THE SITUATIONAL ROLE OF FIREARMS IN VIOLENT ENCOUNTERS

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William Wells, Ph.D.

Southern Illinois University - Carbondale
Center for the Study of Crime, Delinquency, and Corrections
Carbondale, IL 62901

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The relationship between firearms and violence is well established and is widely accepted. Proposed explanations for this relationship, however, are not well established but are controversial. These explanations are important because firearm policies are rooted in these proposals. One prominent argument claims that firearms are different from other weapons in such a way that firearms independently increase the chances that violence will occur in their presence. A second prominent explanation claims that the close association between guns and violence exists because gun possessors have stronger intentions to injure their opponents than people who do not possess and use firearms. A third hypothesis claims that guns are a power source that permit their possessors to carry out their intentions to avoid violence or engage in violence.

Empirical research that has attempted to understand the relationship between firearms and violence has primarily focused on aggregated units while comparatively few studies have focused on micro-level relationships. In order to understand the independent effects of guns, situation-specific intentions must be measured and controlled. This is something that previous research has not accomplished. This project uses self-reported data gathered through interviews with male prisoners. Direct measures of gun use and individual intentions to injure allow the independent effects of guns on three situational outcomes to be estimated. Hierarchical statistical models are used to isolate gun effects from the effects of personal influences and situation-specific intentions.

Results show that gun effects do not depend on whether or not the user intends to injure an opponent. Guns do have, however, significant effects independent of the effects of individual intentions and of personal influences. Gun possession increases the probability that the possessor will attack; gun attacks significantly decrease the chances that a target will be injured; and, gun attacks increase the likelihood that inflicted injuries will be severe. These findings both confirm and contradict the results of previous research. Implications for policy, theory, and research are discussed.

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Introduction

For over three decades, scholars have been trying to determine how guns affect the dynamics and outcomes of social situations. Although recent empirical research has made significant contributions to our knowledge, the question remains unresolved. This dissertation attempts to isolate the independent effects that weapons and individual intentions have on the dynamics and outcomes of violent and potentially violent situations. This project will contribute to expand upon our existing knowledge by 1) using hierarchical statistical models to isolate weapon effects on the likelihood of attacks *and* injuries in a sample of violent and potentially violent incidents; 2) isolating the independent effects of individual, situational intent; 3) using a direct measure of individual, situational intent, indirect measures of individual, situational intent, situational weapon use, relevant situation-level control variables, and relevant person-level control variables; and (4) recognizing the interactionist perspective as an important approach to studying violence.

Scholars generally accept the notion that there is a close association between lethal violence and firearms, but disagree about the proposed explanations for the relationship. The independent, micro-level effects that firearms have on the likelihood an actor will attack an opponent, the effects that firearm attacks have on the likelihood an aggressor will injure an opponent, and the likelihood that opponent injuries will be severe are not entirely understood. The existing body of empirical research is limited for several reasons.

First, research has not been able to adequately measure variables that are critical to understanding weapon effects, such as individual, situational intentions to harm victims.

While this body of research has emphasized findings about weapon effects, empirical research has not given significant attention to the confounding effects of individual, situational intent to harm. Second, studies have oversimplified the issue by focusing attention on the injury outcomes of violent encounters, ignoring the effects that weapons have upon whether or not a weapon possessor will make a physical attack. A broader conception recognizes that in order to understand the full effects of weapons, it is necessary to look at multiple outcomes.

Third, previous research has not disaggregated person-level factors from situation-level factors as the social interactionist theoretical approach dictates (see Campbell and Gibbs 1986). This approach is necessary if we are to understand the independent effects of weapons because both situational and individual factors are believed to play a determining role in the incident outcomes. Finally, weapon effects in pure assaults have largely been ignored, research has almost exclusively focused on robbery events. This is a significant gap in our knowledge because theory and empirical findings indicate that assaults and robberies differ in important ways. The project proposed here will attempt to improve upon each of these limitations.

The Research Question

It is generally accepted that there is a close relationship between guns and violent crime and for over three decades scholars have been trying to explain this relationship. In 1996 nearly 68 percent of all murders and nonnegligent manslaughters were firearm-related, approximately 42 percent of all robberies were firearm-related, and close to 29

percent of all violent crimes were firearm-related (Maguire and Pastore 1998). A 1996 Bureau of Justice Statistics report (Zawitz 1996:5) indicates that nearly 30 percent "of the almost 328,000 state prison inmates serving time for a violent crime in 1991" carried a gun when they committed the offense. Estimates indicate that between 30,000 and 40,000 deaths each year are firearm-related, including accidents, homicides, and suicides (Anderson, Kochanek, and Murphy 1997; Kleck 1991:table 1.1; Kleck 1997:table 2.7).

