authors that she had counseled about 20 victims of sexual assault in the past semester alone.⁷ This is consistent with survey research in this area. Kanin and Parcell (1977) reported that nearly one-half of university women were victims of some form of unwanted sexual contact. In a recent survey involving 32 colleges and universities, Koss and her colleagues found that about one-third of university women were the victims of sexual aggression and this victimization most often came at the hands of a fellow student (Koss 1983; Koss & Oros 1982; Koss et al. 1987; see also Bourque 1989; Sanday 1990; Ward et al. 1991; Warshaw & Koss 1988). Collectively, this information leads to the conclusion that college students are frequent offenders in situations involving theft, drunk driving, and sexual assault.

Second, the kinds of research questions we are interested in ideally call for samples with a large proportion of marginal offenders. These marginal offenders are not persons whose self-control is so low that they would be unaffected by the delayed consequences of crime. For these more marginal offenders the commission of an offense is a matter of calculation and deliberation in which delayed consequences are of greater importance. Crime is neither precluded by strong compunctions nor is it compelled by strong motivation. This reason too makes a college sample particularly attractive.

Scenario Design

Respondents were presented with three scenarios, each involving a different offense: drunk driving, larceny, and sexual assault (males only). All were framed in settings familiar to our college student respondents.

⁶ Further, a Bureau of Justice Statistics Report (Cohen 1992) reveals that the rate of arrest for driving while under the influence (DUI) is highest for those between the ages of 21 and 24. Those in the 18–20 age range had the second highest arrest rate for DUI. The college years (18–24), then, are a prime time for driving while drunk.

⁷ The survey of Maryland students revealed that in a 12-month period nearly 10% of the sample reported being taken advantage of sexually while they had been drinking and an additional 10% reported that they had taken sexual advantage of another while drinking.

The following is an example scenario for the offense of drinking and driving:

It's about two o'clock in the morning and George has spent most of Thursday night drinking with his friends at the "Vous" [a popular campus drinking spot]. He decides to leave the Vous and go home to his off-campus apartment which is about 10 miles away. George has had a great deal to drink. He feels drunk and wonders if he may be over the legal limit and that perhaps he should not drive himself home. To get home he knows that he must drive down Route 1 [a busy artery]. He also knows that his roommate is home and would be able to take him back to pick up his car the next day. He remembers hearing about a state police crackdown on drunk driving. George decides to drive himself home.

Comparable scenarios were created for theft and sexual assault. An example of each is provided in Appendix A. For female students scenario characters were women; otherwise the scenarios were identical across genders.

The scenarios were extensively pretested and reworked to insure their credibility with apparently good success. Across scenario types, from 95% to 99% of respondents reported that the vignette was "believable and realistic."

Measurement of Variables

Separate models were estimated for each scenario crime type. The dependent variable is the respondent's estimate of the probability they would do what the scenario character did. Responses were measured on a scale from 0 (no chance at all) to 10 (100% chance).

We next describe the independent variables included in the model:

Lack of Self-Control

Wilson and Herrnstein and Gottfredson and Hirschi are in general agreement on the distinguishing characteristics of chronic offenders. To be sure, they pointedly disagree on the cause of relevant individual differences, but this fundamental disagreement is not relevant for our purposes.⁸ We thus use the label "lack of self-control" to reference the common cluster of personal characteristics that both sets of authors agree predispose individuals to crime.

In their discussion of the concept, Gottfredson and Hirschi (1990:89–90) provide a generally detailed description of the elements of self-control. Persons low in self-control have a

⁸ Gottfredson and Hirschi argue that relevant individual differences are principally the result of early child-rearing practice, whereas Wilson and Herrnstein argue that the differences have a substantial constitutional, possibly genetic, basis.

“concrete ‘here and now’ orientation” (impulsiveness), “lack diligence, tenacity, or persistence in a course of action” (desire for simple tasks), are “adventuresome, active, and physical” (preference for both risk and physical activity), are “indifferent, or insensitive to the suffering and needs of others” (self-centered), and “tend to have minimal tolerance for frustration and little ability to respond to conflict through verbal rather than physical means” (quick temper).

Our measure of self-control comes from a 24-item instrument devised by Grasmick et al. (1993). This instrument is intended to measure the six elements of self-control discussed above; impulsiveness, desire for simple tasks, risk preference, preference for physical activity, self-centeredness, and temper. A composite measure of self-control was created by summing the responses across the 24 items (see Appendix B). High scores on the scale are indicative of low self-control.

