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RESISTING CRIME: THE EFFECTS OF VICTIM ACTION ON THE OUTCOMES OF CRIMES

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This study assessed the impact of sixteen types of victim self protection (SP) actions on three types of outcomes of criminal incidents: first, whether the incident resulted in property loss, second, whether it resulted in injury to the victim, and, third, whether it resulted in serious injury. Data on 27,595 personal contact crime incidents recorded in the National Crime Victimization Survey for the 1992 to 2001 decade were used to estimate multivariate models of crime outcomes with logistic regression. Results indicated that self-protection in general, both forceful and nonforceful, reduced the likelihood of property loss and injury, compared to nonresistance. A variety of mostly forceful tactics, including resistance with a gun, appeared to have the strongest effects in reducing the risk of injury, though some of the findings were unstable due to the small numbers of sample cases. The appearance, in past research, of resistance contributing to injury was found to be largely attributable to confusion concerning the sequence of SP actions and injury. In crimes where both occurred, injury followed SP in only 10 percent of the incidents. Combined with the fact that injuries following resistance are almost always relatively minor, victim resistance appears to be generally a wise course of action.

Why do crime incidents turn out more favorably for some victims than for others? Why do only some criminal attempts result in injury or property loss to the victim? Crime victims and prospective victims have a vital interest in knowing the best action to take should they find themselves the target of a criminal attempt. Scholars have also become interested in these issues in the past few decades, though primarily in

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relation to sexual assaults. Forceful physical resistance by victims, especially armed resistance, is particularly controversial among scholars, perhaps because to concede any beneficial effects of forceful resistance might seem to promote private violence. In contrast, scholars studying rape, writing primarily from a feminist perspective, have been more willing to see value in women resisting male aggressors, perhaps because it has different ideological implications than other forms of forceful victim resistance.

Unfortunately, research on these questions is generally seriously flawed and has yielded results that appear highly inconsistent. We sought to correct some of the most serious flaws and use information on the largest available sample of crime incidents to assess the impact of a very diverse set of defensive actions on the most important outcomes of crimes.

THEORY

There is little formal theory in criminology aimed at explaining the outcomes of crime incidents for victims. Nevertheless, the impact of victim self-protection on the outcome of criminal incidents can be indirectly understood from several theoretical perspectives. First, social learning theory asserts that criminal behavior is learned primarily either in social interactions in which criminal (or noncriminal) behavior is or is not reinforced, or by observing the consequences of criminal behavior (or noncriminal behavior) among others (Akers, 1985). Criminals are less likely to repeat criminal behavior to the extent that it resulted in punishment or failed to yield rewards, that is, was not reinforced. From a social learning perspective, both (a) aversive stimuli in the form of physical pain inflicted by resisting victims, fear of pain or injury being inflicted, or legal punishment resulting from victim action, and (b) the absence of reward, such as the failure to gain desired property, sexual gratification or vengeance, would tend to discourage criminal behavior. Whether criminals directly experienced negative consequences associated with victim resistance, or vicariously experienced those suffered by other offenders, the more frequent these negative consequences were, the less likely the offenders should be to maintain criminal behavior. If victims kill or injure criminals, frighten them or cause them to be arrested, these negative consequences could influence the future criminal behavior of offenders who considered the possibility of experiencing such consequences themselves. The present analysis of National Crime Victimization Survey (NCVS) data for 1992 to 2001 indicates that 68 percent of victims of personal contact crimes took some defensive actions, and 32 percent took forceful actions, ranging from physically struggling with offenders to shooting at them. For violent crimes such as assault,

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robbery and rape, private sanctions in the form of forceful victim resistance are considerably more likely than official legal punishments.

Some forms of victim self-defense are also quite severe and could therefore strongly discourage (continued) aggression against victims. While most victim response to crimes does not involve force, victims nevertheless use forceful defensive actions frequently. At the most severe end of the spectrum, there were between 1,400 and 3,200 justifiable or excusable homicides committed by crime victims in 1990 (Kleck, 1997). At the less severe end, more than 1.6 million crime victims used forceful but nonlethal self-protective measures (attacking or threatening offenders with physical violence) in personal crimes in 1995 (U.S. Bureau of Justice Statistics, 2000). It therefore seems reasonable to take victim defensive actions seriously as potential determinants of criminal behavior.

The routine activities approach (for example, Cohen and Felson, 1979; Hindelang, Gottfredson and Garofalo, 1978) asserts that crimes occur when motivated offenders intersect in time and space with suitable targets in the absence of effective guardians. This approach implies avoidance behaviors as a tactic for reducing risks of victimization, but says little directly about victim actions taken while a crime incident is going on. The concept of guardianship, however, implies that victim behaviors might not only help avoid an assault in the first place, but also reduce the offender's prospects for success. Thus, burglars searching for suitable targets will avoid occupied homes partly because of the risk, for example, of the occupants calling the police or acting in self-defense.

All crime victims are guardians of their own safety, and to the extent that their actions reduce the probability or seriousness of injury or property loss, their guardianship is effective. Indeed, victims certainly act as direct guardians of their own safety far more often than police officers, security guards, or other professionals do, given that most crimes entail some kind of victim self-protection, and only a very few involve professional intervention (Federal Bureau of Investigation, 2002; Walker, 1998). Thus, the routine activities perspective would predict that crime events, or at least completed crimes, should occur less often when guardianship of individual personal crime targets, in the form of victim self-protective actions, is more effective.

These theoretical traditions, however, offer little guidance as to which victim actions will affect which crime outcomes under what circumstances. Some weak generalizations have emerged inductively from empirical work, as discussed shortly, but nothing resembling propositions deductively derived from broader theoretical notions has been developed. Perhaps this is not surprising given how little theoretical attention has been directed at explaining variation in the outcomes of crime incidents, in contrast to lasting differences in offending behavior across individuals.

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Nevertheless, one might predict that victim actions that threaten the most harm to the offender would most strongly deter continued attempts. Based on this speculation, one could specifically hypothesize that because gun use would be the potentially most "severe" victim action, it would have the strongest inhibiting effects, the use of lesser weapons would have the next strongest inhibiting effects on offenders, use of unarmed force the next strongest, and use of nonforceful methods the weakest.

PRIOR RESEARCH

Some criminologists have concluded that victim resistance to crime, especially forceful resistance, is useless and even dangerous because it provokes offenders to attack (for example, Bachman and Carmody, 1994; Bachman, Saltzman, Thompson and Carmody, 2002; Cohen, 1984; Griffin and Griffin, 1983; Marchbanks, Liu and Mercy, 1990; Zoucha-Jensen and Coyne, 1993). Others have concluded that resistance is generally beneficial, despite the fact that methodological flaws in research have often biased findings against results indicating desirable effects of resistance (Kleck, 1988; Kleck and Delone, 1993; Kleck and Kates, 2001; Kleck and Sayles, 1990; Southwick, 1996; Thompson et al., 1999; Ullman, 1998; Ullman and Knight, 1992, 1993; Ziegenhagen and Brosnan, 1985). Some of the variation in findings may be due to differences in the types of crimes studied. For example, most studies have been confined to sexual assaults (see Ullman, 1997 for a review of twenty-eight pre-1995 rape resistance studies). Others have examined robberies (Block, 1977; Block and Skogan, 1986; Conklin, 1972; Cook, 1986; Cook and Nagin, 1979; Hindelang, 1976; King, 1987; Kleck, 1988; Kleck and Delone, 1993; Kleck and Kates, 2001; McDonald, 1975; Southwick, 1996; Weiner, 1987; Ziegenhagen and Brosnan, 1985), burglary (Cook, 1991), or assault (Bachman et al., 2002; Fritzon and Ridgway, 2001; Kleck, 1991; Kleck and Kates, 2001; Lizotte, 1986; Thompson et al., 1999). Findings across studies could differ if victim resistance had significantly different effects in different types of crimes (Bachman et al., 2002).

More serious is that many studies are based on small nonprobability samples of crimes, typically local convenience samples of incidents known to authorities, such as those reported to a single local law enforcement agency (Amir, 1971; Conklin, 1972; Fritzon and Ridgeway, 2001; McDonald, 1975; Prentky, Burgess and Carter, 1986; Weiner, 1987), those involving college students at a single campus (Levine-MacCombie and Koss, 1986), victims who sought help from particular rape crisis centers (Cohen, 1984; Ruback and Ivie, 1988), offenders incarcerated in a single institution or handled by a single treatment facility (Ullman and Knight,

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1992, 1993), or self-selected volunteer subjects (Bart, 1981; Bart and O'Brien, 1984).

There are biases in convenience samples of crimes that come to the attention of the authorities, biases that bear directly on the apparent effectiveness of victim defensive actions. Most critical, victims tend not to report to the police less serious crimes and those in which they suffered no injuries or property loss (U.S. Bureau of Justice Statistics, 1985). Thus, samples of crimes known to the authorities necessarily tend to disproportionately exclude cases in which victim actions were effective in preventing injury or property loss. As Hindelang and Gottfredson (1976) pointed out decades ago, at the very dawn of victim resistance research, this systematic censoring of crimes thus yields samples of crimes that contribute to underestimating the effectiveness of self-protection. Likewise, incidents reported to victim crisis centers or treatment facilities are likely to suffer from similar censoring of crimes with better outcomes for victims, because the consequences of such crimes are likely to be less traumatic for victims, who would therefore be less in need of treatment or counseling.

Most important, apparent conflicts in findings of studies may be attributable to the failure of most researchers to establish the sequence of protective actions and injury. As Sarah Ullman (1998) noted, where one does not have information on the sequence of resistance and injury, one cannot draw conclusions about whether resistance provoked injury, because a positive association may be primarily due to crimes in which injury provoked resistance from previously nonresisting victims. Nearly all researchers who have found positive associations between injury and self-protection actions, and concluded that resistance provoked offenders into attacking victims, failed to establish whether self-protective (SP) actions preceded the offender's inflicting of injury (for example, Bachman and Carmody, 1994; Block, 1977; Block and Skogan, 1986; Griffin and Griffin, 1981; Marchbanks, Lui and Mercy, 1990; Ruback and Ivie 1988; Zoucha-Jensen and Coyne, 1993). In these studies, crimes in which a victim was injured *before* doing something to resist were effectively treated as cases in which resistance provoked injury. In contrast, the few studies that established the injury-SP sequence have generally found that all or most types of resistance either reduce the risk of subsequent injury or have no net effect one way or the other (Bachman et al., 2002; Kleck and DeLone, 1993; Kleck and Kates, 2001; Quinsey and Upfold, 1985; Thompson et al., 1999; Ullman and Knight, 1992).

Some recent researchers had information on the injury-SP sequence but applied it in ways that biased findings against conclusions that victim actions are beneficial or neutral. The problem lay in how the researchers handled cases in which injury was inflicted first, followed by SP actions.

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Thompson and her colleagues (1999) and Bachman and her associates (2002) both coded such cases as crimes in which the victim took no protective actions. This is inappropriate first because it is inaccurate—the victims did take protective actions. More important, this procedure biases findings against a conclusion that victim actions are effective. These incidents all involved offenders inflicting injury on initially nonresisting victims, who then took some kind of self-protective action, after which the offenders inflicted no further injury. In the National Crime Victimization Survey, victims who were injured, then took protective action, and then were injured again would be coded as taking protective actions both before and after injury (U.S. Bureau of Justice Statistics, 2003a). Although one cannot be sure that it was resistance that caused the offenders in these crimes to stop their assault, such cases clearly support the idea that protective actions do stop offenders from attacking further. These authors' coding procedure effectively portrayed these incidents as crimes in which self-protection did not occur, and thus could not have exerted any beneficial effects, thereby converting cases favorable to the efficacy position to neutral ones, and artificially reducing support for the position that resistance deters further attacks.

Bachman and her colleagues (2002) also used a second strategy to address this problematic set of crimes, but the second procedure had the same biasing effect as the first. Cases in which victims were injured, then resisted and then were not injured any further were omitted from analyses altogether. This procedure biases the sample by censoring out cases that support the efficacy hypothesis. Consistent with this assertion, results from all analyses of these samples were even less supportive of the efficacy position than those in which these cases were included in the sample but miscoded as involving no protective actions.

Another problem in victim resistance research is the use of needlessly limited two- or three-category typologies of resistance actions. Most researchers simply divide victims into those who resisted or did not resist, or distinguish only forceful ("physical," "direct," "combative") resistance from nonforceful (for example, Bachman et al., 2002; Block and Skogan, 1986; Fritzon and Ridgway, 2001; Marchbank et al., 1990; Ullman, 1998). Although the pre-1986 NCVS distinguished eight types of SP actions, and the post-1986 NCVS provides information on sixteen types, even researchers using this rich source of information have lumped different types of victim actions into a few very broad categories. For example, Bachman and her colleagues (see also Bachman and Carmody, 1994) combined the sixteen relatively specific protective measures provided in the NCVS data into just two categories: "physical response" and "nonphysical response." The category of "physical response" included such diverse measures as the victim attacking the offender with a gun,

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threatening the offender with a knife, making unarmed attacks, physically struggling without any weapon, chasing the offender, and running away. Using this typology, they concluded that "the probability of injury was increased for women who physically resisted" offenders (2002:135).

In contrast, Kleck and Delone (1993) separately assessed all eight distinct categories of self-protection coded in the pre-1986 NCVS. They found that some forceful responses appeared to reduce the risk of injury while others did not, and some nonforceful responses appeared to be effective while others, such as attempting to get help, seemed to increase the risk. Different forms of physical resistance can even have effects of opposite sign. Armed physical resistance is associated with lower risks of injury while some forms of unarmed physical resistance are associated with higher risks (Kleck, 1988; Kleck and DeLone, 1993; Kleck and Sayles, 1990; Ziegenhagen and Brosnan, 1985). Something is therefore lost by combining SP categories, because doing so can obscure differences in the effects of specific victim actions.

