Explaining Victim Self-Protective Behavior Effects on Crime Incident Outcomes

A Test of Opportunity Theory

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Prior research on victim self-protective behavior (VSPB) has largely been void of a theoretical basis. Accordingly, it remains unclear why it would be expected that victim actions might mitigate crime incident outcomes or under which circumstances such actions might be most successful. Using data from the National Crime Victimization Survey for periods 1992 to 2004, this study uses a nested logistic regression analysis to test the predictive utility of opportunity theory in explaining outcomes of VSPB during incidents of robbery and rape. The results suggest that opportunity theory provides a useful framework for understanding the effect of victim resistance on crime outcomes. Greater levels of victim resistance increase the effort needed by offenders, resulting in some cases in a 93% and 92% decrease in the odds of a robbery and rape being completed, respectively, compared to when no resistance is used. Implications for crime prevention practice are discussed.

Keywords: *victim resistance; self-protection; opportunity theory; victim behavior; situational crime prevention*

The existing literature suggests that most victim self-protective behaviors (VSPBs) decrease the likelihood that a crime will be completed. More specifically, forceful physical, forceful verbal, and nonforceful physical

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self-protective behaviors have been found to be effective in avoiding rape completion whereas nonforceful verbal self-protective behaviors have not (see Ullman, 2007, for a review of the literature). In addition, some findings indicate that forceful and nonforceful self-protective behaviors are effective in avoiding robbery completion (Block & Skogan, 1984; Kleck & DeLone, 1993; Tark & Kleck, 2004). What lacks within this rubric of research, however, is a theoretical basis for explaining why victim resistance operates in this manner. Nor is it certain how these victim actions might vary across contexts with differing situational characteristics present. To date, the collective body of VSPB research has largely been inductive in approach.

Perhaps one reason for the limited role of theory within this research topic stems from the failure to specify VSPB as relevant to crime as opposed to criminality. The large majority of theories within criminology are devoted to explaining tendencies of individuals to engage in crime. That is, they focus on identifying features of those who participate in crime relative to those who do not. A different theoretical contingent focuses instead on understanding the environment where crimes take place toward informing ways of reducing opportunities for crime behavior. The study of VSPBs during crime incidents is most relevant to understandings of crime events, whereas theories of criminality stand to shed little light on the topic.

This study moves to the other side of the scientific process and deductively investigates the utility of opportunity theory, specifically the theoretical premises of situational crime prevention (SCP) in explaining outcomes of victim self-protective actions taken during robbery and rape, while accommodating various contextual and situational factors. SCP is particularly relevant to the victim resistance issue, because it extends a theoretical basis for understanding and preventing crime incidents. It formally specifies ways of reducing opportunities for crime through altering the situational environment where crime occurs and stands to provide insight into the affect of victim behavior in preventing the completion of crime incidents.

Prior Victim Resistance Research

A considerable amount of VSPB research has focused on the types of self-protective behaviors that are most effective in preventing rape completion. A number of researchers have divided VSPBs into four categories: forceful physical, nonforceful physical, forceful verbal, and nonforceful verbal self-protective behaviors.

Forceful physical resistance refers to "active aggressive behaviors (e.g., wrestling, punching, biting, scratching, kicking, using a weapon, executing martial arts techniques) enacted by the victim directly against the offender to stop an attack" (Ullman, 1997, p. 193). In general, the majority of studies have found that forceful physical self-protective behaviors are effective in avoiding rape completion (Atkeson, Calhoun, & Morris, 1989; Bart & O'Brien, 1984, 1985; Becker, Skinner, Abel, Howell, & Bruce, 1982; Kleck & Sayles, 1990; Lizotte, 1986; Queen's Bench Foundation, 1976; Quinsey & Upfold, 1985; Ruback & Ivie, 1988; Ullman, 1997, 1998; Ullman & Knight, 1991, 1992, 1993; Zoucha-Jensen & Coyne, 1993).

Nonforceful physical resistance refers to "passive physical resistance techniques used by the victim to evade the offender's attack" (Ullman, 1997, p. 194). Examples include trying to avoid the offender, removing the offender's hands, pulling away from the offender, and running away from the offender. Research has generally found the use of nonforceful physical resistance to be associated with rape avoidance (Bart & O'Brien, 1984; Block & Skogan, 1986; Kleck & Sayles, 1990; Koss, Dinero, Seibel, & Cox, 1988; Levine-MacCombie & Koss, 1986; Marchbanks, Lui, & Mercy, 1990; Ullman & Knight, 1991; Zoucha-Jensen & Coyne, 1993). However, Ullman and Knight (1991) found two types of nonforceful physical resistance (fleeing and pushing the offender away) to be unrelated to the severity of sexual abuse.

Forceful verbal resistance refers to "active verbal strategies aimed at scaring the offender and/or attracting outside help" (Ullman, 1997, p. 194). Examples include screaming or yelling to scare the offender or to attract outside help and threatening the offender. Numerous studies have found forceful verbal self-protective behaviors to be effective in rape avoidance (Bart & O'Brien, 1984; Cohen, 1984; Kleck & Sayles, 1990; Koss et al., 1988; Queen's Bench Foundation, 1976; Quinsey & Upfold, 1985; Ruback & Ivie, 1988; Siegel, Sorenson, Golding, Burnam, & Stein, 1989; Ullman, 1998; Ullman & Knight, 1992; Zoucha-Jensen & Coyne, 1993). For instance, the Queen's Bench Foundation (1976), Bart and O'Brien (1984), Levine-MacCombie and Koss (1986), Quinsey and Upfold (1985), and Ullman (1998) found that screaming, a form of forceful verbal resistance, was associated with rape avoidance.

Nonforceful verbal resistance refers to the victim using nonaggressive verbal responses such as trying to reason with the offender, pleading, begging, or crying (Ullman, 1997). Nonforceful verbal self-protective behaviors have generally been found to be ineffective in avoiding rape (Bart & O'Brien, 1984; Levine-MacCombie & Koss, 1986; Ullman & Knight, 1991,

1992; Zoucha-Jensen & Coyne, 1993). In addition, Furby and Fischhoff (1992), in their review of 22 studies, found that talking to an offender in a nonforceful way (e.g., pleading, making a moral appeal, or reasoning with the offender) may actually be harmful to the victim. In an attempt to explain why nonforceful verbal actions do not appear effective in preventing rape completion, Ullman and Knight (1992) suggest that nonforceful verbal self-protective behaviors (e.g., pleading, begging) might actually coincide with how rapists want women to act, because rapists often want to feel "power and control over a weaker person" (p. 33).