Although the instrument measures six different elements or dimensions of self-control, the construct was intended to be unidimensional. In their original paper, Grasmick et al. conducted a series of factor analyses to examine its measurement properties and concluded that the 24 items do reasonably conform to a unidimensional scale. Factor analyses of our own data virtually duplicate Grasmick et al.’s results.⁹

Criminal Opportunity and Situational Factors

Routine activities and rational choice theory both suggest that persons are more likely to offend when the intended target is more accessible, vulnerable, and attractive. To examine the impact of objective features of the crime opportunity on intentions, scenario conditions were randomly varied across respondents.¹⁰

⁹ A principal-components factor analysis extracted 6 factors from the 24 items, corresponding to the 6 dimensions. The first factor extracted, however, had an eigenvalue of 4.97 and explained 21% of the variance among the items. The eigenvalues of the other 5 factors were much smaller (2.49 for the second factor, 1.21 for the sixth), as was the amount of variance explained by each (10% for the second, 5% for the sixth). Following the Scree Test (Nunnally 1967), the greatest break between consecutive eigenvalues was between the first and second factor extracted, suggesting the appropriateness of a one-factor model. The factor loadings from this analysis were very comparable to those reported by Grasmick et al. (1993), as was the scale’s reliability (Cronbach’s $\alpha = .83$).

We acknowledge that some might view the results of the factor analysis as suggesting that the self-control scale is multidimensional. Our purpose here, however, is not to untie the different dimensions of self-control, so the issue of the uni- or multidimensionality of self-control is not central to our work. We do believe, however, that we have found plausible evidence for the unidimensionality of the 24 items, and have, therefore, constructed a composite scale. Additional research on the psychometric properties of this scale and the utility of other self-control scales is needed.

¹⁰ In deciding which conditions to manipulate, we were influenced by focus group sessions conducted at the University of Maryland. Undergraduate students from upper-level criminology and criminal justice courses were solicited to take part in these groups. Students were provided with a pretest version of each of the three scenarios

For example, in the drinking and driving scenario, four specific conditions were manipulated: (1) the distance traveled between the bar and George's home (ten miles or one mile), (2) the type of road George had to travel to get home (heavily traveled and patrolled Route 1 or back roads), (3) the inconvenience to George of returning to retrieve his car at the bar the next day (George's roommate was home and could take him or he had to catch a bus or walk), and (4) the vigilance of law enforcement (there was reduced surveillance because of state police budget cutbacks or a state police "crackdown" on drinking and driving).¹¹ Both routine activities and rational choice theory predict that these conditions would affect intentions either directly (e.g., convenience) or indirectly via risk perceptions (e.g., law enforcement vigilance). Table 1 reports the manipulated conditions for each of the three scenarios.

Perceived Utility—Costs and Benefits

Rational choice theorists have argued that the decision to commit an offense is negatively related to the perceived costs of crime and positively related to the perceived rewards of crime. We measured both dimensions of subjective utility in this research.

Our index of the perceived costs is constructed to capture theoretical arguments advanced by Williams and Hawkins (1986). Based on an appeal to ideas central to social control theory, they argue that such costs are triggered by others "discovering" the deviant behavior. Such discovery can result from arrest but can also occur even if the individual is not arrested. The offender may be exposed without arrest if the victim reports it to others but not to the police or if the offense is observed by others but not reported to the police. Respondents were thus asked to estimate the chances of arrest (p_a : discovery by arrest) and the chances of exposure without arrest (p_e : discovery by exposure).

To measure perceptions of the consequences of discovery by arrest and by exposure through informal social networks, respondents were asked to estimate the conditional probability that discovery by each of these two mechanisms would result in dismissal from the university ($p_{d/a}$, $p_{d/e}$), lost respect of close friends ($p_{fr/a}$, $p_{fr/e}$), lost respect of family ($p_{fa/a}$, $p_{fa/e}$), and diminished job prospects ($p_{j/a}$, $p_{j/e}$). Each of these conditional probabilities measures the risk conditional on discovery of

and were asked to talk about how realistic each was, and what factors would influence their decision to commit the offense. The results from these focus group discussions led us to select the particular situational elements contained in the scenarios and also influenced the design of the base scenario.

¹¹ The reduced surveillance condition was not contrived; due to state budget problems, such cutbacks were in fact occurring at the time the survey was administered.

Table 1. Manipulated Scenario Conditions*Theft*

1. How busy the room is:
 - A. Lots of people are up and about
 - B. Things are pretty quiet
2. Attractiveness of the victim:
 - A. Bill does not recognize who is showering
 - B. Rod is showering, Bill does not know him well
 - C. Rod is showering, Bill thinks Rod is obnoxious
3. Amount of money stolen:
 - A. \$20
 - B. \$60

Drinking and driving

1. Distance to travel home:
 - A. 10 miles
 - B. 1 mile
2. Route traveled home:
 - A. Down Route 1
 - B. Mostly back roads
3. How to get the car the next day:
 - A. Roommate is home and would take him
 - B. Would have to take a bus or walk
4. State police activity:
 - A. State police crackdown
 - B. Cutbacks in state police patrols

Sexual assault

1. Prior relationship:
 - A. Met for the first time
 - B. Had been dating for several months
2. Drinking:
 - A. Neither is drunk
 - B. Both are quite drunk
3. Who the woman lives with:
 - A. With roommates
 - B. Lives alone
4. Kissing and fondling:
 - A. She tells him to stop immediately
 - B. She allows it for several minutes

either damaged attachments (i.e., relationships with significant others) or commitments (i.e., occupational prospects). As such, they measure risks of various types of informal sanctions. To measure perceived risk of formal sanctions, respondents were also asked to estimate the risk of jail ($p_{ja/a}$) and of losing their driver's license ($p_{l/a}$),¹² each contingent upon arrest.