One final problem with research in this area may never be completely resolved. Victims do not select their responses to offenders randomly, so the choice of protective action may be correlated with characteristics of victims, offenders and crime circumstances that have their own effects on crime outcomes. Some defensive actions may be more common in circumstances already favorable to the victim, in the sense that it was already unlikely that the victim would have been harmed, or it was fairly easy for the victim to avoid harm, even without taking protective action. For example, victims who call the police or go to "get help" during the incident may be able to do so precisely because they were not injured or seriously threatened. In such cases, analysts could mistakenly attribute effectiveness to victims' actions that had little or no impact. On the other hand, victims may be pushed to extreme defensive actions only by extreme circumstances. The more forceful victim responses may be adopted only under the most desperate circumstances, for example, when victims were outnumbered by offenders. In these cases, defensive actions could appear less effective than they really were because the dangerous circumstances associated with the defensive action often caused the victim to be injured.

The standard solution is to measure and statistically control for as many suspected confounders—correlates of protective actions that affect crime outcomes—as possible. But this is difficult if we know little about likely correlates, and is impossible to completely implement if the correlates are not measured, and perhaps cannot be measured. In particular, the intentions and strength of motivation of offenders have never been measured or controlled in any self-protection study (though Cohen [1984] did ask rape victims about their perceptions of offenders' intentions), yet

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these variables might well influence not only crime outcomes but also the victim's choice of defensive strategies.

Reiss and Roth (1993) speculated that victims who use guns are likely to have had more warning time to plan a response than other victims, because the ability to get to a weapon might itself be a product of greater lead time (see also Thompson et al., 1999). The greater time to respond might itself produce better outcomes independent of the gun use. Because no researcher has ever measured lead time, this notion remains an unsupported speculation. On the other hand, empirical evidence indicates that victims who use guns are more likely to be outnumbered and to face offenders with guns (Kleck and Kates, 2001), consistent with the general idea that victims who face more desperate circumstances are more likely to adopt more extreme defensive measures. Regardless, defensive actions are correlated with other variables that could influence crime outcomes, so as many such potentially confounding variables as possible should be controlled.

METHODS

Our goal was to avoid the flaws of past research, and to (a) examine a large national probability sample of crimes, (b) take account of the sequence of victim protective actions and injury in appropriate ways, (c) control for as many confounding correlates of defensive actions as possible, (d) separately assess the full set of sixteen specific victim actions coded in the post-1992 NCVS on crime outcomes, and (e) do so separately for each type of crime in which there was personal contact between the victim and offender.

The sample used was all crime incidents reported in the National Crime Victimization Survey that occurred in the United States from 1992 through 2001 and that involved personal contact between victims and offenders (U.S. Department of Justice, 2003). Only data gathered since 1992 were used because this was when the NCVS began to record the sequence of victim actions and injury. We analyzed five types of crimes: sexual assaults, robberies, assaults (without sexual elements), personal contact larcenies (completed or attempted purse snatchings and pocket pickings), and confrontational burglaries. All but the last were defined according to NCVS Type of Crime (TOC) typology. We wanted to separately assess the effects of protective actions in residential burglaries in which there was some potential for direct confrontation between victim and offender, but the TOC for many of these would be some kind of robbery. Therefore we defined a confrontational burglary as a crime incident in which there was (a) unlawful entry by the offender into the victim's home and (b) the victim saw the offender while the crime was going on. Crimes with these

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elements but also those of sexual assaults were left as sexual assaults because there were already so few cases of this crime type.

The NCVS is an ongoing national household survey conducted by the U.S. Census Bureau that questions everyone 12 years old or older in a large national probability sample of housing units. The NCVS uses a rotating panel design in which stratified multistage samples of housing units are randomly selected, and residents of the sampled units are interviewed every 6 months over a 42-month period about their victimization experiences during the 6 months preceding each interview. All respondents are identified to interviewers, that is, the interviews are not anonymous. Most are conducted by telephone but some are face-to-face. The total unweighted sample size used in this study was 27,595 personal contact crime incidents.

Incidents were weighted using a modified version of the NCVS *Incident Weight*, which reflects the differing probabilities of selection into the sample of different cases. If used unmodified, this weight inflates the apparent sample size up to estimated population totals, fooling statistical software into believing that there were millions of crimes in the sample, and distorting significance tests such that even very weak associations appear to be highly significant. To avoid this, in each sample analyzed, the mean value of the original *Incident Weight* variable was computed. A new weight variable was then created that, for a given crime incident, equaled that case's *Incident Weight* divided by the mean of the *Incident Weight* in the sample being analyzed (for example, robbery incidents). Since the average value of this new weight equals one, apparent sample sizes are exactly equal to the actual unweighted sample size, and significance tests are not distorted.

Because weapon possession, especially in public places, is often unlawful, many cases of armed resistance are probably not reported to the NCVS because it would entail confessing to a crime. While there is no evidence bearing directly on the validity of responses to questions about defensive use of guns or gun carrying, there is considerable evidence that survey respondents often conceal gun ownership. First, surveys asking how many guns people own yield far lower estimates of the total civilian gun stock than do data on the numbers of guns manufactured, imported and exported (Kleck, 1991). Second, when Illinois adults who held required gun owner licenses were asked in interviews whether they owned guns, nearly a tenth claimed that neither they nor anyone in their household owned or had owned a gun in the past 5 years (Bordua, Lizotte and Kleck, 1979). Third, a number of researchers have noted discrepancies in married couple households in survey responses to household gun ownership questions, indicating that wives substantially under-report their husbands' gun ownership (Buckner, 1995; Kleck, 1997; Ludwig, Cook and Smith,

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1998). Even among the presumably highly "legitimate" gun owners who registered their guns with the authorities, 12.7 percent denied having any guns (Rafferty, Thrush, Smith and McGee, 1995). Because reporting defensive use of a gun necessarily entails acknowledging possession, this documented reluctance to admit gun ownership is likely to lead to an underreporting of gun use.

Further, we cannot be sure that the relatively few incidents reported in the NCVS are representative of all cases of armed resistance. Those defensive uses of weapons reported by victims are probably more "legitimate" than those not reported, but it is unclear whether they would be more effective. On the one hand, victims might be embarrassed by actions that either failed to prevent harm or made things worse. On the other, victims are known to be less likely to report incidents without injury or property loss, which happens to be the set of incidents within which successful defensive actions would be found.

Table 1 lists the variables included in the analysis and their means and standard deviations. Most variables are binary, indicating the presence or absence of an attribute. The dependent variables measure whether the victim suffered (1) any injury during the incident, regardless of when it occurred (ANYINJUR), (2) any injury after taking some self-protective action (POSTINJU), (3) a serious injury after taking self-protective actions (POSEINU), or (4) property loss (LOSTHIN).[1] Because our dependent variables were all binary, we used logistic regression to estimate equations. In addition to doing so for the full set of all personal contact crime incidents in the sample, we estimated separately for the personal contact crime types to determine whether the effects of protective actions differ by crime type. Only robbery, burglary and personal contact larceny were analyzed with respect to property loss. We did not address rape completion as an outcome of sexual assaults because that topic has already been thoroughly addressed in a large body of research that has consistently found that rape completion is less likely with almost any form of resistance (see reviews in Ullman, 1997; Bachman et al., 2002).

Obviously, protective actions taken after the victim was injured could not have affected whether the injury was inflicted. Likewise, because humans are not capable of instantaneous reaction, attacks that began

1. The NCVS also has questions concerning victims' perceptions of the impact of their self-protective actions. This is a separate topic worthy of analysis in its own right but is not addressed here. The published NCVS data indicate that about two-thirds of victims think their actions helped the situation, but fewer than one-tenth think that their actions, on net, hurt the situation (for example, Table 72 in U.S. Bureau of Justice Statistics, 2003b).

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simultaneously with victim actions could not have been provoked by those actions. In some incidents, victims described the two events as occurring at the same time. While the beginnings of these actions probably were not literally simultaneous, the victims in these incidents presumably were unable to say whether their protective actions came before or after injury. We treated these incidents as missing on the post-SP injury variables because it was impossible to determine whether injury actually occurred slightly before or slightly after the protective actions. We also performed auxiliary analyses in which these cases were arbitrarily coded as post-SP injury or pre-SP injury incidents.

The NCVS does not address the possibility of complex sequences in which multiple different types of defensive actions are taken and injury occurs after one type of victim action but before another. Rather, all victims who were injured and used protective actions are simply coded by interviewers as to whether protective actions (in general) were taken before, during or after suffering injury. Victims can be coded for as many of these sequences as were appropriate, and therefore might be coded as having suffered injury before, during, and after defensive action. For purposes of coding post-protection injury, we treated victims who were injured both before and after victim actions as having suffered post-protection injury, thereby favoring the hypothesis that resistance increases the victim's risk of injury.

The types of injuries recorded in the NCVS are: (1) raped, (2) attempted rape, (3) sexual assault other than rape or attempted rape, (4) knife or stab wounds, (5) gun shot, bullet wounds, (6) broken bones or teeth knocked out, (7) internal injuries, (8) knocked unconscious, (9) bruises, black eyes, cuts, scratches, swelling, chipped teeth and (10) other injuries. The exact cut-off between serious and minor injury is necessarily subjective and somewhat arbitrary, but we used the fairly conventional one in research that uses NCVS data: the last two categories were treated as less serious injuries, the rest as more serious. This coding scheme thus slants the distribution of injury seriousness in favor of the "serious" category because, among specific categories of injury, only the least serious (bruises, cuts and the like) is coded as less than serious.

The independent variables of primary interest were sixteen binary variables denoting whether a given type of protective action was taken by the victim (2=action was taken, 1=action was not taken). Victims could be coded as having used as many or as few of these strategies as they reported, and those who did nothing to resist would simply be coded 1 on all 16 protection variables. Because there was no variable included in the models that explicitly denoted that victims did nothing to protect themselves, "no self-protection" is the omitted protection category in the

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Table 1. Variables in the Analysis*

Variable	*Description*	*Mean*	*SD*
Dependent Variables			
LOSTHING	Property was taken without permission	1.092	0.288
ANYINJUR	V was injured	1.240	0.427
POSTINJU	V was injured after responding to offender	1.035	0.183
POSEINJU	V was seriously injured after responding to offender	1.008	0.090
ANYINJU2	V was injured excluding (attempted) rape	1.228	0.420
POSTINJ2	V was injured after responding to O	1.032	0.176
POSEINJ2	V was seriously injured after responding to O	1.000	0.000
Independent Variables			
Victim's Self-Protection			
Used Physical Force toward Offender			
GUNATACK	V attacked O with gun; fired gun	1.002	0.040
GUNTHRET	V threatened O with gun	1.007	0.085
NOGUNATK	V attacked O with other weapons (knife, etc.)	1.008	0.091
NOGUNTHR	V threatened O with other weapon (knife, etc.)	1.008	0.091
NOWEPATK	V attacked O without weapon (hit, kicked, etc.)	1.096	0.295
NOWEPTHR	V threatened without weapon	1.020	1.386
Resisted or Captured Offender			
STRUGGLE	V struggled, ducked, blocked blows, held onto property	1.181	0.385
CHASHELD	V chased, tried to catch or hold O	1.019	0.136
Scared or Warned off Offender			
SCAREOFF	V yelled at O, turned on lights, threatened to call police	1.090	0.287
Persuaded or Appeased Offender			
COPRSTAL	V cooperated, or pretended to (stalled, did what they asked)	1.019	0.138
ARGUE	V argued, reasoned, pleaded, bargained, etc.	1.098	0.297
Escaped or Got Away			
RANHIDE	V ran or drove away, or tried; hid, locked door	1.138	0.345
Got Help or Gave Alarm			
CALLPOL	V called police or guard	1.072	0.259
GETHELP	V tried to attract attention or help, warn others (cried out for help, called children inside)	1.020	0.142
Reacted to Pain or Emotion			
SCREAM	V screamed from pain or fear	1.021	0.142
Other			
OTHERS	V took other action	1.150	0.357
Power Difference between V and O			
ADVSEXOF	Male O and female V	1.326	0.468
ADVAGEOF	O age 15-29 and V either under 15 or 30 or older	1.210	0.407
ADVNUM	Number of O – number of V	-0.128	2.058
Offender Weapons and Attack			
OHADGUN	O had gun	1.082	0.274
OHADKNIF	O had knife	1.057	0.231
OHADSHAP	O had sharp object	1.010	0.101
GOTINHOM	O (attempted to) entered house/apartment	1.015	0.122
GOTINCAR	O (attempted to) entered car	1.000	0.156

* For binary variables, 1= Attribute is not present, 2=Attribute is present

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Table 1. Variables in the Analysis (Continued)

Variable	*Description*	*Mean*	*SD*
Victim characteristics			
HADCHILD	Child in the victim's household	1.394	0.489
HOUSOWN	V owned the house	1.507	0.500
EMPLOYED	V was employed	1.644	0.479
OLD65	V was 65 or older	1.021	0.142
MARRIED	V was married	1.254	0.435
EDUCATIN	V education	15.159	6.538
ARMFORCE	V was Armed force	1.006	0.080
BLACK	V was black	1.146	0.353
ASIAN	V was Asian	1.018	0.134
HISPANIC	V was Hispanic origin	1.099	0.299
NUMVICEX	Number of victimization in last six months	2.640	12.070
NUMHOUSE	Number of housing units in structure	1.353	0.478
Offender characteristics			
OFDGANG	1+ O* was gang member	1.074	0.262
OFDSUBST	1+ O was on substance (alcohol or drugs)	1.299	0.458
OFDFAMIL	1+ O was V' family member	1.048	0.213
OSEXINTI	1+ O was V's sexual intimate	1.116	0.320
OSUPERIOR	1+ O was V's parents or supervisor	1.008	0.088
OFDACQNT	1+ O was V's acquaintance (no family, work acquaint.)	1.206	0.404
OWORKACQ	1+ O was V's work acquaintance	1.052	0.222
OFDBLACK	1+ O was Black	1.282	0.450
OFDWHITE	1+ O was White	1.611	0.487
	* One or more offenders		
Incident circumstances			
RURAL	Incident occurred in rural	1.159	0.365
URBAN	Incident occurred in urban	1.374	0.484
ATHOME	Incident occurred at home	1.176	0.380
NEARHOME	Incident occurred near home	1.202	0.402
SECUPUB	Incident occurred in public place which may have security	1.269	0.443
FAMIPRES	Incident occurred with family member present	1.202	0.402
OTHRPRES	Incident occurred with others present (no family)	1.482	0.500
Other variables eliminated in logistic analysis			
ANYSD16	V respond responded in any of 16 types of action	1.707	0.455
TOTALSD	Total number of victim response	0.950	0.857
OFDWEPON	O had weapon	1.234	0.423
OFDATCK	O attacked V	1.541	0.498
OFDTHRET	O threatened V	1.487	0.499
OFDGUNAT	O attacked with gun	1.007	0.084
OFDKIFAT	O attacked with knife	1.023	0.150
HOMINCOM	Income of the household	8.406	4.203
YOUG1529	V was 15 to 29 yr old	1.461	0.498
MALE	V was male	1.554	0.497
NUMOFD	Number of O	1.531	2.020
MALEOFDC	O was male	1.839	0.368
YONGOFDC	O was 15 to 29 yr old	1.549	0.498
NIGHT	Incident occurred at night	1.451	0.498
AFTERNON	Incident occurred in the afternoon	1.200	0.400
SOUTH	Incident occurred in SOUTH	1.244	0.430
WEST	Incident occurred in WEST	1.190	0.393

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ANYINJUR and LOSTHING analyses, and thus serves as a point of comparison for all specific protective actions. Thus the coefficient of each protection variable reflects how much more or less likely a given outcome was for victims who took that action, compared to victims who did nothing to resist, other things being equal.