In contrast to the general finding that the use of nonforceful verbal self-protective behaviors is ineffective in avoiding rape, Levine-MacCombie and Koss (1986) found that two types of nonforceful verbal actions (crying and reasoning with the offender) contributed to the prediction of rape avoidance. This divergent finding may be due to one of the characteristics of their sample: All of the women in their sample were victims of acquaintance rape.[1] Levine-MacCombie and Koss offer two possible explanations for their finding that crying and reasoning were effective in rape avoidance: (a) men who attack acquaintances may be more sensitive to crying and reasoning than men who attack strangers or (b) men who have a pre-existing relationship with a victim may be more responsive to crying and reasoning. Despite the significance of crying and reasoning, Levine-MacCombie and Koss point out that as in situations involving strangers, these self-protective behaviors are less powerful predictors of rape avoidance than more active strategies such as running away and screaming for help.

Although the majority of research has focused on sexual assaults, some research has explored the use of VSPBs in robberies (Block & Skogan, 1984; Conklin, 1972; Cook, 1986; Hindelang, 1976; Kleck, 1988; Kleck & DeLone, 1993; MacDonald, 1975; Normandeau, 1968; Tark & Kleck, 2004; Wolfgang, 1982; Ziegenhagen & Brosnan, 1985). Unlike with the sexual victimization research, the majority of these studies do not group the VSPBs into the four categories described above. Instead, most researchers have tended to either divide VSPBs into two categories, forceful and nonforceful resistance, or examine the influence of individual types of resistance on the outcome of robbery. Block and Skogan (1984) took the first approach and found that both forceful and nonforceful resistance were negatively related to experiencing a completed robbery (i.e., a financial loss). In other words, victims who resisted—either forcefully or nonforcefully—were less likely to have their property stolen.

Kleck and DeLone (1993) took the second approach and examined the influence of individual types of resistance. Specifically, using data from the

National Crime Survey from 1979-1985, they examined eight different forms of resistance.[2] Their results indicated that although robberies were less likely to be completed when victims used any of the eight types of resistance, some types of resistance were more effective than others. For example, resistance with a gun was the most frequently successful type of resistance, and armed resistance was more frequently successful than unarmed resistance.

Like Kleck and DeLone (1993), Tark and Kleck (2004) also examined the influence of individual types of resistance in a variety of personal crime contact incidents.[3] Using data from the 1992-2001 National Crime Victimization Surveys (NCVS), they found that 13 out of the 16 self-protective behaviors in their analysis were significantly related to the victim not suffering property loss during robbery incidents.[4] With the exception of "stalled/pretended to cooperate" and "screamed from pain or fear," all of these variables were associated with property loss not occurring.

One issue that has emerged, both within the sexual assault and robbery resistance literature, is whether a victim who uses self-protective behaviors is more likely to experience an injury. In other words, does fighting back lead to a higher likelihood of being injured or to more severe injuries? According to Ullman's (2007) review of studies on rape avoidance, "most studies showing that women's physical fighting is related to more physical injury still fail to take into account whether the women were already being physically attacked when they resisted" (p. 414). Research on rape which takes into account this temporal ordering of events (Kleck & Tark, 2004; Ullman, 1998; Ullman & Knight, 1992) suggests that the use of forceful self-protective behaviors does not lead to an increase in physical injury. However, the research on robbery appears less clear. For instance, although Tark and Kleck (2004) found that the majority of self-protective actions (14 out of 16 types) were not significantly related to a victim suffering an injury after resisting, two types were associated with injury: struggling and using other self-protective actions. In addition, three types of self-protective actions were found to be significantly related to the victim suffering a serious injury after taking self-protection actions: attacking without a weapon, screaming from pain or fear, and using other self-protection actions. Thus, some types of resistance, including some forceful physical resistance strategies, may be associated with an increased risk of injury in robbery incidents.

One of the limitations of previous research is the lack of firm theoretical guidance on the subject. In other words, although we know that some types of self-protective behaviors are effective in preventing rape and robbery completion, previous research has failed to fully explain why this is so.

Some researchers have made inductive speculations in an attempt to explain the aforementioned findings. For instance, Bart and O'Brien (1985) applied a feminist interpretation to their finding that pleading is ineffective in avoiding rape. Specifically, they argued that a victim's pleading during a rape is ineffective because "pleading with the assailant is giving him what he wants—a victim who acknowledges his ability to dominate" (Bart & O'Brien, 1985, p. 109). Fisher, Daigle, Cullen, and Santana (2007) also applied an inductive approach to the findings of their study of resistance among female college students. Specifically, they argued that victim resistance is successful when the force level of the victim matches, or is on par with, the level of force used by the offender, referred to as the "parity thesis."

In short, the literature clearly suggests that various types of victim actions are effective in preventing the completion of robbery and rape events. What lacks, however, is a theoretical basis for understanding why resistant victim behaviors operate as they do.

Theoretical Framework

The theoretical foundation for the present inquiry emerges from theories of crime opportunity. Opportunity theories hold criminal motivations as constant and argue that it is the distribution of opportunities that largely determines the occurrence of crime. In this view, an offender is only one part needed for crime to take place. Without an opportunity to carry out a crime event, an offender—regardless of motivation level—will not commit crime. The implication of this is that by reducing opportunities, crime can be prevented. In regard to victim self-protective behavior, there are three specific opportunity theories that might explain victim behavior impact on crime incident outcomes: routine activity, rational choice, and SCP (the latter draws heavily from the previous two).

Routine Activities Theory

The routine activity perspective further specifies the concept of opportunity by identifying that crime targets vary in their attractiveness to offenders and in terms of whether capable guardianship is present. Under this theory (Cohen & Felson, 1979), there are three essential elements that are required for a crime to occur. First, there must be the presence of a likely offender. Second, this motivated offender must come into contact with a suitable target. Third, both the motivated offender and suitable target must

converge in time and space when there is an absence of a capable guardian. Once these elements are met, then crime is possible. An assumption of the routine activity approach is that offenders have the capacity to make choices in deciding which targets are attractive and whether or not guardianship is present. Rational choice theory provides more clarification on offender decision-making within the environment and augments the routine activity approach.

The Rational Choice Perspective

The rational choice perspective, most notably articulated by Clarke and Cornish (1985) and Cornish and Clarke (1986), was originally conceptualized as a framework to inform SCP models. The essence of rational choice theory is that the decision to commit crime serves a specific purpose for the offender and that decision-making models vary by crime type—that is, different types of crime offer different costs and benefits for the offender (Clarke, 1997; Clarke & Cornish, 1985; Cornish & Clarke, 1986). Under this view, crime is not a random occurring event but rather a product of the interaction between the offender and his or her situational environment. In their model, Clarke and Cornish (1985) and Cornish and Clarke (1986) argue that individuals use rudimentary calculus in decision-making by which they analyze the costs and benefits of engaging in crime. Where, when, how, and what type of crime to commit, it is argued, is a result of an offender's assessment of the perceived effort, risk, and reward involved in the commission of specific criminal acts.