Measures of the risk of the specified sanctions were created by multiplying each of these conditional probabilities by the

¹² This measure was only included in the drinking and driving analysis.

risk of the appropriate conditioning discovery event, arrest or exposure without arrest, and then additively combining them. For example, the perceived certainty of family disapproval was calculated by $p_{fa/e} p_e + p_{fa/a} p_a$. The first and second terms in this sum measure the risk of parental disapproval resulting, respectively, from exposure without arrest and from arrest; their sum measures the *ex ante* risk of parental disapproval if the offense is committed.

Even highly certain sanctions cannot be expected to affect decisions to offend unless they are also perceived to entail some cost (Andenaes 1974; Bailey & Lott 1975; Grasmick & Bryjak 1980; Grasmick & Bursik 1990). Thus, we asked respondents to estimate the perceived severity of each sanction. Using a measure much like one Grasmick and colleagues employed in their research, we asked each person to estimate "how much of a problem" each sanction would pose for them. Response options ranged on an 11-point continuum from "no problem at all" (coded 0) to "a very big problem" (coded 10). To create a sanction measure that reflected both the risk and cost of perceived punishment, we multiplied each certainty measure by its corresponding severity component.

In this research we are less interested in disentangling the independent effects of these different types of punishment than we are in considering the more general role of sanction threats themselves.¹³ For this reason, a composite measure *total sanctions* was created by summing responses across each of the individual sanction threat items.¹⁴

In addition to the fear of externally imposed sanctions, tests of the rational choice perspective have recently included considerations of internally imposed punishments (Williams & Hawkins 1986; Grasmick & Bursik 1990; Grasmick et al. 1993). Grasmick and Bursik (1990) argue that persons who have internalized a moral prohibition against a particular deviant act contemplate the possibility and cost of guilt or shame for doing that act. These feelings of guilt—the "pangs of conscience" (Braithwaite 1989:74)—are experienced as "painful emotions" (Scheff 1988:396) and constitute another cost of crime.¹⁵

¹³ Also, the large (positive) correlations across the specific types of sanctions generally makes it impossible to disentangle their independent effects.

¹⁴ The index of total sanctions (TS) was created by the following composite index:

$$TS = P_e [(P_{d/e}) (S_d) + (P_{fr/e}) (S_{fr}) + (P_{fa/e}) (S_{fa}) + (P_{j/e}) (S_j)] \\ + P_a [(P_{d/a}) (S_d) + (P_{fr/a}) (S_{fr}) + (P_{fa/a}) (S_{fa}) + (P_{j/a}) (S_j)] \\ + (P_{1/a}) (S_1) + (P_{ja/a}) (S_a),$$

where S_j is the perceived severity of sanction j and all other variables are as previously defined. The license revocation component was only included for drunk driving.

¹⁵ Our definition of shame as a self-imposed punishment is comparable to Braithwaite's notion of conscience. Braithwaite's concept of shame or shaming consists of social expressions of disapproval and censure and is a component of our TS measure.

For these reasons, we included a measure of *shame* in the model that is constructed along the lines suggested by Grasmick and Bursik (1990). They argue that shame is a binary event; one either experiences it or not. Respondents were thus asked whether they would feel guilt or shame if they were discovered (either by arrest or exposure without arrest) committing the offense described in the scenario (yes/no). While the event of shame is assumed to be binary, the quantity or painfulness of the “pang” might very well vary across persons. To capture the intensity of guilt, respondents were asked to estimate how much of a problem guilt/shame would be for them if they were to commit the act in question. The shame index was constructed by multiplying the binary indicators of shame with the intensity of shame.

With a few exceptions (Carroll 1978; Tittle 1980; Scott & Grasmick 1981; Piliavin et al. 1986; Klepper & Nagin 1989a, 1989b), empirical tests of rational choice hypotheses have examined the cost but not the benefit dimension of offending. Available research generally finds that the perceived benefits of criminal offending are important considerations in would-be offenders’ scheme of calculation and perhaps more important than the estimated costs (Carroll 1978; Piliavin et al. 1986). Any utility-based model of criminal offending that only includes the costs dimension is, thus, incompletely specified. A measure of the *perceived pleasure* of each scenario behavior was obtained by asking respondents to report “how much fun or a kick” it would be if they were to commit the offense under the scenario conditions. Response options varied on an 11-point continuum from 0 (“no fun or kick at all”) to 10 (“a great deal of fun or kick”).