NCVS respondents reporting victimization are asked: "Did you do anything with the idea of protecting YOURSELF or your PROPERTY while the incident was going on?" (U.S. Bureau of Justice Statistics, 2003a). It should be noted that some "self-protection" actions are protective of property only, not the victim's bodily safety. For example, it is unlikely that victims would chase an offender to prevent injury to themselves. The purpose of such an action is more likely to recover the victim's property, inflict punishment on the offender or hold him for the police than to protect anything or anyone. Victims can also be coded as either cooperating or pretending to cooperate with the offender. Genuine cooperation might seem to be indistinguishable from nonresistance, but because cooperating and pretending to do so are grouped in the NCVS, victims in this category must be coded as having taken some kind of protective action, since some of them "stalled" to protect themselves.

Another problematic category of "self-protective action" coded in the NCVS is "screamed from pain or fear" (this is the verbatim description that appears in the NCVS interview schedule—U.S. Bureau of Justice Statistics, 2003a). Responses coded as fitting this category of victim response were provided in the context of the introductory statement asking about protection, thus these behaviors are treated as self-protection in the NCVS. But they could also be viewed as virtually involuntary responses to threat or injury itself, rather than actions intended to prevent further injury or property loss. Ambiguity arises because after the initial protection question is asked, those who respond "no" are nevertheless asked the more ambiguous follow-up question: "was there anything you did or tried to do about the incident while it was going on?" Thus some victims who described what they did during the incident, after they answered "no" to the first question, then "yes" to the second one, were not necessarily claiming that the action was taken for protective reasons. Nevertheless, because screaming from pain might well influence whether the perpetrator inflicts further injury, and screaming from fear might influence whether any injury is inflicted in the first place, we included this action in the models. Readers should, however, note that any positive associations between this victim behavior and injury may merely reflect the fact that injury often causes victims to scream from pain, and threat of an attack could make them scream from fear. Even with information on SP-injury sequence, one must still consider the possibility that victims may scream from fear just before an injury is inflicted. Such a case could

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appear to support the view that screaming provokes offender attack, even if it actually has no effect.

It is not practical to assess the impact of combinations of specific protective measures. There are 57,527 possible combinations of sixteen different measures. Testing just 1 percent of these combinations would inevitably yield many misleadingly "significant" findings due to the huge number of hypothesis tests performed. Further, any subset of those combinations selected for the models would be arbitrary, given the absence of either research on the effects of combinations of victim actions or relevant theory that specifies which combinations would be most likely to affect, for good or ill, the outcomes of crimes. In any case, only 17.7 percent of all victims used more than one type of SP (13.3 percent used two types, 3.0 percent used three and 1.4 percent used more than three), so there usually is no issue of the effects of combinations of SP actions.[2] Further, when we examined the correlations among SP actions, we found no correlations even as large as 0.2, and only three exceeding 0.1, out of 120 total bivariate correlations. Thus, there appears to be no pronounced clustering of SP actions in the minority of cases where multiple actions were taken.

Other independent variables included in our models measure characteristics of the victims, offenders and circumstances that might influence the outcomes of the incidences and be correlated with the willingness or ability of victims to use each defensive action. First, three variables were included to reflect power advantages that offenders had over victims. ADVSEXOF was coded higher when male offender(s) confronted a female victim, that is, there was likely to be a power advantage to the offender based on sex. ADVAGEOF was coded higher when one or more offenders were in their physical prime ages (15 through 29) and the victim(s) was not in this age range, that is, there was likely to be a power advantage to the offender based on age and associated physical fitness. ADVNUM equaled the number of offenders minus the number of victims, measuring any numerical advantage of offenders.

Other variables measured whether offenders possessed weapons during the incident (OHADGUN, OHADKNIF, OHADSHAP) or whether offender(s) entered or attempted to enter the victim's home or car (GOTINHOM and GOTINCAR). Another twelve variables measured attributes of victims that are mostly self-explanatory. They are included because they reflect the willingness and capability of the victim to protect themselves and possibly different levels of risk of injury. For instance,

2. The percent of incidents in which victims used multiple types of SP was 17.7 in all confrontational crimes, 19.0 in robbery incidents, 16.5 in assaults, 23.4 in confrontational burglaries and 32.0 in sexual assaults.

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victims older than 65 are, on the one hand, easier for the offender to injure because of their physical frailties and inability or disinclination to retaliate. On the other hand, in robberies, it may be precisely because offenders anticipate little resistance from older victims that they do not feel a need to attack them at the outset.

Ten other variables measure attributes of offenders, as perceived by victims, as well as the relationship between victim and offender. Intimate offenders such as family members and sexual intimates may be more inclined to inflict harm on the victim because hostility has had time to intensify in the course of extended emotional interaction. Alternatively, emotional bonds might inhibit the offender's aggression. Emotional intimacy might also influence the willingness and ability of victims to protect themselves—victims might be reluctant to direct forceful actions at intimates. Because there could be multiple offenders, with differing relationships to the victim, we simply coded whether a given relationship existed between the victim and at least one offender. Thus it is perfectly possible for a given incident to receive the higher code on more than one relationship variable. The same procedure was followed for offender race variables.

Other independent variables measure the degree of safety for the victim in terms of their familiarity with the setting and the possibility of gaining assistance from others. ATHOME reflects whether the crime occurred in the victim's home, while NEARHOME reflects whether the incident occurred in the immediate area around the home, such as the yard, garage and very close streets. SECUPUB stands for a secure public place that may have capable guardians, such as banks, other commercial places, offices, factories or school buildings.

Other variables indicating an urban or rural setting (RURAL, URBAN) reflect population density of the setting and thus the likelihood that there would be other people around who could serve as allies to the victim in intervening or summoning police. The presence of bystanders might discourage offender aggression, but it could also provoke it in aggressors who perceived a need to deter the victim from eliciting assistance from those potential allies. Alternatively, the presence of family members (FAMIPRES, OTHEPRES) could either encourage victims to resist for the sake of protecting their loved ones or make them cautious about resisting to avoid provoking offenders into attacking these others. Note that variables were omitted from equations only when it was necessary because they were constants in the subsample being analyzed.

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FINDINGS

FREQUENCY AND INJURY RATES OF PROTECTIVE ACTIONS

Table 2 shows how often NCVS crime victims reported using the various types of victim protective actions and the share of victims using each method who were injured. Readers should not interpret these figures as measures of the relative effectiveness of the various resistance tactics, because simple differences in injury rates reflect more than just differences in the effects of victim actions. Nevertheless, this table conveys simple descriptive information that is arguably more important than the results of the later complex multivariate analyses. Most important, these figures show that while many crime victims are injured, they are rarely injured after taking protective action and are almost never seriously injured after resisting. For all 27,595 crime incidents, fewer than 2 percent involved a victim being injured after resisting the offender, and fewer than one-half of 1 percent involved a victim being seriously injured after resisting. Of all crimes involving SP actions and injury, only 10 percent involved SP followed by injury. Thus a scholar who implicitly interpreted SP-plus-injury crimes as incidents in which SP provoked offenders into injuring the victim would be wrong in at least 90 percent of the cases.

Once victims resist, the probability that they will suffer any further injury drops almost to zero, regardless of type of crime or resistance. Most offenders in personal larcenies and burglaries probably never had any intention of hurting their victims, and thus there were no violent intentions to thwart. Post-resistance injury is also rare in sexual assaults, robberies and assaults. This does not mean there is no risk to victim resistance, but the chances of resistance provoking offenders to inflict injury is low by any reasonable standard (2.8 percent of crimes with SP) and the risk of serious injury is close to zero (0.7 percent). Independent of victim resistance, violent crime is by definition inherently dangerous. Even among victims who did not resist, about 18.5 percent were injured; the rest were merely threatened. But resistance rarely adds to this "baseline" level of danger, given how infrequently any further injury is inflicted after resistance.

These conclusions can be drawn even before performing complex multivariate tests for a simple enough reason. Even if one were to make the extreme assumption that all cases of post-SP injury were incidents in which resistance alone caused the offender to hurt the victim, it would still be accurate to conclude that resistance rarely causes the victim to suffer further injury. In reality, it is highly unlikely that all crime victims who resisted and were then injured suffered those injuries because they resisted, because some offenders were certainly determined to hurt their victims regardless. Thus, the post-SP injury percentage is properly viewed

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Table 2. Frequency and Injury Rates of Self-Protection (SP) Strategies, in Percentages

	All Offenses				Robberies			
SP Strategy	*Frequency*	*Injured*	*Injured after SP*	*Seriously Injured after SP*	*Frequency*	*Injured*	*Injured after SP*	*Seriously Injured after SP*
Attacked with Gun	45	33.3	2.2	0.0	6	33.3	0.0	0.0
Threatened with Gun	202	13.9	2.5	1.5	26	11.5	7.7	7.7
Attacked w. Nongun Weapon	230	40.6	2.6	0.9	35	45.7	2.9	2.9
Threatened w. Nongun Weapon	232	18.5	0.9	0.4	14	15.4	0.0	0.0
Attacked without Weapon	2,661	47.4	3.8	1.2	279	51.6	7.2	4.3
Threatened without Weapon	540	20.6	2.6	0.4	35	22.9	2.9	0.0
Struggled	4,984	49.8	4.1	1.0	542	50.9	6.3	1.3
Chased, Held Offender	517	24.6	2.3	0.4	76	32.5	6.6	2.6
Yelled, Turned on Lights	2,492	27.4	2.7	0.7	228	38.6	5.7	1.8
Stalled, Pretended to Cooperate	535	21.5	4.5	1.5	147	11.6	4.1	1.4
Argued, Reasoned, Pleaded	2,700	23.3	3.4	0.9	160	26.9	6.9	2.5
Ran Away, Hid	3,807	20.5	1.8	0.4	335	31.4	3.6	0.6
Called Police or Guard	1,990	17.8	0.9	0.2	100	27.0	1.0	0.0
Tried to Attract Attention	567	38.7	1.9	0.4	83	42.2	4.8	0.0
Screamed from Pain or Fear	569	77.0	3.5	1.6	68	70.6	5.9	4.4
Other SP Strategies	4,149	15.9	2.4	0.5	273	28.2	8.1	4.0
Any SP	19,519	26.4	2.8	0.7	1,697	33.8	5.4	1.6
No SP	8,077	18.5	n/a	n/a	943	23.1	n/a	n/a
Total Incidents*	27,595	24.1	2	0.5	2,640	30.0	3.5	1.1

* Total Incidents are smaller than the sum of SP actions because victims often employed multiple actions.

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Table 2. Frequency and Injury Rates of Self-Protection (SP) Strategies, in Percentages (continued)

	Assaults				Confrontational Burglaries			
SP Strategy	*Frequency*	*Injured*	*Injured after SP*	*Seriously Injured after SP*	*Frequency*	*Injured*	*Injured after SP*	*Seriously Injured after SP*
Attacked with Gun	28	39.3	7.1	0.0	12	25	0.0	0.0
Threatened with Gun	138	15.8	2.9	0.7	38	10.5	0.0	0.0
Attacked w. Nongun Weapon	161	41.9	2.5	0.6	27	25.9	3.7	0.0
Threatened w. Nongun Weapon	176	18.2	1.1	0.6	34	17.6	0.0	0.0
Attacked without Weapon	2,146	46.2	3.4	0.6	106	57.5	1.9	0.0
Threatened without Weapon	474	19.2	2.5	0.4	22	22.7	0.0	0.0
Struggled	3,842	48.8	3.6	0.7	198	60.3	6.6	1.5
Chased, Held Offender	324	28.7	2.5	0.0	77	10.4	0.0	0.0
Yelled, Turned on Lights	1,642	25.4	2.4	0.4	372	16.9	1.6	0.0
Stalled, Pretended to Cooperate	299	15.4	4.3	0.7	29	17.2	6.9	0.0
Argued, Reasoned, Pleaded	2,146	18.0	2.9	0.2	174	30.5	2.3	0.0
Ran Away, Hid	3,179	18.0	1.6	0.3	114	36.8	3.5	0.9
Called Police or Guard	1,492	17.5	0.8	0.1	366	14.2	1.1	0.0
Tried to Attract Attention	388	35.4	0.5	0.0	41	31.7	4.9	0.0
Screamed from Pain or Fear	353	78.8	2.5	0.0	54	68.5	1.9	0.0
Other SP Strategies	3,441	14.5	2.0	0.2	241	7.9	2.5	0.0
Any SP	15,503	24.9	2.5	0.4	1,293	20.1	2.7	0.3
No SP	6,068	17.1	n/a	n/a	528	12.5	n/a	n/a
Total Incidents*	21,570	22.7	1.8	0.3	1,821	17.9	1.9	0.2

* Total incidents are smaller than the sum of SP actions because victims often employed multiple actions

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Table 2. Frequency and Injury Rates of Self-Protection (SP) Strategies, in Percentage (continued)

	Sexual Assaults				Personal Larcenies**
SP Strategy	*Frequency*	*Injured*	*Injured after SP*	*Seriously Injured after SP*	*Frequency*
Attacked with Gun	0	-	-	-	0
Threatened with Gun	1	0	0.0	0.0	0
Attacked w. Nongun Weapon	5	60.0	0.0	0.0	2
Threatened w. Nongun Weapon	10	10.0	0.0	0.0	0
Attacked without Weapon	120	35.8	5.0	0.0	6
Threatened without Weapon	11	33.3	0.0	0.0	0
Struggled	343	36.2	2.9	0.0	37
Chased, Held Offender	4	0	0.0	0.0	37
Yelled, Turned on Lights	219	32.0	3.2	0.0	27
Stalled, Pretended to Cooperate	49	40.8	4.1	0.0	4
Argued, Reasoned, Pleaded	213	34.9	3.8	0.0	2
Ran Away, Hid	161	20.5	0.6	0.0	15
Called Police or Guard	38	42.1	5.3	0.0	12
Tried to Attract Attention	41	51.2	4.9	0.0	11
Screamed from Pain or Fear	83	61.4	6.0	0.0	4
Other SP Strategies	171	12.9	0.0	0.0	28
Any SP	886	25.2	2.5	0.0	139
No SP	233	19.0	n/a	n/a	306
Total Incidents*	1,119	23.9	2.0	0.0	445

* Total Incidents are smaller than the sum of SP actions because victims often employed multiple actions.
** Since there are no injured Vs in personal larceny incidents, injury percentages are not shown.