Rational choice theory recognizes that offender decision-making is imperfect. That is, offenders often have limited access to information, may process information that is incorrect, or may act in haste or otherwise fail to accurately calculate the situational variants of an event. Often referred to as "bounded rationality," this suggests that offenders are limited in their understanding of the circumstances involved in the decision of when, where, and how to commit crime.

Situational Crime Prevention

The SCP framework draws heavily from the routine activities and rational choice theories and provides a basis for organizing crime reduction strategies (Clarke, 1997). In practice, the SCP model is based on an applied research methodology that serves as the template to define and understand the problem, formulate solutions, and evaluate the results. To assist with

developing crime prevention solutions, SCP provides a classification of 25 situational techniques grouped within 5 conceptual categories that describe the intention or mechanism of the intervention (Cornish & Clarke, 2003). Together, the underlying theories explain how each of the various situational tactics works in reducing crime opportunity. These five categories include (a) techniques to increase the amount of effort needed to engage in crime, (b) techniques to increase the risk for offenders, (c) tactics to reduce the rewards for engaging in crime, (d) methods to reduce provocations, and (e) techniques to remove the excuses for engaging in crime.

Theoretical Implications

Taken together, these ideas seem to offer an explanation for why and how victim behavior could affect the outcome of crime events. Victim actions could serve to reduce opportunity for crime by either altering the suitability of the target (as making it no longer attractive) and/or by alerting nearby guardianship. How victim behavior influences crime opportunity, then, will be shaped by three conditions.

First, outcomes of VSPB will be dependent on the level of self-protective action taken. Greater levels of victim resistance and/or force would make it more difficult for the offender to complete a crime transaction by increasing the effort needed and offsetting the relationship between effort and reward. Thus, an offender would enter into a crime episode with a previously conceived notion as to the level of effort needed to obtain the expected reward. Encountering resistant behavior by the victim could increase the effort to such a degree that it makes obtaining the reward no longer worthwhile. Moreover, lower levels of victim force may not increase effort for offenders, but it could alert nearby guardianship, thereby increasing the risk of detection and apprehension for offenders. The alerting of guardianship, however, is contingent on where the crime takes place and whether a potential guardian is in close proximity.

Therefore, the second condition is that outcomes of VSPB will be dependent on the place where crime events occur. Events taking place in private or otherwise confined settings are less likely to contain potential guardians that could increase risk for offenders. Crime events occurring in public places, however, will be more susceptible to guardianship, though this will also vary across public places. At the least, public settings will present a greater unknown for offenders as to whether a potential guardian may be present. Thus, resistive action by victims might increase concerns of

offenders that someone has been alerted to the crime at hand. This concern would be less salient for offenders in private confined settings where the impacts of victim actions are more bounded and the absence of capable guardianship is more certain.

The third condition is that outcomes of VSPB will be determined by the presence of capable guardians. The presence of capable guardians will increase the risk involved for offenders to complete the crime and could also increase the effort if the bystander intervenes. When no such guardian is present, the risk of detection and/or apprehension is less. What determines a capable guardian from one that is not could be the presence of any bystander who either (a) intervenes in the incident; (b) notifies others for help, such as calling the police during the incident; or (c) observes the incident and later identifies the offender to police. In each case, the risk of detection and/or apprehension for the offender is increased. When a bystander takes none of these actions, he or she could be considered non-capable. Yet even if no action is taken by the bystander (assuming that he or she is not a co-offender), the offender could perceive that the bystander will carry out one of these actions, which could be sufficient to deter the offender from completing the crime. Clearly, where the bystander is actually a co-offender, this prediction does not apply.

One premise of SCP is that for any prevention technique to be successful, it must be crime specific, because various criminal acts require different processes for offenders to complete. Thus, although one form of intervention might be successful in reducing opportunity for auto theft, for example, it may not achieve the same outcome for another crime such as purse snatching. That is because each crime type requires different procedures and differing levels of effort, risk, and reward for offenders. Despite this specificity requirement, VSPBs should generally lead to similar outcomes in various crime incident types, insofar as they involve a distinct interaction between a victim and an offender.

With this reasoning, we derive the following propositions regarding VSPB during crime events:

Proposition 1: As the level of victim resistance increases, the effort for the offender will also increase, thereby decreasing the odds of crime completion.

Proposition 2: Incidents that occur in public places will pose greater risks for offenders and will have lower odds of completion compared to those incidents occurring in private places.

Proposition 3: Incidents that occur in the presence of a bystander increase the risk for the offender, thereby decreasing the odds of crime completion.

Data and Method

The present study used data from the 1992-2004 NCVS. The NCVS, previously called the "National Crime Survey," is considered the United States's primary source of information on patterns of criminal victimization (Skogan, 1981). The NCVS collects data from a nationally representative sample of approximately 50,000 households across the United States. The survey is sponsored by the Bureau of Justice Statistics and is conducted by the U.S. Census Bureau (U.S. Department of Justice, Bureau of Justice Statistics, 2006).

The NCVS is suitable for a victim resistance study, because it asks victims if they used any self-protective behaviors. Specifically, victims who report that they have been victimized are asked, "Was there anything you did or tried to do about the incident while it was going on?" Respondents who answer "yes" are then asked about the particular self-protective behaviors they used (e.g., attacked or threatened the offender with a gun or other weapon, chased the offender, yelled, cooperated with the offender, ran away, etc.).[5] In addition, victims are asked whether they were injured in the incident. Victims who report that they were injured are then asked about the sequencing of their use of self-protective actions. In other words, did they use self-protective actions before, during, or after they were injured? Victims can report using one or more self-protective behaviors at any of the three times (i.e., before, during, or after).

Dependent Variables

Details of all variables used in the analyses and their respective coding arrangement can be found in the Appendix. Three dependent variables were examined: robbery, rape, and victim injury. The first two are central to the current theoretical test, whereas the latter is less relevant to theory but is essential to the victim resistance debate as discussed above. The NCVS defines rape as "forced sexual intercourse and includes both psychological coercion as well as physical force. Forced sexual intercourse means vaginal, anal, or oral penetration by the offender(s)" or penetration by a foreign object such as a bottle. Robbery is defined by the NCVS as "a completed or attempted theft, directly from a person, of property or cash by force or threat of force, with or without a weapon." Both robbery and rape dependent variables were coded dichotomously: Completed incidents were coded as 1, and attempted incidents were coded as 0.

A third dependent variable was created from the data questions that asked whether and when the victim was injured. To account for the time order of victim resistance to victim injury, a new dichotomous variable was created and coded as 1 if the victim specified that the injury took place during or after they resisted and coded as 0 if there was no injury or the injury occurred before the resistance commenced.