Furthermore, recent sophisticated studies estimate that citizens use guns defensively to thwart criminal attempts approximately two and a half million times each year (Kleck and Gertz 1995:164) to nearly five million times (Cook and Ludwig 1998:123) each year. The issue of defensive gun use has largely been ignored until recently (Kleck 1997:147), the research is controversial (Kleck 1997:154-159; Reiss Jr. and Roth 1993:264), and the body of research provides diverse estimates of the frequency of defensive gun use (Kleck and Gertz 1995:157). Nevertheless, there is no denying that citizens commonly use guns to defend themselves, others, and/or their property against criminal attempts.

Despite the fact that the relationship between firearms and violence is documented and accepted, the exact nature of the incident-level relationship between gun use and violence remains less clearly understood. Kleck (1997:217) provides direction for this line of research:

> The central question is not whether there *is* a positive association between violence and the availability or use of guns, but rather *why* there is this association, and especially

> whether it reflects, at least partially, a violence-increasing effect of guns. Little purpose is served by endlessly replicating the positive association without advancing our understanding of the degree to which it is due to the causal effects of guns on violence.

Similarly, Cook (1991:18) indicates that the processes that lie behind the assumed violence-enhancing weapon effects "have not been completely analyzed or documented." The purpose of this project is to enhance the understanding of micro-level gun effects.

In proposing an explanation for the association between guns and lethal violence, Zimring (1968) places causal importance on the type of weapon in determining whether an assault remains an assault or becomes a homicide. His explanation, known as the "weapon instrumentality" effect, argues that the type of weapon used in an incident is largely responsible for the outcomes of that incident. Specifically, Zimring (1968) argues that it is a firearm that makes situations more dangerous. Even though Cook (1991) acknowledges that the type of weapon present in a situation is not the only factor that determines the likelihood someone will die in a violent situation, he seems to indicate that the type of weapon present is the most important, independent factor when he (Cook 1991:18) writes that

> In sum, the weapons-specific differences in fatality rates in assaults as well as for robbery have been clearly established; more lethal weapons are associated with higher fatality rates. Further, there is persuasive evidence that these differences in fatality rates are, in large part, the direct consequence of the differential lethality of the weapons, rather than simply a statistical artifact of some other causal process (such as differences in intent that influence both weapon choice and outcome).

Along these same lines, Block (1981:752) asserts that increases in the number of robbery and assault-related homicides in Chicago from the mid-1960's through the early 1970's were fueled by "shifts in killings with a gun rather than by shifts in the nature of the crime or changes in crime or community demography." These explanations imply that the presence of a firearm in a conflict encounter makes the situation inherently more dangerous than situations that involve other weapons or no weapons at all, independent of other factors, such as individual intentions. Based on this position, firearms should increase the likelihood that someone will be seriously injured or killed and individual intentions should be unimportant.

An alternative explanation emphasizes the importance of the weapon possessor's intentions in determining the outcomes of a violent incident. Wolfgang (1958:83) argued "that few homicides due to shootings could be avoided merely if a firearm were not immediately present, and that the offender would select some other weapon to achieve the same destructive goal." In other words, this position and the fact that Wolfgang (1958:83) concluded that "*few* homicides" (emphasis added) could be averted implies that when effective tools, like firearms, are unavailable, individuals will make stronger efforts and succeed in following through on their intentions to do harm (see Felson and Messner 1996:537; Kleck 1997:233, 235). This leads to the assumption that intentions have the most significant effect on the outcomes of violent situations and that weapon effects will be trivial when individual intentions are taken into account.

Yet another position contends that both the intentions of the weapon user *and* the

properties of weapons themselves are important determinants of the outcomes of conflict situations. Kleck and colleagues (Kleck 1997; Kleck and Bordua 1983, Kleck, 1991 #47) and Cook (1987:372) give importance to both individual intentions and weapons in determining violent outcomes. This line of reasoning assumes that people who intend to seriously injure or kill targets will be more likely to use more lethal weapons (Cook 1987:372; Kleck 1997:229), suggesting a spurious relationship between guns, individual intentions, and the outcomes of violent incidents. In sum, the difference in injury outcomes across situations is partially a function of the properties of the weapon and is partially a function of the intentions of the person who possesses that weapon. Specifically, since gun possessors are expected to have stronger intentions to harm, when the intentions of the gun possessor and user are controlled the violence-promoting effects of firearms in violent situations should be reduced, but should not entirely disappear (Kleck 1991:165; Kleck 1997:229-231).