In addition to the exogenous variables discussed above, two other variables were included in the model specification, *gender*¹⁶ and *prior offending*¹⁷ (number of times in the past year they had driven a car while drunk, stolen or shoplifted something, and used violence against another person for, respectively, the drunk driving, theft, and sexual assault model specifications).

¹⁶ Since the sexual assault analysis involved only males, gender was excluded from this model. In the other models, gender is coded 0 for females and 1 for males.

¹⁷ Stability in criminal offending over time may be due to persistent individual differences in some personality trait, such as self-control, or to some stable characteristic of a person’s social environment, such as social class or neighborhood levels of crime. Our measure of self-control is designed to capture only the first of these reasons for persistent involvement in crime. Prior behavior is included to capture the influence of other sources of stable criminality. Nonetheless, prior offending may be viewed as still another indicator of lack of self-control. We note, however, that the results reported below are unaffected by the inclusion of prior offending in the specification. Thus, for the purposes of this study its interpretation is moot.

Analysis

The modal response category of the dependent variable was zero; 63% of the respondents reported that there was “no chance” that they would commit the specified theft, 33% reported “no chance” of drinking and driving under the scenario conditions, and 85% reported no chance of committing the specified sexual assault. Because the outcome variables are heavily censored at zero, the models were estimated using tobit regression. The results are reported in Table 2.

Consider first the coefficient estimates for self-control. In accord with the Gottfredson-Hirschi and Wilson-Herrnstein theories, for all three crime types lack of self-control has a direct, positive, and highly significant association with intentions to offend. Persons low in self-control are more likely to report that they would commit each offense (theft, drinking and driving, sexual assault) than those with greater self-control. This is true when other factors of the crime situation and the perceived costs and benefits are controlled. Consistent with these theories, then, self-control is related to diverse types of criminal offending. Our significant finding of a direct effect for self-control is consistent with the recent research of Grasmick and his colleagues (1993).¹⁸

Self-control is also indirectly related to intentions to offend in a way consistent with the Gottfredson-Hirschi and Wilson-Herrnstein theories. Two components of low self-control are a present orientation and a lack of regard for others. This would suggest that persons low in self-control would perceive a higher utility for crime since the rewards are immediate, would discount the costs since they are delayed, and would be insensitive to social censure. Wilson and Herrnstein’s theory would further predict that those low in self-control would have less developed consciences, making self-censure less effective. To examine these expected effects, we regressed self-control on the measures of perceived utility, total sanctions, and shame. For each of the three offenses the results conformed to theoretical expectations. We found a significant positive relationship between self-control and perceived utility and significant inverse effects for self-control on both total sanctions and shame.¹⁹ We have, then, clear evidence for several key hypotheses of the Gottfredson-Hirschi and Wilson-Herrnstein theo-

¹⁸ Grasmick et al. (1993) tested an interactive model, examining among other things the interaction of self-control and criminal opportunity. They reported a main effect for self-control for offenses involving fraud but not for offenses involving force.

¹⁹ This was true when self-control and a measure of prior offending were included in the model. The amount of variance explained in each case was not, however, substantial (less than 10%), suggesting that factors other than self-control are affecting these choice-relevant variables.

Table 2. Tobit Regression Coefficients, for Intentions to Commit Theft, Drinking and Driving, and Sexual Assault

Exogenous Variables	Theft		Drinking and Driving		Sexual Assault	
	<i>b</i>	(<i>t</i>)	<i>b</i>	(<i>t</i>)	<i>b</i>	(<i>t</i>)
Gender	.3967	(1.049)	-.6863	(-2.388)	b	
Prior behavior	2.2547	(5.637)	3.9375	(14.262)	.8292	(2.332)
Lack of self-control	.0807	(4.415)	.0570	(4.066)	.1126	(3.332)
Scenario conditions						
1st condition	.0547	(.147)	.1189	(.439)	-.1441	(-.226)
2d condition	.0890	(.688)	-.0108	(-.039)	.2582	(.407)
3d condition	.0594	(.173)	1.0053	(3.705)	-.3039	(-.486)
4th condition	a		.0401	(.148)	.8753	(1.391)
Total sanctions	-.0003	(-2.136)	-.0005	(-5.048)	-.0004	(-2.403)
Shame	-.0869	(-2.487)	-.0990	(-4.191)	-.0851	(-1.313)
Perceived utility	.6548	(7.960)	.4695	(5.646)	.3293	(2.990)
Constant	-6.223		-1.472		-9.296	
(<i>n</i>)	(643)		(661)		(365)	

a The theft scenario involved only three manipulated conditions (see Table 1).

b Only males are involved in this analysis.

ries. Persons low in self-control perceive the rewards of crime as more valuable and the costs of crime as less aversive, are less likely to feel the “pangs of conscience,” and are more likely to report that they would commit crimes than those with more self-control.