In addition, the sample was restricted to cases where there was a single offender. The 1992-2004 NCVS file contains 3,995 robbery incidents and 858 cases of rape before the exclusion of cases involving multiple offenders. Using only cases where a single offender was involved resulted in 2,220 robberies, 782 rapes, and 975 cases of victim injury for analysis. This was done primarily because of the need to isolate the effect of the presence of a bystander according to the theoretical proposition stated above. For cases involving multiple offenders, the situation becomes less clear as to which are actually bystanders and/or co-offenders. Moreover, there is some evidence that these incidents may be characteristically different than incidents involving lone offenders. For instance, Ullman (2002) points out that gang rapes often seem to be more violent and more difficult for women to avoid than incidents involving single offenders.

Independent Variables

Level of victim resistance and offender force. The NCVS asks respondents who were victimized, "Was there anything you did or tried to do about the incident while it was going on?" Respondents who answer "yes" to this question are then asked a series of closed-ended questions to ascertain what specific self-protective behaviors they used. Respondents are asked if they used physical force toward the offender, if they chased the offender, if they threatened to injure the offender, and so forth. These actions are not mutually exclusive. In other words, respondents may have used more than one type of protective action. Similar questions are asked regarding the nature of force used by the offender. Although previous research has typically examined four categories of victim self- protective behaviors— forceful physical, nonforceful physical, forceful verbal, and nonforceful verbal (Bachman, Saltzman, Thompson, & Carmody, 2002; Clay-Warner, 2002, 2003; Ullman, 1997)—we arrange them in a manner more suitable for testing the theoretical propositions presented.

From the series of questions relating to victim and offender actions, two ordinal variables were created, one for level of victim resistance and one for level of force used by the offender. Each was coded from 0 to 4, with 0

being the least amount of resistance and/or force (e.g., none) and 4 being the greatest. For victims, a 0 was coded if no force was used and a 1 was assigned when the victim resisted only verbally. The latter included yelling at the offender; turning on lights[6]; threatening to call police; calling the police or guard; trying to attract attention or help or warn others (e.g., crying out for help, calling children inside, or screaming); cooperating or pretending to cooperate with the offender (e.g., stalling, doing what the offender asked)[7]; or arguing, reasoning, pleading, bargaining, and so forth.

A code of 2 was assigned where the victim used physical resistance and/or force without a weapon. This included attacking without a weapon (hitting, kicking, etc.); threatening to injure the offender without a weapon; defending self or property (e.g., struggling, ducking, blocking blows, holding onto property); chasing, trying to catch or hold the offender; or running or driving away, hiding, or locking the door. A code of 3 was recorded where the victim physically used or threatened the offender with an object or knife. This included attacking the offender with other weapons or threatening to injure the offender with a weapon other than a gun. Finally, a code of 4 was assigned where the victim attacked the offender with a gun, fired a gun, or threatened to injure the offender with a gun.

In a similar fashion for offender force level, 0 was coded where no force was used, 1 was coded where the offender used verbal force only, 2 when the offender used physical force without a weapon, 3 when the offender used or threatened with an object or knife, and 4 when an offender used or threatened with a gun. When a victim or offender used a combination of actions, only the highest level of resistance or force was assigned. The rape models revealed too few cases for "used an object" or "used a knife or gun" categories to be used separately, so these two categories were collapsed for the rape models. Thus, the categories here ranged from 0 to 3, with 3 representing resistance to force with an object, knife, or gun.

Other victim–offender variables. Consistent with previous research regarding victim resistance, we included the following variables: age of victim (Becker et al., 1982; Block & Skogan, 1984; Clay-Warner, 2003; Kleck & DeLone, 1993; Kleck & Sayles, 1990; Kleck & Tark, 2004; Queen's Bench Foundation, 1976; Quinsey & Upfold, 1985; Ruback & Ivie, 1988; Tark & Kleck, 2004; Ullman, 1998; Ziegenhagen & Brosnan, 1985), age of offender (Clay-Warner, 2003; Kleck & DeLone, 1993; Kleck & Sayles, 1990; Ullman, 1998), race of victim (Becker et al., 1982; Block & Skogan, 1984; Cohen, 1984; Kleck & Sayles, 1990; Kleck & Tark, 2004; Marchbanks et al., 1990; Ruback & Ivie, 1988; Tark & Kleck, 2004; Ullman, 1998; Ziegenhagen & Brosnan, 1985), race of offender (Bart & O'Brien, 1985; Kleck & DeLone,

1993; Kleck & Sayles, 1990; Kleck & Tark, 2004; Ruback & Ivie, 1988; Ullman, 1998), sex of victim (Block & Skogan, 1984; Kleck & DeLone, 1993; Kleck & Sayles, 1990; Ziegenhagen & Brosnan, 1985), and sex of offender (Kleck & DeLone, 1993; Kleck & Sayles, 1990). In addition, we include a variable for victim–offender relationship—namely, whether the offender was a stranger. Prior research examining victim–offender relationships on rape completion has generally found that victim resistance is least effective when the offender is an intimate or acquaintance (Clay-Warner, 2002; Koss, 1988; Scott & Beaman, 2004; Ullman, Karabatsos, & Koss, 1999; Ullman & Knight, 1993). Because self-protective behavior against intimate partners has been shown to increase the probability of victim injury, the relationship variable was reverse coded to more clearly identify this tendency in the injury models.

We also include a variable for the use of alcohol or drugs by the offender. Previous research examining alcohol effects has been mixed with some finding that alcohol consumption by both victims and offenders leads to greater likelihood of rape completion (Ullman et al., 1999; Ullman & Knight, 1993), whereas others have found that offenders' use of alcohol decreases the probability of rape completion (Brecklin & Ullman, 2001; Martin & Bachman, 1998). Moreover, recent research examining the effects of alcohol on offender decision-making further warrants its inclusion in the models (Exum, 2002).

Situational variables. The NCVS data allowed for the inclusion of three situational variables in the analyses: (a) whether the incident took place in a public or private location, (b) whether a bystander was present during the incident, and (c) the time of day that the incident occurred. Research examining the influence of location on rape completion is mixed. Some have found that rapes occurring in private locations are more likely to be completed (Ullman, 1997, 2002), whereas others have found that being in private locations did not influence completion when controlling for victim resistance actions (Clay-Warner, 2002). Understanding the affect of bystanders on incident outcomes is also inconclusive. Although Sacco and Kennedy (2002) assert that the presence of a bystander is just as likely to aggravate as it is to mitigate a crime incident, Kruttschnitt and Carbone-Lopez (2006) found that bystanders provoked violence in domestic encounters where the offenders were female. Finally, few have examined time of day on crime completion. One study, however, found that rapes were more likely to be completed when they occurred at night (Bart & O'Brien, 1985). Here, night was coded as 1 if the offense occurred between the hours of 6 p.m. to 6 a.m.