Further elaborating on the relationship between individual intentions and weapon possession, researchers explain that a firearm furnishes its possessor with power that serves to increase the likelihood that the possessor will be able to successfully carry out his or her intentions (Cook 1991; Felson and Messner 1996; Kleck 1997; Kleck and McElrath 1991; Tedeschi and Felson 1994). This explanation suggests that the effects of guns in conflict situations *depend* on the intention of the weapon possessor (Felson and Messner 1996). Firearms allow the possessor to seriously injure or kill an opponent and firearms allow the possessor to avoid violence (Kleck 1997; Kleck and McElrath 1991;

Tedeschi and Felson 1994). For instance, a robber's threat with a gun is likely to be credible enough to make an actual attack unnecessary. This explanation implies that weapon effects and individual intentions should *interact* in affecting situational outcomes. The effect of a gun on attack and injury outcomes will not be constant across different levels of intent to harm. The effect of a gun will depend on what the user/possessor intends to do.

Summary

The purpose of this study is to enhance the understanding of micro-level gun effects. Zimring (1968) argues, specifically, that the presence of a firearm in an assault increases the probability that lethal injuries will result, independent of the gun user's intentions. If this argument is correct, then the probability of death is greater in gun present situations than those with no weapon and those with less lethal weapons, regardless of the gun possessor's intentions. On the other hand, Wolfgang (1958) argues that the actor's intention to inflict harm is the most important factor that affects the dynamics and outcomes of violent incidents. This suggests that the effects of guns will likely disappear when intentions are controlled.

Next, arguments and empirical research suggest that both weapon type and individual intentions are important determinants of situational outcomes. The relationship between violence, individual intentions, and the presence and use of guns is spurious in such a way that the independent effect of a gun is diminished, but still important, when individual intentions are held constant. Finally, scholars propose that firearms provide

their possessors with a degree of power that allows them to get what they want in social encounters. The effect of a gun on the likelihood of physical attacks and on the likelihood that targets will be injured depends on what the possessor hopes to accomplish. Existing research has not furnished adequate evidence to assess these proposed explanations and, thus, not enough is known about the micro-level effects that firearms have in violent events.

Theoretical Framework

The theoretical framework for this study is grounded in the social interactionist perspective (Campbell and Gibbs 1986) and coercive action theory (Tedeschi and Felson 1994). Both approaches provide a framework for understanding the role that weapons play in shaping the dynamics and outcomes of violent and potentially violent encounters. Social interactionism, generally, stresses the importance of personal variables *and* situational factors in the study of violent encounters, rather than emphasizing the importance of one over the other. The attributes of the person and of the situation presumably determine the dynamics and outcomes of situations. Coercive action theory adopts a social interactionist position in assuming that situation- and person-level variables affect incident outcomes. The theory makes a contribution by identifying the important factors that affect individual decision making processes, and ultimately individual behaviors, in conflict situations.

Social Interactionism

Does human behavior result from external or internal processes? To ask whether violent behavior is the product of personal or situational characteristics is to bring up a historical debate (Pervin 1986). Campbell (1986) argues that people exhibit variability in the ways that they react at different times and in different situations. Pervin (1986:19) summarizes recent interactionist research by stating that "there is evidence of considerable diversity or variability of behavior across situations." Although interactionism integrates personality-based explanations of violent behaviors with social explanations, Campbell

(1986:7) warns that situationalists should not expect to find situational variables exhibiting the same influence across all individuals because individual differences are important.

A key assumption of the interactionist approach is that the dynamics and outcomes of violent encounters are *not* predetermined. Rather, actors' actions and reactions partially determine what happens during violent episodes. In other words, people respond to what is going on around them. This recognition has two important implications: 1) a person may enter a situation with a single intention but never act on that intention due to situational characteristics, and 2) unanticipated intentions can arise during the course of an incident. Empirical research supports the notion that individuals' actions and reactions, as well as other situational factors play a role in what transpires in violent episodes (Block 1981; Felson 1978; Felson, Ribner, and Siegel 1984; Felson and Steadman 1983; Luckenbill 1977).

Tedeschi and Felson (1994) recently constructed a theory that explains the aggressive behaviors that occur in social interactions, relying upon theoretical work from psychology, sociology, and criminology. The theories from which they borrow are consistent in assuming that aggressive behaviors are aimed at achieving goals and that social psychological processes are responsible for behaviors. Their theory provides a foundation for this project.