Because the data are not longitudinal, however, we cannot test another important hypothesis, whether lack of self-control is time stable. Indirect evidence, however, suggests that it is. We regressed self-control on respondent self-reports of prior drunk driving, theft, and violence. In all three cases, the association was positive and highly significant, which indicates that current self-control is related to past behavior. We appreciate, of course, that this analysis does not resolve the issue of direction of causality, but the positive association is consistent with stability.

Both theories, as well as routine activity/rational choice theory, also predict that immediate characteristics of the criminal opportunity are choice relevant. Few of the manipulated scenario conditions had a significant direct effect on respondents' intentions to offend. None of the situational factors in the theft scenario were related to such intentions, and three out of four conditions in the drinking and driving and sexual assault scenarios were insignificant. For drinking and driving, only the inconvenience of the scenario character having to get his/her car the next day (condition 3) was related to the outcome variable; the association is positive as expected. For sexual assault, respondents receiving the scenario depicting some consensual sexual activity (the scenario female allowed the male to kiss and fondle her for a few minutes) reported higher

intentions to commit the assault than respondents who received scenarios where there was no sexual activity prior to the assault (the female immediately told the male to stop kissing and fondling her).

While only limited evidence of scenario conditions having a direct effect on intentions was found, evidence of scenario conditions having an indirect effect via their impact on respondent perceptions of risks and benefits is more substantial. Regressions of scenario conditions on total sanctions, shame, and perceived pleasure reveal that several of these contextual factors did significantly affect respondents' perceptions of the costs and benefits of offending. For drinking and driving, sanction costs were significantly lower under the condition where the scenario character had a shorter distance to drive (1 vs. 10 miles, thereby reducing exposure time), could avoid surveillance by staying off heavily traveled streets ("back roads" vs. Route 1), and where the danger of detection by state police was lower (state police budget cutbacks vs. "crackdown" on drunk driving). The perceived reward of offending was also significantly higher under each of these conditions as well. For sexual assault, the likelihood of sanctions was perceived to be lower when both characters were described as being drunk and if the female lived alone. For theft, however, none of the scenario conditions were significantly related to total sanctions, shame, or perceived pleasure.

While the evidence of the objective crime circumstances directly affecting intention is less than compelling, evidence of perceived benefits and costs directly affecting intentions is very strong and in the theoretically expected direction: Perceived pleasure is positively related to intentions to offend and total sanctions and shame negatively related to intentions. With one exception, all such relationships are highly significant.²⁰ The findings of an inhibiting effect of external and internal control mechanisms, captured, respectively, by total sanctions and shame, is consistent with other recent deterrence and rational choice research (Klepper & Nagin 1989a, 1989b; Nagin & Paternoster 1991; Grasmick & Bursik 1990).

Further, the magnitudes of the associations of rewards and costs with intentions are quite large. Table 3 reports estimates of the percentage change in the dependent variable associated with a standard deviation increase in the specified independent

²⁰ The effect of shame on intentions to commit sexual assault was in the expected theoretical direction but not statistically significant ($t = -1.313$). It may be that shame had no effect on sexual assault because this offense only concerns males, and shame is more effective in inhibiting the conduct of females. Such was not the case, however. Separate analyses by gender were conducted on theft and drinking and driving. Shame had a significant inverse effect on intentions to drink and drive for females, but a non-significant effect for theft. For males, shame had a significant effect on both theft and drinking and driving.

variable holding all other independent variables in the model constant at their sample means.²¹ A 1 standard deviation increase in total sanctions reduces intentions 17% for theft, 22% for drinking and driving, and 40% for sexual assault. The corresponding changes for shame are, respectively, -18%, -18%, and -20%. A 1 standard deviation increase in perceived pleasure increases intentions 67% for theft, 23% for drinking and driving, and 55% for sexual assault.²² These changes are of comparable magnitude to those associated with self-control (39%, 17%, and 83%, respectively).

The lesson we deduce from Tables 2 and 3 is that while poor self-control plays a major role in explaining variation in intentions to offend, it is by no means the sole determinant of such intentions. Perceived risks and rewards play comparably important roles. In our judgment this is noteworthy because two of these variables, total sanctions and shame, are classical social control variables.²³ We interpret this evidence as indicating that independent of lack of self-control conventionally posulated mechanisms of social control are operating.

We acknowledge, however, that there are other interpreta-

²¹ Unlike the coefficients of a least squares regression model, the coefficients of a tobit model cannot be directly used to compute magnitudes; the coefficient does not equal the change in the response variable associated with a 1-unit change in the coefficient's associated independent variable. The calculations reported in Table 3 were based on the following formula for computing the expected value of the response variable, $E(y)$, for given values of the exogenous variables, x :

$$E(y) = \phi(x\theta/\sigma) [x\theta + \sigma \Phi(x\theta/\sigma) / (1 - \phi(x\theta/\sigma))],$$

where θ is a vector of estimated tobit coefficients, σ is the estimated standard deviation of the error term, ϵ , and $\phi(\cdot)$ and $\Phi(\cdot)$ are, respectively, the standardized cumulative normal distribution function and the standardized normal density function.