Analytical Framework

To test the propositions, a series of nested binary logistic regression models were used. Logistic regression is suitable for the present inquiry, because the dependent variables have been assigned a dichotomous arrangement. Logistic regression is also useful, because it provides an odds ratio to gauge the effect size of the independent variables. For both robbery and rape, three models were estimated. Model 1 included the victim–offender variables, some of which have been examined elsewhere and some of which have not. Model 2 included the situational variables along with the victim–offender variables. It would have been useful to examine differences between the respective robbery and rape models with a cross-coefficient z test (Brame, Paternoster, Mazerolle, & Piquero, 1998); however, the alteration of and differential use of variables across the regression models precluded such comparisons.

The NCVS is based on a stratified, multistage cluster sample that is designed to be approximately self-weighted (U.S. Department of Justice, 1997). Despite self-weighting, there has been considerable debate as to whether weights should be used when performing regression-based analyses. The concern is that coefficients and standard errors may be biased due to differential probabilities of selection and nonresponse. However, several studies have found little difference in the results when using weighted versus unweighted NCVS data (e.g., Baumer, 2002; Dugan, 1999; Lohr & Liu, 1994). Following the findings of Lohr and Liu (1994), the following results were computed using unweighted data.

Findings

Table 1 presents descriptive statistics for the variables used in the analyses. An examination of this table reveals several central findings. First, both robberies and rapes were completed at about the same rate, 61% and 63%, respectively, whereas only about 20% of the victims were injured either during or after they provided resistance. Second, the victim and offender force levels differed significantly across the two crime types. Offenders tended to use greater levels of force during robberies than during rapes (robbery force $M = 2.46$ vs. rape force $M = .87$; $t = –34.760$, $df = 1400$; $p < .001$, two-tailed, equal variances not assumed). This is due to more offenders using a gun (28% compared to just 1.5%) and some other form of weapon (9% vs. about 3%) in the commission of robberies. The inverse was

Table 1
Descriptive Statistics for Variables Used in the Analyses

Variable	Robbery (n = 2,220) Frequency	%[a]	Rape (n = 782) Frequency	%[a]	Victim Injury (n = 975) Frequency	%[a]
Dependent variables						
Completed or occurred	1,358	61.2	494	63.2	190	19.5
Victim–offender variables						
Victim level of resistance or force[b]	1.09	0.986	1.26	0.898	1.69	0.645
None	873	39.3	224	28.6	68	7.0
Verbal only	367	16.5	141	18.0	190	19.5
Physical, no weapon	912	41.1	406	51.9	694	71.2
Weapon or knife	44	2.0	9	1.2	19	1.9
Gun	24	1.1	2	0.3	4	0.4
Offender level of force[b]	2.46	1.12	0.87	1.09	1.62	1.04
None	64	2.9	441	56.4	256	26.3
Verbal only	303	13.6	25	3.2	3	0.3
Physical, no weapon	1,028	46.3	281	35.9	575	59.0
Weapon or knife	199	9.0	23	2.9	135	13.8
Gun	626	28.2	12	1.5	6	0.6
Non-White victim	551	24.8	154	19.7	225	23.1
Female victim	1,019	45.9	736	94.1	742	76.1
Victim age[b]	31.92	15.2	27.16	11.04	29.4	13.23
Male offender	1,979	89.9	761	97.6	897	92.4
Non-White offender	1,231	58.0	251	33.0	410	43.1
Offender age						
< 12	20	1.0	1	0.1	2	0.2
12 to 14	138	6.6	8	1.1	35	3.7
15 to 17	223	10.7	47	6.3	75	8.0
18 to 20	304	14.6	95	12.7	123	13.1
21 to 29	717	34.4	264	35.3	336	35.7
> 30	684	32.8	332	44.4	370	39.3
Offender is a stranger	1,203	75.2	114	25.7	252	45.2
Offender drug or alcohol use	647	36.0	389	70.1	450	60.4
Situational variables						
Public location	1,204	57.7	118	16.3	298	32.2
Bystander present	1,105	50.6	139	18.2	345	35.9
Nighttime incident	1,102	50.3	572	74.1	611	63.3

a. The valid percentages are reported.
b. Means and standard deviations are reported for these rows.

found for victim resistance levels where victims on average used greater force during rapes compared to robberies (rape resistance level $M = 1.26$ compared to robbery resistance $M = 1.09$; $t = 4.534$; $df = 1491$; $p < .001$, two-tailed, equal variances not assumed). This is due to a substantial portion of no force being recorded for offenders (56%), which may reflect date rape scenarios (the high rate of nonstranger offenders [about 74%] in rape cases also supports this result).

For cases of injury, the average level of force was about the same comparing victims to offenders (victim $M = 1.69$ vs. offender $M = 1.62$). This may be because once the victim sustains an injury, inhibitions about resisting are removed. Note that some 80% of victims in this category were injured prior to their providing resistance. Clearly, it would be more desirable to have a proportionate distribution of cases within each of the force-level categories. Although that was not the case with these data, the number of cases is sufficient to identify relationships among the examined variables in the following analyses.

Third, across all categories, the victims were mostly White (robberies, 75%; rape, 80%; injury, 77%), though the difference between the robbery and rape models was significant ($t = -3.028$; $df = 1474$; $p < .01$, two-tailed, equal variances not assumed). Overall, victims' average age was around 29 years; yet this also differed significantly between the robbery and rape models ($t = -9.354$; $df = 1875$; $p < .001$, two-tailed, equal variances not assumed). For rapes and injury cases, the victims were mostly female (rape, 94%; injury, 76%), whereas in the robbery cases, the victims were disproportionately male (54%; robbery to rape $t = 35.663$; $df = 2766$; $p < .001$, two-tailed, equal variances not assumed). Offenders were mostly male across all categories (robbery, 90%; rape, 98%; and injury, 92%) with no significant differences ($t = -1.816$; $df = 2426$; n.s. two-tailed, equal variances not assumed). For robberies, offenders were mostly non-White (58%), which was significantly different from rape cases ($t = -2.665$; $df = 1711$; $p < .01$, two-tailed, equal variances not assumed). The distribution of offender race for rape cases was more similar to the injury sample in which the offender was typically White (rape, 67%; injury, 57%). Likewise, offenders tended to be over the age of 30, except for robbery cases where offenders were slightly more likely to be in the 21 to 29 age range, though this did not significantly differ between the robbery and rape cases ($t = -1.266$; $df = 1568$; n.s. two-tailed, equal variances not assumed). Offenders were most likely to be a stranger to the victim in robbery cases (about 75%) but less likely to be a stranger in rape and injury cases (about 26% and 45%, respectively; robbery to rape $t = -24.048$; $df = 1927$; $p < .001$, two-tailed,

equal variances not assumed). Offenders were most commonly reported to be under the influence of alcohol or drugs in rape (70%) and injury (60%) cases, where only 36% of robbery offenders were perceived by the victim to be under the influence (robbery to rape $t = -10.222$; $df = 1250$; $p < .001$, two-tailed, equal variances not assumed). Clearly, the robbery count is likely to be underreported given the nature of the offense.