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as an upper limit on the share of crimes in which protective actions might have provoked offenders into attacking.

These simple injury rates, however, cannot tell us whether resistance actually reduces risk of injury. Perhaps victims resist only in situations that were already relatively safe, or resist only offenders who appeared unlikely to hurt them. Nor can these figures tell us which protective actions are relatively more effective, inconsequential or counter-productive. To address these issues, analyses using multivariate controls are needed.

This extremely low rate of post-SP injury is good news for crime victims. It creates, however, statistical problems for assessing the relative effectiveness of different protective strategies for avoiding injury because it means that there is very little variation on dependent variables measuring post-SP injury. It is harder to predict very rare outcomes. Estimates of the impact of a given variable will necessarily be unstable even in fairly large samples because they are based on so few cases with the outcome of interest. This problem is aggravated when analyses are confined to subsamples pertaining to specific crime types, especially the less frequent ones, and is even more severe with regard to estimating effects of the rarer SP actions. Thus, for example, despite the very large NCVS total samples, there are few robberies with post-SP injury, and also few with armed resistance. Estimates of the effects of armed resistance on post-SP injury in robberies will therefore depend on a few cases and be correspondingly unstable.

PROPERTY LOSS

Middle-class observers might be tempted to dismiss property loss as a minor consequence of robberies, burglaries and larcenies, preferring instead to focus only on injury, fear, invasion of privacy and the loss of a sense of security. This is certainly true of scholars who study victim resistance because they rarely address the effects of resistance on property loss. In contrast, lower income persons, for whom the loss of $100 might make it impossible to buy groceries or pay the rent, might be less inclined to regard the issue as trivial. Thus we begin by assessing the impact of victim actions on whether victims of robbery, confrontational burglary or personal contact larceny lost any property.

The findings in Table 3 indicate that thirteen of the sixteen protective actions were associated with lower rates of property loss compared to nonresistance, eleven significantly so. Based on the size of the coefficients of the corresponding variables, three of the four most effective methods for avoiding property loss in crimes in general were armed resistance, all in robberies were armed resistance, and three of the four in confrontational

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burglaries were armed resistance. Note that the crime-specific findings are unstable for the rarer forms of SP, including use of a gun. Distributions are extreme on both these SP variables and the property loss dependent variable, because property loss is extremely rare among victims who used guns.

Table 3. Property Loss

	Logit Coefficient (ratio, coef./SE)							
	All Types of Crime		*Robbery*		*Confrontational Burglary*		*Personal Larceny*	
Victim's Self Protection								
Attack with Gun	-1.367	(-1.94)	-1.793**	(-1.97)	-2.556	(-1.60)	-	
Threat with Gun	-1.682*	(-4.35)	-21.795	(-0.00)	-0.265	(-0.57)	-	
Attack with nongun weapon	-0.884*	(-2.96)	-1.765*	(-4.33)	-1.451**	(-2.06)	-24.004	(-0.00)
Threat withnongun weapon	-2.227*	(-4.27)	-1.562**	(-2.28)	-20.453	(-0.00)	13.436	(0.00)
Attack withoutweapon	-0.549*	(-5.80)	-0.727*	(-4.84)	-0.671	(-2.12)	-5.331*	(-3.30)
Threat without weapon	-1.124*	(-3.97)	-1.523*	(-3.42)	0.670	(1.15)	-	
Struggled	-0.461*	(-6.71)	-0.665*	(-5.80)	-1.053*	(-4.16)	-4.902*	(-6.27)
Chased, heldoffender	1.056*	(8.35)	0.060	(0.22)	0.802*	(2.76)	0.679	(0.55)
Yelled, turned onlights	-0.319*	(-3.54)	-0.449*	(-2.69)	-0.629*	(-3.33)	-2.071**	(-2.16)
Stalled, pretended to cooperate	0.930*	(7.58)	0.732*	(2.96)	1.087**	(2.40)	17.532	(0.00)
Argued, reasoned, pleaded	-1.016*	(-9.18)	-0.716	(-3.62)	-0.568**	(-2.08)	-1.848	(-0.96)
Ran away, hid	-1.285*	(-14.34)	-1.332*	(-9.79)	-0.522	(-1.71)	-3.752*	(-3.04)
Called police or guard	-0.482*	(-4.60)	-0.479**	(-1.99)	-0.219	(-1.24)	1.485	(0.58)
Tried to attract attention	-0.037	(-0.22)	-0.794*	(-3.01)	0.110	(0.23)	-0.539	(-0.25)
Screamed from pain or fear	0.371**	(2.34)	0.779**	(2.48)	0.632	(1.52)	20.801	(0.00)
Other SP strategies	-0.767*	(-9.53)	-0.509*	(-3.34)	-0.807*	(-3.60)	-3.393*	(-3.90)
PowerDifference								
ADVSEXOF	0.160*	(2.90)	0.168	(1.43)	-0.341**	(-2.27)	-2.104*	(-2.73)
ADVAGEOF	0.373*	(6.90)	-0.260**	(-2.50)	0.415*	(2.65)	-0.115	(-0.20)
ADVNUM	0.043*	(4.68)	0.086*	(3.05)	0.081	(1.68)	-0.376	(-1.75)
Offender weapons and attack								
OHADGUN	0.953*	(14.36)	0.668*	(5.05)	0.581**	(2.23)	-	
OHADKNIF	0.441*	(4.97)	-0.088	(-0.62)	0.312	(1.04)	-	
OHADSHAP	0.123	(0.55)	-0.027	(-0.08)	0.750	(0.85)	-	
GOTINHOM	-1.057*	(-5.42)	-		-1.514*	(-7.46)	-	
GOTINCAR	0.778	(0.81)	-		0.398	(0.44)	-	
Victim Characteristics								
HADCHILD	-0.153*	(-2.84)	-0.016	(-0.14)	-0.153	(-0.96)	0.502	(0.72)
HOUSOWN	-0.037	(-0.59)	-0.101	(-0.81)	0.438**	(2.50)	-1.176	(-1.49)
EMPLOYED	-0.143**	(-2.55)	-0.120	(-1.10)	0.103	(0.66)	-0.956	(-1.55)
OLD65	0.876*	(7.38)	-0.004	(-0.01)	0.862*	(3.38)	-0.488	(-0.60)
MARRIED	-0.129**	(-2.06)	0.182	(1.42)	0.109	(0.66)	-0.742	(-1.26)
EDUCATIN	-0.017*	(-4.12)	-0.015	(-1.75)	0.003	(0.30)	-0.055	(-1.34)
ARMFORCE	-0.834**	(-2.00)	0.657	(0.65)	0.133	(0.09)	17.871	(0.00)
BLACK	0.133	(1.94)	0.321**	(2.39)	-0.124	(-0.54)	0.433	(0.46)
ASIAN	0.538*	(3.75)	0.240	(0.93)	-0.202	(-0.44)	-1.686	(-1.64)
HISPANIC	0.510*	(6.93)	0.134	(0.95)	-0.158	(-0.62)	-0.415	(-0.55)
NUMVICEX	-0.056*	(-4.52)	-0.011	(-0.92)	-0.049	(-0.98)	1.044	(0.74)
NUMHOUSE	0.164**	(2.59)	0.076	(0.60)	0.196	(1.10)	-0.366	(-0.47)

* p<0.01 (two-tailed) ** 0.01<P<0.05 (two tailed)

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Table 3. Property Loss (continued)

	All Type of Crime		*Robbery*		*Confrontational Burglary*		*Personal Larceny*	
Offender Characteristics								
OFDGANG	-0.240*	(-2.66)	-0.263	(-1.66)	0.014	(0.04)	-1.313	(-0.89)
OFDSUBST	-0.057	(-1.01)	0.234**	(2.05)	-0.087	(-0.58)	0.652	(0.41)
OFDFAMIL	-0.453*	(-3.31)	0.698**	(2.11)	-0.637	(-1.93)	15.344	(0.00)
OSEXINTI	-0.780*	(-7.61)	0.489**	(2.00)	-0.405	(-1.93)	17.959	(0.00)
OSUPERIOR	-0.101	(-0.33)	1.716	(1.59)	1.660**	(1.97)	-	
OFDACQNT	-0.715*	(-9.13)	0.156	(0.92)	0.009	(0.05)	19.751	(0.00)
OWORKACQ	-1.617*	(-6.73)	1.503	(2.45)	-0.481	(-0.55)	-	
OFDBLACK	0.543*	(7.61)	0.234	(1.83)	-0.182	(-0.82)	0.179	(0.27)
OFDWHITE	-0.420*	(-5.95)	0.110	(0.81)	-0.528*	(-2.64)	0.251	(0.34)
Incident Circumstances								
RURAL	-0.166**	(-2.01)	0.060	(0.34)	-0.322	(-1.60)	-1.710	(-1.78)
URBAN	0.150*	(2.82)	0.051	(0.48)	-0.018	(-0.12)	0.219	(0.38)
ATHOME	0.613*	(7.50)	0.335	(1.41)	-		14.935	(0.00)
NEARHOME	-0.410*	(-5.71)	0.302**	(2.18)	-		0.351	(0.34)
SECUPUB	-0.463*	(-6.71)	-0.146	(-1.06)	-		0.809	(1.31)
FAMIPRES	-0.369*	(-5.26)	-0.095	(-0.57)	-0.105	(-0.68)	0.191	(0.24)
OTHRPRES	-0.568	(-10.14)	-0.286*	(-2.67)	-0.510**	(-2.25)	0.913	(1.31)
Sample size	25,858		2,473		1,671		410	
-2 Log-likelihood	12,679		2,752		1,457		124	

* p<0.01 (two-tailed) ** 0.01<P<0.05 (two tailed)

INJURY REGARDLESS OF INJURY-SP SEQUENCE

It could be hypothesized that this greater ability of resisting victims to avoid property loss comes at the price of increased risk of injury. While some victims might succeed in retaining their property by resisting, their resistance might anger aggressors into attacking them. Table 4 presents findings comparable to those reported in most research, in that they show the association between protective actions and injury to the victim, without respect to whether injury preceded or followed resistance. It should be stressed that the purpose of reporting the Table 4 estimates is to provide results comparable to those in most studies, not to report results that we regard as the most meaningful estimates of SP effects on victim injury.

The results are extremely mixed and reveal no clear patterns. About half of the protection variable coefficients are positive and half negative. Those that are negative are as likely to pertain to forceful as nonforceful actions. Many of these findings are hard to understand if one interprets the SP-injury associations as the effects of victim actions on injury. For example, taken at face value, they seem to suggest that, aside from threatening the offender with a gun or calling the police, the most effective methods for avoiding injury were threatening without a weapon and "yelling or turning on the lights." While some of these apparent

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interpretations might be valid, the findings are ambiguous because they take no account of SP-injury sequence. One cannot tell if positive associations reflect counterproductive effects of foolish resistance actions or previously nonresisting victims roused into action by the injuries inflicted on them.

Table 4. Injury (Regardless of Sequence)

	Logit Coefficient (ratio, coef./SE)									
	All Types of Crime		*Robbery*		*Assault*		*Confrontational Burglary*		*SexAssault*	
Victim's Self-Protection										
Attack with Gun	1.068*	(2.96)	-0.227	(-0.24)	1.408*	(3.14)	1.761	(1.92)	-	
Threat with Gun	-0.726*	(-2.94)	-2.118**	(-2.16)	-0.347	(-1.24)	-0.967	(-1.26)	-20.032	(-0.00)
Attack with Nongun Weapon	0.672*	(4.30)	0.499	(1.32)	0.826*	(4.40)	0.711	(1.33)	1.463	(1.32)
Threat with Nongun Weapon	-0.492**	(-2.47)	-0.547	(-0.73)	-0.578***	(-2.40)	0.344	(0.59)	-1.931	(-1.34)
Attack without Weapon	1.068*	(22.05)	0.913*	(6.13)	1.072*	(19.60)	1.682*	(6.32)	0.458	(1.81)
Threat without Weapon	-0.381*	(-3.01)	-0.745	(-1.63)	-0.382*	(-2.77)	-0.756	(-0.95)	-1.242	(-1.38)
Struggled	1.316*	(34.81)	1.011*	(8.87)	1.357*	(31.10)	2.069*	(9.90)	0.871*	(4.81)
Chased, Held Offender	0.049	(0.41)	-0.103	(-0.37)	0.394*	(2.72)	-0.809	(-1.58)	-19.320	(-0.00)
Yelled, Turned on Lights	-0.236*	(-3.91)	0.101	(0.58)	-0.245*	(-3.26)	-0.281	(-1.20)	-0.046	(-0.21)
Stalled, Pretended to Cooperate	0.128	(1.04)	-0.763*	(-2.64)	-0.130	(-0.70)	-0.524	(-0.82)	0.041	(0.11)
Argued, Reasoned, Pleaded	-0.162*	(-2.79)	-0.380	(-1.66)	-0.335*	(-4.76)	0.563**	(2.19)	0.358	(1.73)
Ran Away, Hid	-0.125**	(-2.48)	0.154	(1.08)	-0.126***	(-2.15)	0.819*	(2.99)	-0.197**	(-0.76)
Called Police or Guard	-0.552*	(-7.58)	-0.463	(-1.72)	-0.442*	(-5.21)	-0.447	(-2.08)	0.668	(1.49)
Tried to Attract Attention	0.431*	(3.99)	0.183	(0.68)	0.501*	(3.80)	-0.016	(-0.03)	0.372	(0.89)
Screamed from Pain or Fear	2.017*	(16.89)	1.482*	(4.71)	2.151*	(14.18)	2.168*	(4.56)	1.460*	(4.69)
Other SP Strategies	-0.155*	(-3.02)	0.167	(1.04)	-0.169*	(-2.86)	-0.727**	(-2.38)	-0.521	(-1.78)
Power Difference										
ADVSEXOF	0.149*	(3.74)	0.011	(0.09)	0.076	(1.54)	-0.023	(-0.12)	0.062	(0.18)
ADVAGEOF	0.049	(1.15)	0.079	(0.73)	0.045	(0.88)	0.117	(0.54)	0.246	(0.88)
ADVNUM	0.030*	(3.99)	0.110*	(4.52)	0.019**	(2.35)	0.016	(0.28)	-0.188	(-1.33)
Offender Weapons and Attack										
OHADGUN	-0.521*	(-7.33)	-0.867*	(-5.98)	-0.718*	(-7.40)	0.089	(0.30)	0.912**	(2.27)
OHADKNIF	-0.152**	(-2.19)	-0.311**	(-2.01)	-0.273*	(-3.17)	0.044	(0.13)	0.826**	(2.05)
OHADSHAP	0.371*	(2.56)	0.186	(0.53)	0.340**	(2.04)	1.537	(1.75)	1.781	(1.34)
GOTINHOM	-19.974	(-0.01)	-		-		-19.196	(-0.01)	-	
GOTINCAR	-19.306	(-0.00)	-		-		-18.167	(-0.00)	-	