²² The substantial association of perceived pleasure with intentions is not surprising, but we note that the two variables are not synonymous. In the rational choice framework, would-be offenders are assumed to balance the perceived benefits and costs of offending. Thus, a basic prediction of this framework is that an individual will not engage in an a criminal act unless he or she perceives the act itself as producing benefits. To do otherwise would be irrational; the individual would risk punishment for no perceived gain. It does not follow, however, that just because the act is perceived as pleasurable the individual will necessarily commit it. If perceived risks outweigh perceived pleasures, the individual will be deterred.

²³ The model also includes two variables, prior offending and gender, that are not central to the investigation. They were merely included as "control" variables.

As expected, prior offending had a positive and significant association with intentions. Gottfredson and Hirschi argue that the positive association of past and future criminal involvement is a reflection of the time stability of lack of self-control. We note, however, that controlling for lack of self-control, prior behavior continues to have a highly significant positive relationship with intentions. While the magnitude of this association is mitigated modestly by the self-control index, it remains very large.

Our results concerning the gender effect are interesting and in some respects surprising. For both drunk driving and theft women reported significantly lower intentions of committing the act depicted in the scenario. However, with controls for other relevant variables the "male" effect in the larceny scenario, while positive, is statistically insignificant. Surprisingly, in the drunk-driving scenario, *ceteris paribus*, males were significantly *less* likely to drive while drunk than females. It is not clear what to make of this possible "female effect." It is very sensitive to model specification and becomes statistically insignificant if variables such as prior behavior or shame are deleted from the model.

Table 3. Expected Percentage in Offending

Scenario Type	% Change in Intentions
Theft:	
Self-control	39.3
Total sanctions	-17.4
Perceived pleasure	67.0
Shame	-17.9
Drinking and driving:	
Self-control	17.4
Total sanctions	-21.9
Perceived pleasure	23.2
Shame	-17.9
Sexual assault:	
Self-control	82.6
Total sanctions	-40.1
Perceived pleasure	55.5
Shame	-20.1

tions of the results. One is that responses to the survey items used to measure the social control variables may be a causal consequence of the intentions variable rather than the reverse. In an attempt to maintain internal consistency, respondents reporting a high (low) likelihood of engaging in the scenario act may have reported less (more) negative social repercussions. The fact that the randomly assigned scenario characteristics had little influence on reported intentions may give further credence to this interpretation.

While we cannot rule out this interpretation, we are skeptical of its plausibility. First, many of the experimental manipulations were designed to influence intentions indirectly through their impact on risk perceptions and subjective utility. As previously reported we did find more substantial evidence of scenario conditions affecting both these variables. Second, rank orderings of average responses across scenario crime types conform with research findings (Sellin & Wolfgang 1978; Rossi et al. 1974) that sexual assault is viewed as a more serious crime than drunk driving and larceny and that larceny, in turn, is a more serious crime than drunk driving. For example, the average reported likelihood of engaging in the scenario act is inversely related to crime seriousness and to virtually all of the social control measures. Such inverse associations across crime type could, of course, again be a reflection of the reverse-causality hypothesis, but in our judgment this interpretation strains credulity. Respondents would not only have to have the cognitive capacity to maintain internal consistency in their responses within crime type but also across crime type in a questionnaire of approximately 150 items.

A second interpretation of the results is that the seemingly

independent influence of the social control variables on intentions is an artifact of measurement error in the latent construct—lack of self-control. This interpretation harks back to our earlier discussion of the argument that strong social bonds are simply another manifestation of self-control and have no independent effect on the decision to offend. Because our index of self-control is an inexact measurement of the latent construct, the negative and significant associations of the social control variables with intentions are conceivably only a manifestation of the measurement error in self-control. Stated differently, the social control variables may be capturing the influence of that part of the latent construct, lack of self-control, that is not measured by our index of self-control.

We acknowledge that it is likely that to some extent the associations of the social control variables with intentions are inflated due to measurement error of the latent construct but we are skeptical that the associations are entirely or even predominately attributable to such error. Earlier we discussed the Sampson and Laub (1990, 1992, 1993) argument that social bonds affect criminal involvement independent of enduring personal characteristics related to lifelong patterns of antisocial behavior. They argue that events later in life, often fortuitous like meeting the “right” mate or employer, can and do have a pronounced impact on the strength of social bonds.