Finally, rape and injury cases were more likely to take place in private settings (84% and 68%, respectively), whereas robberies mostly occurred in public venues (about 58%; robbery to rape $t = -23.566$; $df = 1898$; $p < .001$, two-tailed, equal variances not assumed). Bystanders were more commonly present during robberies (about 51%), compared to only 18% of the time for rapes and 36% of the cases of injury (robbery to rape $t = -18.481$; $df = 1777$; $p < .001$, two-tailed, equal variances not assumed). Rapes most commonly occurred during nighttime hours (74%), as did injuries (63%); however, robberies occurred equally during daytime and nighttime hours (50%; robbery to rape $t = .657$; $df = 3000$; n.s. two-tailed, equal variances assumed).

Table 2 provides the results of the two models predicting robbery completion. In Model 1, there were seven significant findings. Most important and in support of the hypothesis, the level of VSPB was inversely related to robbery completion. That is, all forms of resistance significantly decreased the odds of robbery completion in a sequential manner. More specifically, resisting verbally decreased the odds of completion by 58% (.423), physical resistance decreased the odds by 76% (.236), resisting with an object or knife decreased the odds by 86% (.137), and resisting with a gun decreased the odds of robbery completion by 92% (.082). In addition, being both a non-White and a female victim increased the odds of a completed robbery, 55% (1.547) and 65% (1.650), respectively. An offender who was a stranger was inversely related to robbery completion such that the odds of completion decreased, 37% (.625), when this was the case. Non-White offender was marginally significant ($p = .054$) and decreased the odds of robbery completion very slightly at about 1% (.995).

Model 2 of Table 2 presents the results of the victim–offender variables with the inclusion of the situational variables. The victim–offender findings from Model 1 remain the same in Model 2, keeping the same directional relationship. Specifically, all forms of victim resistance were significant with odds reductions of 57% (.429) for verbal, 76% (.235) for physical, 87% (.129) for object or knife, and 93% (.073) for resisting with a gun. As before, non-White and female victims were positively related to robbery completion, whereas stranger offenders were inversely related. The results

Table 2
Nested Binary Logistic Regression Models for Robbery ($N = 2,220$)

	Model 1			Model 2		
Variable	B	SE	Odds	B	SE	Odds
Victim–offender variables						
Victim resistance/force level[a]						
Resisted verbally only	–0.861***	.140	0.423	–0.846***	.141	0.429
Used physical resistance/force only	–1.446***	.114	0.236	–1.4449**	.115	0.235
Threatened or used object or knife	–1.984***	.341	0.137	–2.051***	.348	0.129
Threatened or used gun	–2.507***	.520	0.082	–2.620***	.523	0.073
Offender force level[a]						
Used verbal only	–0.051	.300	0.950	–0.086	.302	0.918
Used physical force only	0.303	.282	1.355	0.299	.284	1.348
Threatened or used object or knife	0.531	.316	1.700	0.505	.318	1.657
Threatened or used gun	0.305	.288	1.357	0.273	.290	1.314
Non-White victim	0.436***	.113	1.547	0.430***	.114	1.537
Female victim	0.501***	.101	1.650	0.475***	.101	1.607
Victim age	0.005	.003	1.005	0.003	.003	1.003
Male offender	0.004	.006	1.004	0.004	.006	1.004
Non-White offender	–0.005[b]	.003	0.995	0.005	.003	0.995
Offender age	0.003	.002	1.003	0.002	.002	1.002
Offender drug use	0.128	.107	1.137	0.087	.108	1.091
Offender stranger	–0.469***	.104	0.625	–0.370***	.112	0.691
Situational variables						
Public location				–0.262*	.107	0.769
Bystander present				–0.228*	.096	0.796
Nighttime incident				0.016*	.007	1.016
-2 log likelihood	2664.559			2642.734		
Nagelkerke R-square	.172			.184		

a. "No resistance or force" is the reference category.
b. Marginally significant ($p = .054$).
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

also reveal that all three situational variables were significant predictors of whether a robbery was completed. Consistent with the hypothesis, when the robbery took place in a public location, the odds of completion significantly decreased 23% (.769). When a bystander was present, the odds of completion significantly decreased 20% (.796), and when the incident took place at night, the odds of completion slightly increased less than 1% (1.016). Finally, the Nagelkerke R-square in Model 1 was .172, rising slightly to .184 in Model 2.

Table 3 presents the results of the two models for predicting rape completion. As before, Model 1 examined only victim–offender variables.

Table 3
Nested Binary Logistic Regression Models for Rape ($N = 782$)

Variable	Model 1			Model 2		
	B	SE	Odds	B	SE	Odds
Victim–offender variables						
Victim resistance/force level[a]						
Resisted verbally only	−1.076***	.275	0.341	−1.045***	.278	0.352
Used physical resistance/force only	−1.888***	.231	0.151	−1.903***	.233	0.149
Threatened or used object, knife, or gun	−2.468***	.725	0.085	−2.589***	.736	0.075
Offender force level[a]						
Used verbal force only[b]	—	—	—	—	—	—
Used physical force only	−0.424*	.171	0.654	−0.335[c]	.174	0.716
Threatened or used object, knife, or gun	−0.888*	.390	0.412	−0.740	.398	0.477
Non-White victim	0.048	.203	1.050	0.065	.206	1.067
Female victim	—	—	—	—	—	—
Victim age	−0.005	.008	0.995	−0.009	.008	0.991
Male offender	—	—	—	—	—	—
Non-White offender	−0.004	.007	0.996	−0.003	.007	0.997
Offender age	−0.001	.006	0.999	−0.002	.006	0.998
Offender drug use	−0.074	.164	0.929	−0.097	.165	0.908
Offender stranger	−0.670**	.229	0.512	−0.477*	.240	0.621
Situational variables						
Public location				−0.551*	.236	.576
Bystander present				−0.601**	.211	.548
Nighttime incident				0.008	.009	1.008
-2 log likelihood		899.702			885.668	
Nagelkerke R-square		.208			.229	

Note: As most rapes involve male offenders and female victims, the rape model excludes males as victims and females as offenders. Thus, "female victim" and "male offender" variables are excluded from the rape analysis, because they are already accounted for in the selection of cases.
a. "No resistance or force" is the reference category.
b. There were no cases in which the offender used verbal force only.
c. Marginally significant ($p = .055$).
*$p \le .05$. **$p \le .01$. ***$p \le .001$.

Here, there were six significant predictors. Just as for robbery, victim resistance levels were inversely related to rape completion. Resisting verbally reduced the odds of rape completion by 66% (.341), physical resistance by 85% (.151), and the collapsed category of resisting with an object, knife, or gun reduced the odds by 91% (.085). This also supports the research hypothesis. Interestingly, offender force level was also inversely related to rape completion, decreasing the odds by 35% (.654) for physical force and 59% (.412) when an object, knife, or gun was used. Finally,

stranger offenders had lower odds of completing a rape, with a decrease of 49% (.512).