* $p<0.01$ (two-tailed) ** $0.01<P<0.05$ (two-tailed)

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Table 4. Injury (continued)

	Logit Coefficient (ratio, coef./SE)									
	All Types of Crime		*Robbery*		*Assault*		*Confrontational Burglary*		*SexAssault*	
Victim Characteristics										
HADCHILD	-0.056	(-1.56)	-0.065	(-0.58)	-0.072	(-1.76)	-0.135	(-0.70)	0.281	(1.51)
HOUSOWN	-0.128*	(-3.06)	-0.124	(-0.96)	-0.122**	(-2.54)	-0.105	(-0.50)	-0.592*	(-2.60)
EMPLOYED	-0.261*	(-6.67)	-0.060	(-0.54)	-0.236*	(-5.10)	-0.605	(-3.39)	0.197	(0.99)
OLD65	-0.313***	(-2.36)	0.214	(0.68)	0.011	(0.06)	-0.823**	(-1.97)	2.203*	(2.73)
MARRIED	-0.220*	(-4.86)	-0.070	(-0.52)	-0.232*	(-4.43)	-0.112	(-0.49)	-0.056	(-0.20)
EDUCATIN	-0.024*	(-7.73)	-0.015	(-1.67)	-0.030*	(-8.32)	-0.004	(-0.24)	0.000	(-0.02)
ARMFORCE	-0.570**	(-2.35)	-19.807	(-0.00)	-0.545**	(-2.13)	-18.386	(-0.00)	-20.094	(-0.00)
BLACK	-0.042	(-0.76)	-0.040	(-0.29)	-0.043	(-0.63)	-0.094	(-0.31)	-0.416	(-1.24)
ASIAN	0.104	(0.83)	0.209	(0.78)	-0.072	(-0.44)	0.815	(1.48)	-0.662	(-0.95)
HISPANIC	-0.023	(-0.41)	-0.233	(-1.58)	0.027	(0.41)	0.113	(0.39)	-0.372	(-1.12)
NUMVICEX	-0.010*	(-3.77)	-0.001	(-0.08)	-0.011*	(-3.74)	0.007	(0.24)	0.016	(1.09)
NUMHOUSE	0.037	(0.84)	-0.086	(-0.67)	0.049	(0.95)	0.058	(0.28)	-0.047	(-0.21)
Offender Characteristics										
OFDGANG	0.119	(1.92)	0.275	(1.72)	0.017	(0.24)	0.553	(1.55)	0.984	(2.47)
OFDSUBST	0.367*	(10.28)	0.439*	(3.88)	0.311*	(7.46)	0.681*	(4.11)	0.592*	(3.38)
OFDFAMIL	0.191***	(2.26)	-0.061	(-0.19)	0.183	(1.87)	1.160*	(3.62)	-19.803	(-0.00)
OSEXINTI	0.951*	(15.87)	0.692*	(2.92)	1.014*	(13.73)	1.108*	(4.93)	0.491**	(2.04)
OSUPERIOR	0.550*	(3.18)	1.307	(1.89)	0.358	(1.83)	0.082	(0.09)	20.752	(0.00)
OFDACQNT	0.126*	(2.82)	0.179	(1.04)	0.085	(1.68)	0.149	(0.63)	0.089	(0.40)
OWORKACQ	-0.055	(-0.61)	-0.658	(-0.97)	-0.089	(-0.91)	-0.102	(-0.09)	0.208	(0.54)
OFDBLACK	0.047	(0.84)	0.030	(0.23)	0.013	(0.19)	0.282	(0.84)	0.136	(0.39)
OFDWHITE	-0.103**	(-2.04)	0.030	(0.22)	-0.134**	(-2.29)	-0.045	(-0.15)	-0.157	(-0.57)
Incident Circumstances										
RURAL	0.047	(0.99)	-0.350	(-1.89)	0.080	(1.51)	0.087	(0.37)	0.080	(0.34)
URBAN	0.013	(0.33)	0.189	(1.72)	-0.011	(-0.25)	0.108	(0.58)	-0.083	(-0.42)
ATHOME	0.406*	(6.94)	0.090	(0.39)	0.515*	(6.68)	-		0.113	(0.45)
NEARHOME	0.055	(1.15)	-0.002	(-0.02)	0.010**	(0.18)	-		0.099	(0.40)
SECUPUB	-0.176*	(-3.87)	-0.453*	(-2.93)	-0.103**	(-2.05)	-		-0.670	(-1.78)
FAMIPRES	-0.100**	(-2.03)	-0.309	(-1.77)	0.160*	(2.70)	-0.291	(-1.52)	-0.306	(-1.14)
OTHRPRES	0.009	(0.22)	-0.052	(-0.47)	0.214*	(4.36)	-0.044	(-0.18)	-0.470	(-1.74)
Sample size	25,858		2,473		20,259		1,671		1,045	
-2 Log-likelihood	23,839		2,607		18,087		1,026		922	

* $p<0.01$ (two-tailed) ** $0.01<P<0.05$ (two-tailed)

POST-SELF PROTECTION INJURY

This problem is addressed in the analyses whose findings are reported in Table 5. Here the dependent variable denotes whether the victim was injured after taking protective actions. Victims were coded 2 if they took SP actions and were injured after doing so, and 1 if they took SP actions and were not injured after doing so. The second group included those who were injured only before taking SP actions. This method of defining the dependent variable eliminates the SP-injury sequence problem because only post-SP injuries can "count against" an SP action. It permits comparisons of effectiveness among the sixteen SP actions, but not

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between a given SP action and taking none. Cases in which victims took no action were not included in the Table 5 and 6 analyses because the concept of post-SP injury does not apply. (We later report results from an alternative approach in which no-SP cases were included and arbitrarily coded as whether there was "post-SP" injury.) Thus, unlike the preceding analyses, the Tables 5 and 6 results describe only victims who took some kind of protective action. They address the question: "among victims who did something for protection, which actions were relatively more effective in averting subsequent injury?"

Because nonresisting victims were excluded, we could not treat no-SP as the excluded category. It is statistically inconsequential which protective action was treated as the excluded category. We nonetheless selected "called the police" as the omitted category because it is often presented as the officially recommended course of action for crime victims, and thus can serve as a useful point of comparison. The signs and absolute sizes of coefficients in Tables 5 and 6 should therefore not be compared with those in Table 4, because the omitted SP category serving as the point of reference is different. Instead, the focus should be on the relative sizes of the coefficients within each model.

The "effectiveness" of a given SP action is meaningful only in a comparative context even if the alternative is doing nothing. Thus the signs of the coefficients for the SP variables are a somewhat arbitrary reflection of which SP category we chose to treat as the omitted category. If we omit the SP type with the lowest rate of injury, the coefficients of all the included SP variables will be positive. Conversely, if we treat the SP with the highest injury risk as the omitted category, all SP coefficients will be negative, perhaps suggesting to the unwary that all SP actions "work" in avoiding injury. In our injury analyses we treat "no-SP" (Table 4) or "call the police" (Tables 5 and 6) as the omitted categories merely because they are well known as the no-resistance courses of action that are sometimes recommended to prospective victims by authorities such as police or victim advocates. Readers should note, however, that these options are often neither either feasible nor safe for some victims. Conversely, when they are adopted, it is sometimes an indication that the circumstances of the crime were already relatively safe for reasons having nothing to do with victim actions. For example, if a victim was able to call the police during the crime incident, it suggests that circumstances were less risky. Consequently, even SP methods effective in averting offender attack may not have significant negative coefficients because they were not capable of driving the risk of injury below the already extremely low risk among those who had the luxury of calling the police while the incident was going on.

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The Table 5 estimates are therefore most appropriately viewed with a focus on the rankings and relative sizes of the SP coefficients. Most of the SP actions appear to have effects on post-SP injury that are not significantly different from calling the police. The SP actions with the largest negative coefficients are both types of armed resistance, threat with a nongun weapon and threat with a gun, though neither action's coefficient is significantly different from zero, partly due to the rarity of these actions. The only option with a significant negative coefficient was "ran away, hid." On the other hand, five types of unarmed SP action had significant positive associations, indicating that they were associated with higher post-SP injury than calling the police: attacking without a weapon, struggling with the offender, stalling or pretending to cooperate, arguing or reasoning or pleading, and screaming from pain or fear.

The meaning of the last association is ambiguous, for reasons discussed earlier. Leaving it aside, two of the significantly less effective SP actions were forceful and the other two nonforceful. None of the four forms of armed resistance were associated with significantly higher injury risk compared to calling the police. In sum, once SP-injury sequence is taken into account, there is no evidence indicating that either forceful resistance in general or armed resistance in particular is generally counterproductive or that it is less effective than nonforceful options in avoiding injury. The findings thus contradict earlier ones that nonforceful resistance is more effective than forceful (for example, Cook, 1986; Block and Skogan, 1986; Marchbanks et al., 1990; Zimring and Zuehl, 1986). The earlier conclusions were probably an artifact of the failure to address SP-injury sequence, because the analysts effectively treated injury preceding SP as if it could be a consequence of SP. This flaw makes resistance look less effective than it actually is.

Attending only to the sizes of the coefficients, the SP methods that appeared most effective in averting injury in all types of crimes were both armed resistance—threat with a gun and threat with any other weapon. In robberies, all of the five most effective SP actions were forceful resistance, and the top four were armed resistance. Among assaults, there was no clear pattern regarding types of SP that averted injury. In confrontational burglaries, five of the six most effective SP actions were forceful, and all four forms of armed resistance showed more success in averting injury than calling the police, though these differences were not significant. Finally, in sexual assaults, four of the six most effective SP actions were forceful, though again, post-SP injury in sexual assaults is so rare that even very large coefficients are not significantly different from zero.

Because the analyses reported in Table 5 excluded no-SP cases, which claimed 29 percent of the total sample, the sample sizes on which these analyses are based are substantially smaller than those reported in Table 4.

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Table 5. Injury after SP Action

	Logit Coefficient (ratio, coef./SE)									
	All Types of Crime		*Robbery*		*Assault*		*Confrontational Burglary*		*SexAssault*	
Victim's Self-Protection										
Attack with Gun	0.471	(0.55)	-18.550	(-0.00)	1.248	(1.42)	-16.682	(-0.00)		
Threat with Gun	-0.517	(-0.85)	-18.061	(-0.00)	0.132	(0.21)	-16.959	(-0.00)	-14.562	(-0.00)
Attack with Nongun Weapon	0.049	(0.12)	-1.213	(-0.88)	0.221	(0.44)	-0.147	(-0.11)	-10.502	(-0.00)
Threat with Nongun Weapon	-0.993	(-1.51)	-17.771	(-0.00)	-0.766	(-1.15)	-17.418	(-0.00)	-16.871	(-0.00)
Attack without Weapon	0.597*	(4.63)	0.766**	(2.37)	0.464*	(2.98)	0.001	(0.00)	3.055*	(2.86)
Threat without Weapon	-0.060	(-0.21)	-1.050	(-0.97)	0.051	(0.17)	-17.017	(-0.09)	-14.704	(-0.00)
Struggled	0.881*	(8.20)	0.918*	(3.27)	0.784*	(5.88)	1.861*	(3.62)	1.583	(1.86)
Chased, Held Offender	-0.126	(-0.41)	0.174	(0.32)	0.014	(0.04)	-17.450	(-0.10)	-16.257	(-0.00)
Yelled, Turned on Lights	0.026	(0.18)	0.458	(1.25)	0.072	(0.39)	-0.730	(-1.12)	-0.508	(-0.58)
Stalled, Pretended to Cooperate	0.678*	(2.89)	-0.702	(-1.34)	0.931*	(3.01)	-0.128	(-0.08)	-4.323	(-0.41)
Argued, reasoned, pleaded	0.365*	(2.72)	0.306	(0.77)	0.263	(1.58)	0.451	(0.66)	1.274	(1.20)
Ran away, hid	-0.424*	(-2.83)	-0.231	(-0.64)	-0.323	(-1.80)	0.210	(0.30)	-1.530	(-1.01)
Tried to attract attention	-0.267	(-0.82)	0.154	(0.27)	-1.507**	(-2.03)	1.830*	(1.98)	2.927	(1.77)
Screamed from pain or fear	0.925*	(3.42)	0.645	(0.94)	0.700	(1.83)	-18.283	(-0.00)	2.103	(1.57)
Other SP strategies	0.140	(1.03)	0.824*	(2.55)	0.037	(0.22)	0.163	(0.26)	-20.499	(-0.01)
Power difference										
ADVSEXOF	0.204	(1.83)	-0.360	(-1.15)	0.145	(1.01)	-0.190	(-0.35)	16.286	(0.00)
ADVAGEOF	0.116	(0.97)	0.269	(1.03)	0.004	(0.03)	0.608	(1.03)	-0.681	(-0.65)
ADVNUM	0.051*	(3.46)	0.095**	(2.25)	0.045*	(2.69)	0.102	(1.01)	0.249	(0.34)
Offender weapons and attack										
OHADGUN	0.241	(1.44)	0.680**	(2.08)	-0.111	(-0.47)	-0.594	(-0.58)	6.100*	(2.87)
OHADKNIF	0.116	(0.66)	0.005	(0.01)	0.125	(0.59)	-0.085	(-0.09)	-28.671	(-0.00)
OHADSHAP	0.598	(1.82)	1.332**	(2.31)	0.386	(0.89)	-16.776	(-0.00)	-20.090	(-0.00)
GOTINHOM	-17.975	(-0.01)	-		-		-17.078	(-0.01)	-	
GOTINCAR	-17.547	(-0.00)	-		-		-15.495	(-0.00)	-	