Our analysis here and findings reported in Nagin and Pateroster (1992) are consistent with the argument that self-control affects the strength of social bonds and the perceived pleasures of the criminal act. Variables such as total sanctions and shame are negatively and significantly related to lack of self-control and perceived utility is positively and significantly related. Notwithstanding, the associations only explain a small proportion of the variation in these choice relevant variables. This finding is consistent with Sampson and Laub’s position. To be sure, this limited explanatory power may again be a reflection of large measurement error in our index of self-control. This interpretation, however, is inconsistent with the index’s large and highly significant association with intentions. How, on one hand, can the index be a sufficiently reliable measurement of the latent construct to have a large and highly significant association with intentions but, on the other hand, be so poorly measured that other indicators of the latent construct are spuriously associated with intentions?

Discussion

We have examined the viability of two perspectives on criminal offending that have long traditions in criminology. One attributes crime to individual differences in criminal disposition

that are established early in life, remain stable throughout the life course, and are related to a wide range of criminal and non-criminal but self-destructive behaviors. This tradition has recently been reasserted by Wilson and Herrnstein and Gottfredson and Hirschi. A second tradition sees crime as the result of proximate situational influences and the rewards and costs of offending. This branch of criminological thought has recently been advanced in the form of lifestyle/routine activities and rational choice perspectives. For the most part, these two traditions have worked apart from, if not in opposition to, one another.

Our research has found evidence in support of both traditions. Intentions to engage in three very distinctive offenses—drunk driving, theft, and sexual assault—are positively and very significantly related to lack of self-control. This relationship holds and remains sizable in magnitude even after prior behavior, situational characteristics of the offense, and the perceived rewards and costs of offending were controlled. We also found that self-control is indirectly related to intentions to offend through its influence on choice-relevant variables such as total sanctions, perceived utility, and shame. The findings support the conclusions of Nagin and Farrington (1992a, 1989b) and Sampson and Laub (1990, 1992, 1993) that criminological theory must include stable individual differences in propensity to offend as a central construct.

We also found substantial evidence in support of the tradition that attributes variations in criminal offending to variations in more proximate influences, such as the accessibility and vulnerability of the target and perceptions of the costs and pleasures of offending. While the analysis was not particularly successful in identifying many situational elements that directly affected would-be offenders' decisionmaking, it did reveal evidence of contextual factors indirectly affecting respondents' intentions to offend via perceptions of the risks and satisfactions of offending.

Consistent with recent research in deterrence and rational choice theory (Bursik & Grasmick 1990; Nagin & Paternoster 1991; Bachman et al. 1992), we found that perceptions of the certainty of formal and informal sanctions and self-imposed shame effectively controlled respondents' intentions to offend. Importantly, we also found that a variable often omitted from previous deterrence/rational choice research—the perceived pleasure of offending—was significantly related to the expressed intention to offend. Moreover, the anticipated reward of offending generally had a greater impact on intentions than the perceived costs (Carroll 1978; Piliavin et al. 1986). As predicted by Gottfredson and Hirschi and by Wilson and Herrnstein, potential gains may be more important than potential

losses to would-be offenders because the former are more immediate while the latter are both uncertain and in the future.

In the end, we do not believe that the two criminological traditions examined here should be viewed as competing explanations. Therefore, evidence in support of one theory should not be viewed as evidence in refutation of the other. Quite the contrary, we think that our empirical findings suggest that both must be included in a complete understanding of crime. We close by briefly outlining an approach to unify the two theoretical perspectives.

A belief that variation in offending is reflective of variations in criminal propensity or poor self-control does not preclude the possibility that would-be offenders are sensitive to the attractions and deterrents of crime. As already emphasized, neither Wilson and Herrnstein nor Gottfredson and Hirschi portray those with poor self-control as beings who are irrational or inexorably drawn to crime regardless of the quality of available criminal opportunities. Quite the opposite, in both theories people are presumed to respond to incentives in a way that does not fundamentally differ from the criminal actor portrayed in theories that emphasize more immediate and instrumental factors.

What is distinctive about those who are highly impulsive or with poor self-control, therefore, is not that they are unresponsive to incentives. Rather, because of their lack of self-control, such persons are less able to commit themselves to a line of conventional activity. A characteristic feature of Wilson and Herrnstein's and of Gottfredson and Hirschi's criminally predisposed persons is that they are excessively present oriented. Such persons require immediate gratification, are insensitive to others, and are unable to persevere in a planned course of action. Persons with low self-control, then, are unlikely to be able to establish long-term social relationships, persist in educational training, or commit themselves to a career. Stated differently, those with low self-control find it difficult to invest in conventionality because they discount future rewards in favor of immediate pleasures. Since they have fewer investments in the future, persons with low self-control have much less at risk than those with greater self-control. We believe that the reason persons with poor self-control commit crimes at a consistently higher rate than others is because they have less to lose.