With the inclusion of the situational variables in Model 2 of Table 3, four of the previous victim–offender findings remained significant. As before, all levels of victim resistance were inversely related to rape completion with odds of .352 for verbal resistance, .149 for physical, and .075 for resistance with an object, knife, or gun. Offenders using physical force was marginally significant ($p = .055$), with the same direction as in Model 1 decreasing the odds of completion 28% (.716). The "offender stranger" variable was inversely related to rape completion, decreasing the odds of completion by 38% (.621), just as in Model 1. Of the situational variables, public location and the presence of a bystander were significantly related. Again, consistent with the hypothesis of a rape occurring in a public setting, the odds of completion were reduced by 42% (.576). When a bystander was present, the odds were reduced 45% (.548). The Nagelkerke R-square was .208 in Model 1, which rose slightly to .229 in Model 2.

Given the aggregation of several years of data used in the present analyses, it is possible that changes in victimization rates over time influenced robbery and rape completion and victim injury. In separate analyses, we estimated all of the presented regression models with a dummy code for each year included in the aggregate analysis (e.g., 1992 to 2004). None of the year dummies were significant predictors, and the significant predictors reported above did not change.

Although not relevant to the theoretical framework presented, we also estimated a similar series of variables for predicting victim injury found in Table 4. We did this, because much of the victim resistance debate centers not only on whether and what type of victim resistance is effective but also how resistance affects the level of injury that the victim is likely to sustain. In other words, does victim resistance lead to greater injury for the victim? Of the 975 victim injury cases, 503 were during a robbery and 472 were during a rape. Of robbery injury cases, 92 (18%) occurred during or after the victim resisted. Of rape injury cases, 98 (21%) occurred during or after the victim resisted. Table 4 presents the coefficients for all of the prior used variables in predicting whether injury would occur either during or after the victim dispensed the resistance. Only one predictor was significant for the robbery model. Holding all else constant, being a non-White victim increased the odds of sustaining an injury during or after resisting, an increase in the odds of 67% (1.669).

Conversely, none of the predictors were significant for determining injury during or after resistance in the rape model. This could be due to the few

Table 4
Binary Logistic Regression Coefficients for Victim Injury Occurring During or After Resisting

Variable	Robbery			Rape[a]		
	B	*SE*	Odds	*B*	*SE*	Odds
Victim–offender variables						
Victim resistance/force level[b]						
Resisted verbally only	.072	.514	1.075	.340	0.543	1.405
Used physical resistance/force only	−.483	.444	0.617	.530	0.513	1.699
Threatened or used object, knife, or gun	−.772	.886	0.462	−.403	1.178	0.669
Offender force level[b]						
Used verbal force only[c]	—	—	—	—	—	—
Used physical force only	−.067	.819	0.935	.185	0.245	1.204
Threatened or used object, knife, or gun	.147	.849	1.158	−.134	0.667	0.874
Non-White victim	.512*	.257	1.669	.004	0.285	1.004
Female victim	.334	.272	1.396	—	—	—
Victim age	.003	.009	1.003	−.005	0.011	0.995
Male offender	−.044	.202	0.957	—	—	—
Non-White offender	−.004	.011	0.996	.000	0.009	1.000
Offender age	−.011	.011	0.989	.013	0.007	1.013
Offender drug use	.033	.256	1.033	−.071	0.233	0.932
Offender stranger	.022	.304	1.023	.235	0.350	1.265
Situational variables						
Public location	.351	.280	1.421	−.303	0.375	0.739
Bystander present	.004	.241	1.004	.049	0.299	1.050
Nighttime incident	−.020	.036	0.981	.001	0.012	1.001
N		503			472	
-2 log likelihood		462.986			473.059	
Nagelkerke *R*-square		.050			.030	

a. As most rapes involve male offenders and female victims, the rape model excludes males as victims and females as offenders. Thus, "female victim" and "male offender" variables are excluded from the rape analysis, because they are already accounted for in the selection of cases.

b. "No resistance or force" is the reference category.

c. There were no cases in which the offender used verbal force only.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

cases where injury was sustained by the victim during these times, although this finding is generally consistent with others that found little relationship between victim resistive actions and victim injury (Kleck & Tark, 2004; Tark & Kleck, 2004; Thompson, Simon, Saltzman, & Mercy, 1999. However, see Marchbanks et al., 1990; Ruback & Ivie, 1988; Wolfgang, 1982).

Discussion

This study examined three propositions of opportunity theory in predicting the effects of victim resistance on crime incident outcomes. All of the propositions were supported in some manner by the findings. First, the level of victim resistance had the predicted effect on crime completion and was evidenced consistently in the multiple models for both robbery and rape. This is understandable under opportunity theory, because the greater victims' resistance, the more effort is required for offenders to complete the crime. If the effort increases to a high enough level, it offsets the anticipated reward, making the crime no longer desirable for the offender. From the routine activities perspective, the target becomes no longer suitable. Increased victim resistance also serves to increase the risk for offenders. This is so, because more time is needed to carry out the crime when resistance rather than compliance is encountered. In addition, victim resistance also serves to alert others of the crime, thereby increasing the risk of detection and apprehension for the offender. This is particularly salient when the incident takes place in an uncontrolled environment (such as a public place) or where there is the presence of a bystander.

Second, for both robbery and rape, those incidents occurring in public locations had lower odds of being successful. Public places present greater risks for offenders than private settings do. By their very definition, public places are locations where everyone is free to visit or occupy. For offenders, the open possibility of someone observing the crime taking place inherently makes the commission of that crime more risky. That risk is amplified when victim resistance is encountered by offenders in a public location. Private locations are more controlled and offenders are not as visible to others. Thus, they pose less risk. The presence of a bystander was also significant for reducing the odds of both robbery and rape completion. Thus, from the perspective of opportunity theory, bystanders pose an increased risk for offenders, because they may intervene in the event or increase the chances that the offender will be identified and apprehended. Noted previously, the research on the impact of bystanders on crime is unsettled. Here, the assumption was that bystanders served as guardians rather than co-offenders, and the findings seem to suggest that more times than not, this is the case, at least for self-reported robberies and rapes.

The findings here hold implications for both theory and safe practice. For theory, they affirm the utility of the opportunity explanation for crime and the SCP framework in a way that has not been done before. That is, it examined the usefulness of the victims' actions during crime incidents as a

way to alter the opportunity for the crime to be completed. Most applications of opportunity theory have paid little attention to victims' behavior as a vehicle for reducing the attractiveness of crime, particularly during the crime event.