* p<0.01 (two-tailed) ** 0.01<P<0.05 (two-tailed)

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Table 5. Injury after SP action (continued)

	All Types of Crime		*Robbery*		*Assault*		*Confrontational Burglary*		*Sex Assault*	
Victim Characteristics										
HADCHILD	-0.215**	(-2.10)	-0.502	(-1.81)	-0.305**	(-2.50)	-0.128	(-0.25)	1.614**	(1.98)
HOUSOWN	0.020	(0.16)	-0.162	(-0.49)	0.085	(0.59)	0.152	(0.27)	-1.502	(-1.52)
EMPLOYED	-0.291*	(-2.66)	-0.269	(-0.96)	-0.280**	(-2.10)	-0.680	(-1.35)	-0.298	(-0.30)
OLD65	-1.001	(-1.72)	-1.163	(-0.94)	-17.415	(-0.00)	0.378	(0.40)	-14.230	(-0.00)
MARRIED	-0.154	(-1.19)	0.486	(1.57)	-0.270	(-1.66)	-0.003	(0.00)	0.242	(0.22)
EDUCATIN	-0.021**	(-2.45)	0.006	(0.30)	-0.041*	(-3.72)	0.050	(1.24)	0.086	(1.09)
ARMFORCE	-17.479	(-0.00)	-18.252	(-0.00)	-17.327	(-0.00)	-15.533	(-0.00)	-15.848	(-0.00)
BLACK	-0.097	(-0.64)	0.205	(0.63)	0.002	(0.01)	-0.880	(-0.91)	-4.755**	(-2.47)
ASIAN	-0.020	(-0.06)	0.889	(1.78)	-0.916	(-1.29)	-17.176	(-0.00)	-17.289	(-0.00)
HISPANIC	0.032	(0.21)	-0.239	(-0.59)	0.080	(0.44)	-0.115	(-0.16)	-0.649	(-0.46)
NUMVICEX	-0.056**	(-2.54)	-0.082	(-0.81)	-0.048**	(-2.12)	-0.002	(-0.02)	-0.633	(-0.97)
NUMHOUSE	0.173	(1.39)	0.130	(0.40)	0.187	(1.24)	0.352	(0.62)	-1.434	(-1.36)
Offender Characteristics										
OFDGANG	0.286	(1.84)	0.156	(0.38)	0.228	(1.20)	2.049*	(2.84)	1.619	(0.97)
OFDSUBST	0.379*	(3.83)	0.385	(1.41)	0.411*	(3.42)	0.857	(1.85)	0.895	(1.13)
OFDFAMIL	-0.252	(-0.96)	-1.640	(-1.57)	-0.056	(-0.19)	-0.531	(-0.43)	-16.219	(-0.00)
OSEXINTI	0.404*	(2.34)	0.712	(1.23)	0.646*	(2.94)	0.702	(1.18)	-2.538	(-1.40)
OSUPERIOR	1.211*	(3.07)	2.401	(1.58)	0.561	(1.14)	2.529	(1.29)	23.204	(0.00)
OFDACQNT	0.127	(1.01)	0.010	(0.02)	0.153	(1.04)	-0.040	(-0.07)	-0.113	(-0.10)
OWORKACQ	-0.724**	(-2.03)	-18.547	(-0.00)	-0.691	(-1.64)	-16.403	(-0.00)	1.170	(0.94)
OFDBLACK	0.244	(1.58)	0.253	(0.76)	0.094	(0.49)	1.188	(1.17)	2.420	(1.76)
OFDWHITE	-0.123	(-0.86)	-0.181	(-0.49)	-0.142	(-0.83)	1.334	(1.30)	-0.719	(-0.70)
Incident Circumstances										
RURAL	-0.079	(-0.54)	-0.137	(-0.29)	0.055	(0.32)	-1.062	(-1.45)	-2.038	(-1.60)
URBAN	0.172	(1.65)	-0.352	(-1.36)	0.365*	(2.86)	-0.224	(-0.48)	-0.918	(-1.04)
ATHOME	0.328**	(2.01)	0.750	(1.33)	0.286	(1.29)	-		0.047	(0.04)
NEARHOME	-0.083	(-0.60)	-0.023	(-0.06)	-0.155	(-0.95)	-		-0.295	(-0.33)
SECUPUB	-0.116	(-0.87)	0.398	(1.17)	-0.093	(-0.61)	-		-2.783	(-1.82)
FAMIPRES	0.340*	(2.49)	0.078	(0.19)	0.808*	(4.53)	0.022	(0.04)	0.347	(0.26)
OTHRPRES	0.176	(1.47)	-0.026	(-0.10)	0.536*	(3.29)	0.097	(0.14)	1.450	(1.06)
Sample size	15,233		1,251		12,329		1,041		477	
-2 Log-likelihood	4,104		560		2,908		188		83	

* $p<0.01$ (two-tailed) ** $0.01<P<0.05$ (two-tailed)

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This inflates standard errors and makes it even harder to achieve statistical significance for coefficients, especially those of the rarer defensive methods, because there is so little variation on these protection variables. As Table 2 indicated, few victims report using weapons for self-protection. This might reflect reality. It might also reflect an understandable reluctance to admit unlawful weapons possession to federal government interviewers in the context of a nonanonymous interview.

We believe that reporting large but nonsignificant coefficients is appropriate, in the spirit of exploratory findings. Just as qualitative research, based on case studies, life histories or informal interviewing of small nonprobability samples of informants, has yielded valuable insights, findings based on small samples of crime victims reporting less common methods of self-protection likewise merit dissemination, as long as readers understand that the estimates could be a product of chance.

Regardless, the effect of limited variation on the armed resistance variables is that standard errors of their coefficients are so large that even the largest coefficients are nonsignificant. For example, the robbery model coefficient for "attack with gun" is enormous, but is based on just six sample cases of robbery victims taking this SP action, none of whom suffered post-SP injury (Table 2). Thus, this coefficient was not statistically significant. Among robberies, all of the four largest negative SP coefficients were linked with armed resistance, yet none were statistically significant. That is, the injury-preventing effects of armed resistance appear to be larger than all other protective actions, yet estimates of these effects are unstable and imprecise.

We estimated variants of the models in Table 5 in which a single variable measured whether victims used any of the four types of armed resistance and was used in place of the four separate armed resistance variables. Coefficients for this variable were still nonsignificant in all models (results not shown in tables). The estimate closest to significance was in the post-SP models for robbery incidents. The coefficient for the armed resistance variable was a larger negative than the coefficient for any other protective measure, and equaled -1.893, implying that victims who used weapons to resist robbery have only 15.1 percent of the risk of subsequent injury prevailing among victims who called the police, other things being equal. But even this coefficient was significant at only the .076 level, 1-tailed.

Several types of unarmed resistance, some forceful and some nonforceful, are associated with significantly higher post-SP injury rates than calling the police: (1) physically attacking the offender, but without a weapon, (2) physically struggling, (3) stalling or pretending to cooperate, (4) arguing/reasoning/pleading and (5) screaming from fear or pain. Once again, there is no pattern regarding the distinction between forceful and

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nonforceful actions. All of these actions, however, have in common something that could provoke offender attack: they all create problems for the criminal that could be solved by attacking the victim. When dealing with victims who attack or struggle with them, offenders can stop the victims by injuring them and might even consider such action "defensive." Inflicting injury might also be effective in forcing victims who had been stalling to begin cooperating. It might also be perceived as a way to silence victims screaming in fear or pain. Alternatively, screaming may simply anger or panic offenders into thinking that the noise might lead to bystanders intervening or summoning the police.

It should, however, be stressed that these are assessments of relative injury-producing effects and that the Table 2 figures indicates that in absolute terms, post-SP injury is extremely rare for all SP actions. Thus, even large relative differences in injury risk generally imply only small absolute differences.

SERIOUS POST-SP INJURY

As evident in Table 2, fewer than one-quarter of the injuries inflicted in crimes are more serious than bruises or cuts. Yet because serious injury is probably what victims fear most, focusing on injury without respect to its seriousness fails to address what people care most about. Findings on the impact of victim actions on injury in general, most of which is no more serious than bruises and cuts, might not apply to SP effects on serious injury. For example, some forceful methods might be effective in avoiding more serious injury but themselves cause minor injury, as when a victim cuts his hand while striking the offender. Therefore we also assessed the effects of resistance on more serious injury. In these analyses, victims who suffered more serious injuries after taking protective actions were coded 2, and those who suffered exclusively minor injuries or no injuries after taking protective actions were both coded 1. As in the examination of all post-SP injury, this analysis was confined to victims who had taken some kind of protective action, because the concept of post-SP injury is not applicable to those who took no SP actions. The omitted SP action category was once again "called the police."

Victim SP actions are followed by serious injury in only 0.7 percent of confrontational crimes (Table 2, All Offenses column, Any SP row). Because serious post-SP injury is extremely rare, there is virtually no variation to explain. Combined with the rarity of some defensive actions, especially armed resistance, estimates of impact on serious injury are highly unstable, reflected in the low ratios of coefficients over standard errors shown in Table 6. These estimates are therefore presented in the

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spirit of exploratory findings and should be read in conjunction with Table 2 information on the frequency of each defensive action.

Even very large coefficients for protection variables were often not significant because of the action's rarity. For example, based on their very large negative coefficients, attacking or threatening the offender with a gun appears to be almost totally effective in avoiding serious injury. The estimates of their effects are not significant, however, because they were based on only forty-five sample cases of attacking with a gun and 202 of threatening with a gun, in a sample where serious injury after defensive

Table 6. Serious Injury after SP Action

	Logit Coefficient (ratio, coef./SE)							
	All Types of Crime		*Robbery*		*Assault*		*Confrontational Burglary*	
Victim's Self-Protection								
Attack with Gun	-16.543	(-0.00)	-15.912	(-0.00)	-16.069	(-0.00)	-9.716	(0.00)
Threat with Gun	-0.454	(-0.41)	-15.226	(-0.00)	0.580	(0.52)	-18.139	(0.00)
Attack with nongun weapon	0.018	(0.02)	-1.373	(-0.53)	0.176	(0.16)	-106.511	(-0.02)
Threat with nongun weapon	0.025	(0.03)	-14.595	(-0.00)	0.351	(0.38)	-29.267	(0.00)
Attack without weapon	1.168*	(5.00)	3.836*	(4.76)	0.691	(1.90)	-60.528	(-0.02)
Threat without weapon	-0.440	(-0.65)	-17.795	(-0.00)	-0.131	(-0.16)	-61.822	(-0.01)
Struggled	1.029*	(4.99)	1.560	(2.26)	1.001*	(3.14)	43.032	(0.02)
Chased, held offender	-0.677	(-0.87)	0.651	(0.60)	-15.680	(-0.01)	-72.550	(-0.02)
Yelled, turned on lights	-0.110	(-0.38)	0.082	(0.08)	0.085	(0.18)	-21.407	(-0.01)
Stalled, pretended to cooperate	0.883	(2.13)	0.751	(0.73)	0.802	(1.00)	-58.006	(-0.01)
Argued, reasoned, pleaded	0.474	(1.85)	0.817	(0.87)	-0.557	(-1.06)	-32.790	(-0.01)
Ran away, hid	-0.561	(-1.82)	-1.044	(-0.86)	0.021	(0.05)	0.657	(0.00)
Tried to attract attention	-1.335	(-1.54)	-19.940	(-0.26)	-15.907	(-0.01)	18.300	(0.00)
Screamed from pain or fear	1.444*	(3.52)	3.946*	(3.43)	-0.277	(-0.18)	31.363	(0.01)
Other SP strategies	0.101	(0.36)	2.351*	(3.24)	-0.380	(-0.82)	-54.514	(-0.01)
PowerDifference								
ADVSEXOF	0.787*	(3.74)	-0.455	(-0.58)	0.017	(0.05)	14.560	(0.01)
ADVAGEOF	0.528**	(2.42)	0.093	(0.14)	0.848*	(2.78)	32.883	(0.02)
ADVNUM	0.064**	(2.57)	0.038	(0.42)	0.071	(2.48)	1.362	(0.01)
Offender Weapons and Attack								
OHADGUN	0.897*	(3.26)	2.130*	(2.91)	0.491	(1.09)	-150.691	(-0.02)
OHADKNIF	0.634**	(2.16)	1.081	(1.37)	0.744	(1.83)	44.741	(0.02)
OHADSHAP	1.489*	(3.40)	3.469*	(3.18)	1.218	(1.70)	41.528	(0.00)
GOTINHOM	-16.530	(-0.01)		-		-	-21.001	(-0.01)
GOTINCAR	-16.022	(-0.00)		-		-	0.209	(0.00)

* p<0.01 (two-tailed) ** 0.01<P<0.05 (two-tailed)

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Table 6. Serious Injury after SP Action (continued)