In the language of labor economics, because of their present-orientation those with poor self-control have a high discount rate. Since they place less value on future consumption, they are unlikely to invest in a line of activity that sacrifices immediate for future gratification. Those with high discount rates, therefore, are less likely to invest in human capital—education,

job training, or other activities that provide for future rather than current consumption. With less human capital accumulation than those with lower discount rates, those with poor self-control will have far less to lose by doing crime and fewer reasons to fear its consequences.

Rather than competing theories, then, we have found an important link between recent theories of time-stable criminal propensity and theories of criminal opportunity and rational choice. It is our intention to pursue this link in greater detail in subsequent research, and we encourage other researchers to do the same.

Appendix A. Scenarios

Sexual Assault Scenario

Susan and Josh have just returned to her apartment from a party. She and Josh have been dating each other for several months. Both of them had been drinking heavily at the party, and they are quite drunk. After they get to Susan's apartment, where she lives alone, they sit down on the couch and begin to listen to music. In a few moments Josh attempts to kiss and fondle Susan. She allows Josh to kiss and fondle her for several minutes. When Josh attempts to remove her clothes Susan says that she is not interested in having sex and tries to get off the couch. Josh then pins Susan to the couch so she cannot get up. He takes off her clothes and has sexual intercourse with her. Josh then leaves Susan's apartment.

Theft Scenario

Bill is a college sophomore and lives in the dorms. Bill wakes up and decides to take a shower. He goes to the shower room which consists of about a half dozen shower stalls and a separate changing room. It's about 8:00 A.M. on a Monday morning and a lot of people are up and about. He observes that three people are showering whom he does not recognize. As he starts to undress, Bill observes a \$20 bill sticking out of the pocket of someone's jacket. He takes the \$20 and leaves immediately.

Appendix B. Measures of Exogenous Variables

Self-Control

1. I devote time and effort to preparing for the future.
2. I act on the spur of the moment without stopping to think.
3. I do things that bring me pleasure here and now, even at the cost of some distant goal.
4. I base my decisions on what will happen to me in the short run rather than in the long run.
5. I try to avoid projects that I know will be difficult.
6. When things get complicated, I quit or withdraw.
7. I do the things in life which are easiest and bring me the most pleasure.
8. I avoid difficult tasks that stretch my abilities to the limit.
9. I test myself by doing things that are a little risky.
10. I take risks just for the fun of it.

11. I find it exciting to do things for which I might get in trouble.
12. Excitement and adventure are more important to me than security.
13. If I have a choice, I will do something physical rather than something mental.
14. I feel better when I am on the move than when I am sitting and thinking.
15. I'd rather get out and do things than read or contemplate ideas.
16. Compared to other people my age, I have a greater need for physical activity.
17. I look out for myself first, even if it means making things difficult for other people.
18. I'm not very sympathetic to other people when they are having problems.
19. I don't care if the things I do upset people.
20. I will try to get things I want even when I know it's causing problems for other people.
21. I lose my temper easily.
22. When I'm angry at people I feel more like hurting them than talking to them about why I am angry.
23. When I'm really angry, other people better stay away from me.
24. When I have a serious disagreement with someone, it's usually hard for me to talk calmly about it without getting upset.

Total Sanctions

Discovery Events

1. What is the chance you would be arrested by the police if you did what [the scenario character] did under these circumstances?
2. Suppose in fact you did what [the scenario character] did and *were not* arrested by the police. What is the chance that it would somehow become known that you had done this?

Consequences

1. What is the chance that you would be dismissed from the University of Maryland?
2. What is the chance that you would lose the respect and good opinion of your close friends?
3. What is the chance that you would lose the respect and good opinion of your parents and relatives?
4. What is the chance that you would jeopardize your job prospects?
5. What is the chance that you would go to jail?
6. What is the chance that you would lose your license?

Severity

1. How much of a problem would it create in your life if you were dismissed from the university for doing what [the scenario character] did?
2. How much of a problem would it create in your life if you lost the respect and good opinion of your close friends for doing what [the scenario character] did?
3. How much of a problem would it create in your life if you lost the respect and good opinion of your parents and relatives for doing what [the scenario character] did?
4. How much of a problem would it create in your life if you jeopardized your future job prospects for doing what [the scenario character] did?
5. How much of a problem would it create in your life if you lost your driver's license for doing what [the scenario character] did?

6. How much of a problem would it create in your life if you went to jail for doing what [the scenario character] did?

Shame

Discovery Events

1. What is the chance you would be arrested by the police if you did what [the scenario character] did under these circumstances?
2. Suppose in fact you did what [the scenario character] did and *were not* arrested by the police. What is the chance that it would somehow become known that you had done this?

Consequences

1. Would you feel a sense of guilt or shame if others knew that you had done this?
2. Would you feel a sense of guilt or shame if you were arrested for doing this?

Severity

1. How much of a problem would it create in your life if you felt a sense of shame and guilt for doing what [the scenario character] did?

Perceived Pleasure

1. How much fun or how much of a “kick” would it be for you if you did what [the scenario character] did under these circumstances?

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