For safe practice, the entire body of research on victim resistance indicates that victim behavior can shape the progression of crime incidents, not only by taking protective measures to avoid the onset of crime events but also during the process once a crime incident has begun. Furthermore, the emerging position is that victim protective actions do not increase the risk of injury for victims once the time order of when the injury occurred is taken into account (Kleck & Tark, 2004; Tark & Kleck, 2004; Ullman, 2007). Our findings seem to suggest the same. Although the variety of potential situations are too numerous to extend these findings unconditionally, the results do indicate that in the cases examined, victim resistance was beneficial in terms of crime outcomes. Future applications of situational-based prevention measures also stand to increase their utility by exploring other ways to prevent the occurrence of crime and to reduce the consequences when a crime incident does occur.

Although these findings provide insight into why and how victim resistance can prevent the completion of crime, it is important to acknowledge some of the basic limitations of the study. First, the analysis relied on data from the NCVS, which as a self-report instrument omits those victims who died. Thus, an entire class of perhaps the most unsuccessful victims is not captured. It is possible that in those cases, resistant victim behaviors resulted in their death or the victims behaved differently compared to those who survived. Moreover, because the NCVS is survey data, it only collects information on those willing to talk about their victimization. It could be, then, that those victims who were less successful in their actions or who did not resist were less likely to provide information resulting in a systematic censorship in the data.

Second, the analysis of situational variables was not exhaustive, having been constrained by the available variables found in the data. It is likely that other such variables play a role in characterizing crime incident outcomes. For instance, it would be useful to examine victim resistance outcomes while taking into account lighting conditions, the presence of CCTV cameras, and the level of natural surveillance at crime incident sites. Other variables that would be important to examine include alcohol use by victims and rapist type. Alcohol use by the victim appears to put women at greater risk of suffering a completed rape, although the mechanism through which this occurs is not clear (Ullman, 2007). In addition, Ullman posits that it is

possible that the effectiveness of women's self-protective behaviors during sexual assaults may vary depending on the typology of rapist. It is perhaps partly because we could not include all variables in our analysis that the pseudo *R*-squares were somewhat low.

Third, to more precisely examine the theoretical propositions, the analyses excluded multiple offender cases. It has been recognized that these incidents may be characteristically different than incidents involving single offenders. In the case of gang rapes, there is some indication that they tend to be more violent (Ullman, 2002), and it may also be that victim resistance in such instances leads to outcomes different than those found here. This should be examined in future studies. Fourth, the low number of cases available for study in the victim injury models may have produced type II errors, thus concealing significant predictors when they actually exist. Because of this, those findings should be taken with caution. Finally, the study only examined incidents of robbery and rape. The veracity of opportunity theory in explaining victim resistance behavior effects should be further tested with other crime types.

Despite these caveats, this study represents one of the only theoretically driven examinations of victim resistance behavior to date. It also links together two bodies of research (SCP and victim behavior) that have mostly existed exclusive of one another. Although further applications are needed, these findings suggest that opportunity theory, notably the theoretical basis of SCP, provides a viable framework for explaining the affect of VSPB on crime incident outcomes.

Appendix
Definitions and Coding for Variables Used in the Analyses

Variable	Coding and Definition
Dependent variables	
Robbery completed	1 = *Robbery was completed*
Rape completed	1 = *Rape was completed*
Victim injury	1 = *Victim sustained injury during or after resisting*
Victim–offender variables	
Victim level of resistance/force	Ordinal classification ranging from 0 to 4 (0 = *victim*
No resistance/force	*did not resist*; 1 = *victim resisted verbally only*; 2 =
Verbal only	*victim used physical resistance/force only*; 3 = *victim*
Physical, no weapon	*threatened or used object or knife*; 4 = *victim*
Weapon/knife	*threatened or used a gun*)
Gun	

(continued)

Appendix (continued)

Offender level of force	Ordinal classification ranging from 0 to 4 (0 =
No force	*offender used no force*; 1 = *offender used verbal*
Verbal only	*force only*; 2 = *offender used physical force only*; 3 =
Physical, no weapon	*offender threatened or used object or knife*; 4 =
Weapon/knife	*offender threatened or used a gun*)
Gun	
Non-White victim	1 = *Non-White victim*
Female victim	1 = *Victim was female*
Victim age	Age of victim
Male offender	1 = *Offender was male*
Non-White offender	1 = *Non-White offender*
Offender age	Age range of offender
< 12	1 = *under 12*
12 to 14	2 = *12 to 14*
15 to 17	3 = *15 to 17*
18 to 20	4 = *18 to 20*
21 to 29	5 = *21 to 29*
> 30	6 = *30 or older*
Offender stranger	1 = *Offender was a stranger*
Offender intimate	1 = *Offender was an intimate*
Offender drug/alcohol use	1 = *Offender under influence of drugs/alcohol*
Situational variables	
Public location	1 = *Public location*
Bystander present	1 = *Bystander present*
Nighttime incident	1 = *Occurred between 6 p.m. and 6 a.m.*

Notes

1. Most studies of the effectiveness of self-protective behaviors examine incidents by strangers or have such small samples that no comparisons can be made between stranger and nonstranger incidents (Ruback & Ivie, 1988).

2. The specific forms of resistance examined were as follows: (a) victim used a gun; (b) victim used a knife; (c) victim used another weapon; (d) victim used weaponless physical force; (e) victim threatened, argued, or reasoned with the offender; (f) victim tried to get help, attract attention, or scare offender away; (g) victim resisted without force; and (h) victim used some other form of self-protection. Each of these eight variables was a dummy variable coded as 1 if the particular type of resistance was used and 0 if the particular type of resistance was not used.

3. Specifically, they analyzed five crime types: sexual assaults, robberies, assaults without sexual elements, personal contact larcenies, and confrontational burglaries.

4. The protective behaviors examined in their analysis included the following: attack with gun; attack with nongun weapon; attack without weapon; threat with nongun weapon; threat without weapon; struggled; yelled or turned on lights; stalled or pretended to cooperate; ran away or hid; called police or guard; tried to attract attention; screamed from pain or fear; and other protective measures.

5. The use of these behaviorally specific questions is important, as research by Applegate, Cullen, Turner, and Sundt (1996) suggests that the use of specific questions tends to elicit more accurate responses than the use of global questions.

6. Although turning on the lights could be considered a form of physical self-protective behavior, it was included in the verbal self-protective behavior category, because it was included with yelling in the data (variable #4152) and thus unable to be divided.

7. Cooperation with the offender was considered a type of self-protective behavior, because for victims to be asked if they cooperated with the offender, victims first had to respond "yes" to one of the following questions: "Did you do anything with the idea of protecting yourself or your property while the incident was going on?" or "Was there anything you did or tried to do about the incident while it was going on?" Thus, victims who answered that they had cooperated with the offender apparently considered cooperation a means of protecting themselves.

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