	All Types of Crime		*Robbery*		*Assault*		*Confrontational Burglary*	
Victim Characteristics								
HADCHILD	0.133	(0.65)	-1.297	(-1.90)	-0.174	(-0.59)	-12.233	(0.00)
HOUSOWN	-0.427	(-1.79)	-1.635	(-1.92)	-0.237	(-0.72)	4.107	(0.00)
EMPLOYED	-0.094	(-0.43)	0.677	(0.98)	-0.603	(-1.90)	35.804	(0.02)
OLD65	-0.931	(-0.78)	-15.244	(-0.00)	-15.507	(-0.00)	27.137	(0.02)
MARRIED	-0.371	(-1.42)	0.015	(0.02)	-0.151	(-0.41)	-13.433	(-0.01)
EDUCATIN	0.016	(0.93)	-0.010	(-0.19)	-0.003	(-0.10)	-1.069	(-0.01)
ARMFORCE	-15.891	(-0.00)	-15.968	(-0.00)	-15.232	(-0.00)	29.608	(0.00)
BLACK	0.262	(0.94)	2.387*	(3.28)	-0.179	(-0.40)	6.520	(0.00)
ASIAN	-1.013	(-0.89)	-15.319	(-0.00)	-15.464	(-0.01)	24.688	(0.00)
HISPANIC	0.752*	(2.88)	0.545	(0.58)	1.160*	(3.37)	-16.435	(-0.01)
NUMVICEX	-0.207**	(-1.98)	0.054	(0.98)	-0.522	(-2.04)	-7.050	(0.00)
NUMHOUSE	-0.056	(-0.24)	-0.572	(-0.85)	-0.133	(-0.38)	-25.946	(-0.02)
Offender Characteristics								
OFDGANG	0.009	(0.03)	0.380	(0.41)	0.068	(0.16)	32.478	(0.02)
OFDSUBST	0.262	(1.32)	0.396	(0.65)	0.455	(1.57)	-16.105	(-0.01)
OFDFAMIL	0.115	(0.26)	-1.490	(-0.78)	1.114	(2.03)	15.726	(0.00)
OSEXINTI	-0.421	(-1.15)	-0.193	(-0.15)	1.257	(2.40)	-11.353	(0.00)
OSUPERIOR	1.077	(1.62)	-16.101	(-0.00)	-0.632	(-0.39)	-33.955	(0.00)
OFDACQNT	0.145	(0.56)	0.387	(0.47)	0.111	(0.30)	3.316	(0.00)
OWORKACQ	0.310	(0.61)	-15.693	(-0.00)	1.094	(1.85)	2.288	(0.00)
OFDBLACK	0.331	(1.08)	-0.547	(-0.72)	0.570	(1.33)	82.758	(0.04)
OFDWHITE	-0.174	(-0.60)	-0.803	(-0.80)	-0.112	(-0.28)	58.376	(0.03)
Incident Circumstances								
RURAL	0.000	(0.00)	-0.709	(-0.51)	0.276	(0.69)	-27.641	(-0.01)
URBAN	-0.046	(-0.22)	-0.762	(-1.26)	0.231	(0.73)	-31.547	(-0.03)
ATHOME	0.675**	(2.12)	2.035	(1.67)	-0.005	(-0.01)	-	
NEARHOME	0.463	(1.76)	-0.247	(-0.29)	0.457	(1.20)	-	
SECUPUB	-0.013	(-0.04)	0.322	(0.37)	0.209	(0.53)	-	
FAMIPRES	-0.002	(-0.01)	0.928	(0.96)	0.987**	(2.10)	36.479	(0.02)
OTHRPRES	-0.087	(-0.38)	0.506	(0.73)	0.821	(1.90)	-13.490	(0.00)
Sample size	15,233		1,251		12,329		1,041	
-2 Log-likelihood	1,239		138		625		0	

* p<0.01 (two-tailed) ** 0.01<P<0.05 (two-tailed)

action was almost nonexistent. Indeed, the coefficients for attacking with a gun were nonsignificant even though not a single victim taking this action was seriously injured after doing so. Similarly, even though none of the thirty-eight victims in the sample who reported threatening the offender with a gun in a confrontational burglary suffered injury of any kind after taking this action, its coefficient in the serious post-SP injury model, though large (-18.139), was still not statistically significant. Estimating effects of victim gun use in sexual assaults was impossible because there were no sample cases of sexual assault victims attacking their offender with a gun and only one case of a victim even threatening with a gun.

With these caveats in mind, the effectiveness of most victim actions was not significantly different in averting serious injury from calling the police.

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At least, the NCVS does not provide enough basis to reliably estimate differences in their effects. All victim actions are associated with a near-zero probability of suffering serious post-SP injury, a conclusion foreshadowed by the Table 2 figures indicating that only 0.7 percent of victims using self-protective actions of any kind suffered any serious injury after doing so. Only three defensive actions were associated with significantly different risks of serious injury compared to calling the police: attacking the criminal without a weapon, physically struggling with the offender and screaming from pain or fear. These three actions are associated with fairly large relative differences in the risk of serious injury; for example, victims who screamed were 4.7 times more likely to later suffer serious injury than those who called the police. But even large relative differences in risk do not imply substantial absolute differences in risks, given that the overall risk of serious post-resistance injury among the reference category victims was one-fifth of 1 percent (Table 2).

COMPARING THE IMPACT OF SP WITH NO SP

An alternative way to perform the post-SP injury analyses is to include no-SP cases, that is, crimes in which the victim did not take any SP actions. We estimated models in which post-SP injury was coded 2 if (a) the victim took some SP action and was injured afterwards, or (b) took no SP and was injured. This variable was coded 1 if (a) the victim took SP action and was not injured, (b) took SP action and was injured, but before SP actions, or (c) took no SP action and was not injured. Cases in which the victim reported that SP actions and injury occurred simultaneously were treated as missing, because it was impossible to establish SP-injury sequence in these incidents.

Thus, in this alternative analysis, victims who took no SP actions but were injured were treated as valid cases and coded the same as those who took action and were injured. It is reasonable to treat these two situations as similar if one takes seriously the possibility that nonresistance can provoke an offender into attacking, just as victim resistance might. Passivity can send the message that the offender is free to attack or steal with little risk or difficulty. All cases were included in the alternative analyses, and no SP was treated as the excluded category. Thus, coefficients for SP variables can be interpreted as a comparison between each SP action and taking none.

Table 7 reports results of these analyses. For convenience, the Model 1 column displays the Table 5 All Offenses estimates obtained when no-SP incidents were excluded from the post-SP injury analysis. Model 2 estimates were those obtained when no-SP cases were included and those involving injury were coded the same as those involving SP action and

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subsequent injury. The SP coefficients in the Model 2 column of Table 7 are directly comparable with those in Table 4 because no-SP cases were included in the samples and no SP is the omitted category in both analyses. This comparison directly establishes the effects of taking the sequence of injury and SP actions into account, because this is the only difference between the Table 7 Model 2 analysis and the Table 4 All Types of Crime analysis. Without exception, every SP coefficient moved in a negative direction when sequence was taken into account (Table 7 vs. Table 4). This indicates that past research failing to address SP-injury sequence consistently understated injury-preventing effects of victim resistance, or created a misleading impression of risk-elevating effects.

Table 7. Effect of Including No-SP Cases

	Logit Coefficient (ratio, coef./SE) Injury After SP Action **Model 1**+ No-SP Cases Out *No SP = missing*		**Model 2**++ No-SP Cases In *No SP & injured = Injured after SP action*		**Model 3**+++ No-SP Cases In *No SP & injured = Not injured after SP action*	
Attack with Gun	0.471	(0.55)	-1.051	(-1.23)	0.594	(0.69)
Threat with Gun	-0.517	(-0.85)	-2.055*	(-3.43)	-0.055	(-0.10)
Attack with Nongun Weapon	0.049	(0.12)	-1.570*	(-3.72)	0.296	(0.84)
Threat with Nongun Weapon	-0.993	(-1.51)	-2.687*	(-4.11)	-1.722**	(-2.56)
Attack without Weapon	0.597*	(4.63)	-1.024*	(-9.31)	0.869*	(8.41)
Threat without Weapon	-0.060	(-0.21)	-1.173*	(-4.26)	0.430	(1.93)
Struggled	0.881*	(8.20)	-0.746*	(-8.98)	1.126*	(13.43)
Chased, held Offender	-0.126	(-0.41)	-1.223*	(-4.17)	0.273	(1.10)
Yelled, turned on Lights	0.026	(0.18)	-1.196*	(-8.95)	0.444*	(3.95)
Stalled, Pretended to Cooperate	0.678*	(2.89)	-0.696*	(-3.14)	1.309*	(7.31)
Argued, Reasoned, Pleaded	0.365*	(2.72)	-1.176*	(-9.83)	0.906*	(8.97)
Ran away, hid	-0.424*	(-2.83)	-2.102*	(-16.03)	0.239	(2.13)
Tried to Attract Attention	-0.267	(-0.82)	-1.072*	(-3.41)	0.208	(1.05)
Screamed from Pain or Fear	0.925*	(3.42)	0.670*	(2.47)	0.892*	(5.73)
Other SP Strategies	0.140	(1.03)	-1.713*	(-15.47)	0.628*	(5.57)
Call the Police	n/a		-2.692*	(-10.77)	-0.697*	(-3.84)
N	15,233		22,566		25,528	

* p<0.01 (two-tailed) ** 0.01<P<0.05 (two tailed)

+ In Model 1, omitted (reference) category is "called the police.

++ In Model 2, omitted (reference) category is "no SP."

+++ In Model 3, omitted (reference) category is "no SP."

When no-SP cases are included, all but one of the SP actions have negative coefficients in models of both injury and serious injury (the exception is the ambiguous "screamed from pain or fear"). Thus virtually any form of victim resistance is associated with lower rates of post-SP injury than nonresistance, though there is no longer any clear pattern regarding whether forceful or nonforceful actions are more effective. In Table 7, the appearance of support for the view that crime victims should refrain from resisting crime has essentially disappeared.

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The Model 2 coding procedure, however, biases results against the no-SP option by effectively treating all cases in which victims did not resist but were injured as incidents in which nonresistance provoked offenders to attack and injure the victim. A final alternative analysis was based on the sample with no-SP cases included, but used an opposite coding scheme. In Model 3, no-SP incidents in which the victim was injured were all coded as not injured after SP, that is, were effectively all treated as if nonresistance never provoked offenders to attack and injure the victim. Not surprisingly, this procedure has the opposite effect on estimates, making most SP methods look more likely to result in injury than nonresistance. Because the Model 2 and Model 3 analyses are both based on extreme assumptions about the effects on injury of nonresistance, we prefer the estimates reported in Table 5, in which no-SP cases were simply excluded.

Exclusion of Fatal Incidents

The NCVS does not include crimes in which the victim was killed. Could including them alter these injury findings? In one sense the answer is "no," because there are so few fatal cases. In 2001, the United States experienced, based on NCVS estimates, at least 5,315,500 nonfatal violent crimes. There were in the same year, based on Uniform Crime Reports data, 15,980 fatal incidents—that is, murders and non-negligent manslaughters (U.S. Bureau of Justice Statistics, 2003b; U.S. Federal Bureau of Investigation, 2002). This implies a ratio of 0.00306 fatal per nonfatal crimes. Thus, if fatal crimes had been included in our sample of 27,595 nonfatal violent crimes, about eighty-three cases of fatal injury would also have been included, in addition to the 6,650 nonfatal ones in our sample (0.00306 x 6,650 = 83). The overall injury rate in our sample might therefore have increased, from the observed 24.1 percent (Table 2, All Offenses, percent Injured column) to no more than 24.3 percent ((6,650+83)/(27,595+83)=.243). It is thus highly unlikely that our estimates of SP effects on injury could have been materially affected.

In another sense, data on fatal incidents might lead to different results if they were analyzed separately and SP effects on fatal injury were found to be significantly different from effects on nonfatal injury. While separate analysis of SP in homicides could be worthwhile, there is currently no empirical evidence that victim SP actions increase the chances of the victim being murdered. Nor do we know of any sound theoretical reason why any SP actions would increase the risk of fatal injury but not the risk of nonfatal injury.

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INCLUDING INCIDENTS IN WHICH SP AND INJURY OCCURRED "SIMULTANEOUSLY"

In our analyses of post-SP injury, we excluded cases in which SP actions and injury occurred at the same time, on the grounds that, even if the two events were not truly simultaneous, it could not be determined whether injury followed the SP action. Two options on handling such cases are to include them in the analyses but arbitrarily code them as either (a) cases of SP followed by injury, or (b) cases of injury followed by SP. We repeated the post-SP injury analyses using these two strategies. The results (not shown) were not significantly different from those reported in Tables 5 and 6, except that the coefficient for threat with a gun became significant and negative, indicating that this action is associated with lower rates of injury, other things being equal, than calling the police.

THE CIRCUMSTANCES IN WHICH DIFFERENT SP ACTIONS WERE TAKEN

Although we exploited the rich NCVS dataset by controlling for all available potentially confounding variables, we could not completely avoid the omitted variables problem. It is almost certain that variables are omitted from our models that affect crime outcomes but are also associated with the use of various defensive actions. Even those measured in the NCVS dataset suggest that victims who took some courses of action may have been able to do so only because they faced more favorable circumstances, while other victims may have taken certain actions only because they were compelled to by desperate circumstances.

Table 8 presents descriptive information about the crimes in which various types of protective action were taken. The results indicate that, contrary to the speculations of Reiss and Roth (1993), victims who used weapons, especially guns, faced more dangerous circumstances than other victims. Although weapon users were more likely to be on home territory, they were also more likely to be outnumbered, to face more physically vigorous offenders, to confront offenders with knives, and to face offenders with guns. And, perhaps most important of all, victims who used weapons to attack were more likely to have already suffered an injury: 13.3 percent of victims who attacked with a gun and 19.1 percent of those who attacked with some other weapon were already injured, compared to 7.9 percent of victims using all SP methods combined. Thus victims who used armed resistance experienced lower risks of property loss or serious injury despite facing otherwise more disadvantageous circumstances. If there are still other such adverse circumstances not measured in the NCVS for which we therefore could not control, it suggests that our analyses may understate the injury-reducing effects of armed resistance.

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Table 8. Circumstances of Confrontation by Type of Self-Protection, in Percentage

	Frequency	*Offender Advantage*			*Offender Had*		*Victim Was*		*Location*		*Multiple Self-Protection*
		Age	*Sexual*	*Numeric*	*Gun*	*Knife*	*Male*	*Injured*	*Home*	*Public**	
Attacked with Gun	45	31.8	20.0	28.9	28.9	20.0	80.0	13.3	29.5	35.6	37.8
Threatened with Gun	202	36.1	25.2	24.1	21.3	17.3	71.8	5.0	25.2	42.1	36.1
Attacked w Nongun Weapon	230	23.5	26.2	13.5	6.5	17.0	63.5	19.1	23.9	43.7	44.3
Threatened w Nongun Weapon	232	20.2	31.0	12.1	5.2	15.9	61.6	4.7	27.5	47.0	42.2
Attacked without Weapon	2,661	15.4	22.9	11.4	3.3	7.9	63.5	16.0	16.3	57.3	37.7
Threatened without Weapon	540	20.2	15.9	11.1	4.1	7.4	70.9	6.1	15.0	51.3	57.6
Struggled	4,984	17.5	30.9	12.7	3.8	6.1	57.5	11.6	20.7	51.0	44.8
Chased, Held Offender	517	27.1	19.1	12.2	7.0	6.8	73.7	10.8	21.5	52.4	56.2
Yelled, Turned on Lights	2,492	21.1	52.8	13.6	4.2	5.2	36.3	8.0	29.8	39.4	61.7
Stalled, pretended to Cooperate	535	20.7	33.6	21.8	29.2	8.8	61.7	6.5	18.1	58.5	47.1
Argued, Reasoned, Pleaded	2,700	16.8	37.7	7.4	7.2	5.0	50.3	6.0	23.9	45.7	49.0
Ran Away, Hid	3,807	20.3	39.7	20.2	13.1	6.7	49.8	9.2	13.5	56.2	33.5
Called Police or Guard	1,990	23.4	50.9	11.1	8.0	5.3	37.6	9.5	37.5	30.2	53.7
Tried to Attract Attention	567	18.3	53.9	16.9	7.2	6.5	31.7	11.8	18.2	54.3	76.4
Screamed from Pain or Fear	569	15.8	75.6	11.2	6.5	7.6	13.3	19.9	45.2	30.4	84.9
Other SP Strategies	4,149	24.5	30.5	11.8	6.1	5.6	57.1	5.1	14.4	55.0	26.1
Victim used Weapons in Public	301	27.3	14.3	23.9	12.0	19.0	82.3	6.7	0	100	34.1
Victim used Single SP	14,636	21.0	30.5	13.3	7.1	6.0	57.7	6.7	15.8	54.5	0
Victim used Multiple SP	4,882	19.4	41.8	13.6	7.2	6.8	47.3	11.7	25.6	45.1	100
Victim used Any SP	19,519	20.6	33.3	13.4	7.1	6.2	55.1	7.9	18.3	52.1	25.0
Victim used No SP	8,077	21.8	30.7	13.9	10.8	4.5	56.1	–	15.8	57.1	0.0
Total Incidents	27,595	21.0	32.5	13.5	8.2	5.7	55.4	5.6	17.6	53.6	17.7

* "Near victims own home" or "at, in, or near a friend's or relative's or neighbor's home" were not included.

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On the other hand, victims also often resorted to the least forceful protective measures (cooperate or run) when circumstances were very adverse (offenders had guns). One interpretation is that victims in the most adverse situations may be forced to choose either extremely forceful responses or submission because they believe that less forceful actions would be inadequate.

Are Effects of Protective Actions Contingent on Other Conditions?

It has been suggested that the effectiveness of different defensive actions may depend on a variety of conditions under which they are used. Researchers have explored whether effectiveness depends on the victim's sex, whether the offender is an intimate of the victim (Ruback and Ivie, 1988; Bachman et al., 2002), offense location (home/nonhome, indoor/outdoor), offender intoxication and offender weapon possession (Ullman and Knight, 1993; Bachman and Carmody, 1994), with highly inconsistent results (Bachman et al., 2002). Although there was no strong a priori rationale for testing any one interaction, we tested each of these possibilities by forming multiplicative interaction terms between each of the sixteen protection variables and each of the aforementioned variables on which protective effects supposedly depend, and including each set of sixteen multiplicative terms (involving a single conditioning variable) in the property loss, post-SP injury and serious post-SP injury models. Thus, for example, when we tested whether SP actions interact with whether the crime occurred in the victim's home (ATHOME), the model included ATHOME x GUNATACK, ATHOME x GUNTHREAT, and so on, in addition to the rest of the variables shown in Tables 3-6. Or, when we tested for whether SP actions interact with whether the offender was armed (OFDWEAPON), the model included OFDWEAPON x GUNATACK, OFDWEAPON x GUNTHREAT, and so on, in addition to the rest of the variables shown in Tables 3 through 6.

In the post-SP injury models, the coefficients of these interaction terms were rarely significantly different from zero. No more than one out sixteen interaction variables had a significant coefficient in any one model, and one would expect one coefficient to be "significant" at the .05 level solely as a result of chance, due to the large number of hypothesis tests. Further, the signs of the coefficients were as likely to be contrary to theoretical expectations as consistent with them. In particular, we found no support for the notion that forceful resistance increased injury risks for women when they faced adversaries who were intimates, as Bachman and her colleagues asserted (2002). On the whole, the effects of victim actions on injury do not appear to significantly vary with victim or offender sex,

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victim-offender relationship, crime location, victim's age, offender intoxication, number of offenders or offender weapons.[3]

The only mildly distinct indications of meaningful interactions all pertained to property loss. Defensive actions appeared to be more effective in preventing property loss when the crime occurred in the victim's home or indoors, and less effective when the offender was armed, under the influence of alcohol or other drugs, or was an intimate of the victim. We could, of course, have dredged the data for evidence of three-way and even four-way interactions (for example, SP action by victim-offender relationship by sex by crime type) as well, but there is no strong theoretical rationale for examining any particular interactions of this order. And examining tens of thousands of possible interactions could serve no useful purpose since large numbers of seemingly "significant" associations would inevitably be generated by chance, due to the enormous number of hypothesis tests (see Selvin and Stuart, 1966 for a classic critique of data dredging and ex post facto hypothesis testing).

DISCUSSION

Both past and present evidence has consistently supported the view that a wide variety of defensive actions reduce the risk of a rape attempt being completed (see the extensive review by Ullman, 1997), of a robbery attempt being completed, that is, the robber escaping with the victim's property (Table 3 and the review of earlier robbery studies in Kleck and DeLone, 1993), or of a burglary attempt being completed (Table 3 and Cook, 1991). Skepticism about the wisdom of victim resistance, then, has largely revolved around whether resistance increases the risks of injury to the victim. But based on close analysis of the largest nationally representative sample of crime incidents available, few forms of self-protection and no forms of armed resistance provoke criminals into attacking and injuring resisting victims in substantial numbers of crimes. Impressions to the contrary in past research rely almost entirely on analyses that failed to distinguish between resistance preceding and following injury, or used samples biased by the exclusion of crimes in which victims resisted successfully. Both problems have been reduced in this research, the first because recent versions of the NCVS record the SP-injury sequence, and the second because the NCVS covers a large

3. Incidents with victims who used weapons in public places would seem to be especially interesting because these victims may carry weapons in public habitually. We found, however, that these incidents looked pretty much the same as other incidents involving armed self-protection, except, of course, that they all occurred in public places (see Table 8).

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probability sample of crimes, at least among those victims who are willing to report them to government interviewers.

Once these sources of distortion are reduced or eliminated, little evidence remains for the claim that resistance angers offenders into attacking victims. When victims who resist are hurt, it was almost always injury that came first. Post-resistance injury occurs in fewer than 3 percent of personal contact crimes in which victims resist. The few injuries that are inflicted are usually no more serious than cuts and bruises. These conclusions apply across all crime types and do not depend on the victim-offender relationship, crime location, victim or offender sex, victim's age, offender intoxication or offender weapon possession.

The NCVS does have some important limitations. Cases of successful victim resistance are probably underrepresented in NCVS samples because respondents tend not to report incidents in which they suffered no harm. This is probably especially true when their protective actions involved the use of unlawfully possessed weapons. Victim resistance may therefore be even more effective than it appears in NCVS samples. Also, because victims are interviewed as long as 6 months after the crime, they may forget or misrecall more information than victims speaking to police or victim counselors immediately after the event. We are, however, not aware of any evidence that such recall failure would distort estimates of the relative effectiveness of SP actions.

CONCLUSION

All evidence is flawed, and there will always be more evidence developed by later research. Thus one can always cite these facts to justify refraining from drawing any firm conclusions from research, and issue the standard call for more research. While more research is always good, from the standpoint of those who need information to make real-world choices in the near term, this is not a helpful position for scholars to adopt. We believe that as long as some sound research has been conducted, scholars should draw conclusions, accompanied by appropriate caveats about the limits of the data, based on the best evidence available at the time. This seems reasonable if for no other reason than that this is the only course scholars will ever be able to follow, regardless of how much more research is done or how high its quality. Evidence will never be either perfect or complete, so conclusions based on imperfect and incomplete information are the only kinds of conclusions that can ever be drawn.

One might take the position that offering advice to prospective victims is risky because the advice might prove ill-founded, and that refraining from offering advice is therefore more prudent. Refraining, however, has its own consequences. Failing to provide advice that, if followed, would

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have helped save a life can cost a life. Likewise, failing to offer advice that would have blocked a rape, prevented crippling injury or otherwise averted harm can passively contribute to those harms coming to pass. Declining to make recommendations may seem like a course that entails less responsibility, but this impression is illusory, because choosing to not act can have consequences as serious as choosing to act. A wealth of evidence indicates that nonresistance is not always the safest course of action for crime victims, implying that some prospective victims who continue believing that nonresistance is the safest course will be hurt because no one did anything to correct their misapprehensions.

It is in this light that we offer tentative advice to potential victims. While there are exceptional situations, victim resistance is usually either successful or inconsequential, and on the rare occasions that it is harmful, it is rarely seriously so. Therefore, unless there are circumstances that clearly indicate resistance will lead to significant harm, the evidence reported in this paper indicates that some form of resistance should be the path generally taken. This does not mean resistance always works, or that it can, by itself, make victims completely safe, since violent crime is dangerous for reasons having nothing to do with victim actions. Rather, it means that resistance will generally either make things better for the victim (for example, less chance of rape completion or property loss) than they would have been without resistance, or do no harm.

Which victim actions produce the best results will depend on the resources and options available. Many actions are impossible in certain circumstances, which undoubtedly explains why victims sometimes do not act. Nearly all forms of resistance help avert property loss. Research indicates that most also help rape victims avoid rape completion. Regarding impact on injury, some research appeared to indicate a pattern in which nonforceful resistance was more effective than forceful, and the latter was even counterproductive. Once one takes account of the sequence of injury and SP, however, no such pattern is evident. Various kinds of forceful victim protective behavior, such as threatening the offender with a gun or other weapon, show the strongest negative coefficients, though none are significant. A conservative interpretation would be that armed and other forceful resistance does not appear to increase the victim's risk of injury. Most of the SP tactics that appear to have higher risks than calling the police are nonforceful: stalling, arguing and screaming from pain or fear (though this may reflect an effect of injury rather than a cause). Resistance with a gun appears to be most effective in preventing serious injury, though this finding is not statistically significant due to the small number of reported gun uses.

Although the data strongly indicate that armed resistance is the most effective tactic for preventing property loss, it is not as clear which SP

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strategy is most effective in averting injury. This is partly because injury following resistance actions is so rare that there is little room for injury rates to vary much across types of victim action. But there is also ambiguity because the circumstances under which victims adopt SP actions differ substantially across types of resistance. Armed resistance, for example, tends to be adopted under circumstances that were more perilous for the victim to begin with, which could obscure some of the injury-preventing effects of these SP actions. While NCVS data allow us to control for some of these circumstances, they do not permit control for all of them. It is reasonable to expect that unmeasured circumstances would tend to show the same patterns as NCVS-measured ones, with the same effects on estimates of injury-preventing effects. Future research should more completely account for crime circumstances that advantage or disadvantage victims in avoiding injury.

While some forms of resistance, mostly nonforceful, appear to increase the risk of injury, the injuries that result are almost always no more serious than bruises and cuts. And still other victim actions have no significant effect on injury. These relative differences, however, are less important than the more general fact that serious injury almost never follows resistance, of any kind, in any type of crime. That is, because resistance appears to be effective in averting further significant harm, or is at worst inconsequential, the question of which particular types of resistance are more effective becomes arguably secondary.

For some, to say that resistance almost never leads to victim injury is not a good enough assurance. The NCVS cannot detect incidents in which victim actions lead to their death. It could be argued that if resistance leads to death in even a few crimes, then resistance is tragically foolish behavior even if it often prevents rape completion, nonfatal injury or property loss. This argument, however, is strictly conjectural. There is no sound empirical evidence that resistance does provoke fatal attacks. The evidence we do have indicates that resistance almost never provokes attacks resulting in serious (nonfatal) injury. The argument is also unrealistically one-sided, because it ignores the possibility that resistance can save lives. Invoking the value of human lives does not necessarily favor those who counsel nonresistance or decline to offer advice any more than it favors those who counsel resistance.

It also seems unlikely that a given form of victim resistance, such as with a gun, would have no impact on serious injury (as found in this research) yet increase the risk of fatal injury. One might nevertheless speculate that offenders confronted with gun-wielding victims might believe that only killing the victim would ensure their own safety, resulting in killings of such victims but few nonfatal injuries. There should be at least a few offenders in this situation who would be satisfied with inflicting

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incapacitating yet nonfatal injury, in which case we should have found an effect of victim gun use on serious nonfatal injury. We did not. In any case, we know of no empirical evidence that any significant number of victims have been killed after using weapons in self-defense.

It is possible that a given form of victim resistance is already being used by crime victims in all the circumstances in which it is effective and safe to do so, and that if those SP actions were taken in different circumstances they might produce more harmful outcomes for the victim. Our tests of interactions suggest that various modes of resistance do not vary significantly in their effectiveness across crime circumstances, insofar as we are able to measure circumstances using NCVS data. Although this tends to undercut the hypothesis that SP actions would be less effective were they adopted in different circumstances, such evidence cannot definitively rule out any hypothesis concerning SP actions taken under conditions substantially different from those of the past.

Future research might bring better evidence that contradicts these conclusions. At present, however, the best available evidence indicates that victim resistance to crimes is generally wise.

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