Coercive Action Theory

Building on the tradition of social interactionism, Tedeschi and Felson (1994) constructed a theory of coercive action that recognizes the importance of situational

factors in determining the dynamics and outcomes of social encounters. "The theory assumes that harm doing is goal-oriented behavior that develops out of social interactionist processes" (Tedeschi and Felson 1994:155). Dissatisfied with common conceptions of "aggression," the authors formulated a theory that captures a majority of the phenomena explained by traditional aggression theories, as well as phenomena that those theories do not explain, such as child discipline. They identify and critique two common definitions of aggression, behavioristic definitions and attributional definitions, before offering a replacement term for aggression, coercive actions, and prior to elaborating their theory.

Behavioristic definitions of aggression focus on actual behaviors while ignoring actors' internal and cognitive processes. Aggressive behaviors, according to behavioristic conceptions, are those which "produce a noxious stimuli to another" person (Tedeschi and Felson 1994:161). Tedeschi and Felson (1994) argue that this definition of aggression is too narrow and, at the same time, too broad. In the sense that the definition is too broad, accidental behaviors that result in a noxious stimuli to another person are defined as aggressive. For example, an accidental shooting or the accidental slamming of a friend's finger in a car door are defined as aggressive behaviors. On the other hand, actions that are intended to inflict harm but fail to succeed are not defined as aggressive. For instance, when a home owner shoots at a trespasser but misses, the action is not considered aggressive, no noxious stimuli was delivered.

Attributional theories of aggression appear to overcome the limitations associated

with the behavioristic perspective by considering the actors' intentions. Aggression is defined as any behavior that is taken with the intention of inflicting harm. Accidental behaviors that harm someone are excluded from attributional explanations, while actions that are taken with the intention of doing harm, but do not succeed, are included in the attributional definition.

Tedeschi and Felson (1994:163) point out, however, that attributional theories lack "an adequate definition of *intent* or a set of rules for establishing when a person has harmful intentions." Even though they acknowledge that Kaufmann (1970) offers a well-grounded definition of intent, Tedeschi and Felson (1994) argue that it is not sufficient when used to explain aggression. Kaufmann (1970) described that intentional, aggressive actions are those taken with the expectation that they will harm a target. This definition is not adequate for characterizing aggressive behaviors because many behaviors are expected to inflict pain on a target when the harm is unintended. Tedeschi and Felson (1994) provide a useful example to illustrate this deficiency. Dentists' procedures are carried out with the expectation that the patient will endure some pain. That pain, however, is a by-product of the procedure that is beneficial to the patient. The pain is not the means to the desired outcome, but the dentist still expects to inflict pain.

Tedeschi and Felson (1994) provide an improved definition of intentional actions that can be adequately applied to the study of aggression. An intentional act is one "performed with the expectation that it will produce a proximate outcome of value to the actor" (Tedeschi and Felson 1994:164). Furthermore, proximate, or immediate, outcomes

are valued because actors believe these results will produce terminal, or distant, outcomes that are desired. As an illustration, a robber may shove a victim to the ground in order to gain compliance (proximate goal) and then obtain the victim's property (terminal goal). Compliance is the proximate goal that will allow the robber to achieve the terminal goal, obtaining the property. The harm that the robbery victim suffers in such a case is incidental to the robber's proximate and terminal goals, similar to the harm that dental patients suffer. The injuries are not the means to the robber's ends, compliance is the means to the end. They acknowledge that it is possible for actors to harm a target without intending to do so, and that it is possible for a target to emerge from an encounter unscathed, even though an actor intended to inflict harm. "The ultimate goal behind an act of violence is not necessarily the victim's death or injury, but rather may be money, sexual gratification, respect, attention, or the humiliation and domination of the victim" (Kleck 1997:218). Terminal goals are not necessarily connected to the immediate situation. Respect and admiration from peers is a terminal goal that may be realized days, weeks, or months after the violent episode has occurred.

The intentions of an individual in a specific situation differ from the individual's underlying motivation. Tedeschi and Felson (1994) use the language Schutz (1967) relied upon to distinguish intentions from motives. "Intent" refers to the outcome the actor desires while "motive" refers to the reason why the actor values that outcome. Further, "Schutz (1967) stated that intent refers to the 'in order to' reason while motive refers to the 'because' reason" (Tedeschi and Felson 1994:165). The distinction between

motivations and situationally specific intentions is significant. They (Tedeschi and Felson 1994:156) identify three primary social motivations that lie behind the use of coercive actions: 1) to obtain some benefit, 2) "to express grievances and establish justice," and 3) to assert or defend social identities. These motives do not necessarily mean that situationally-specific intentions to do harm exist. These motives, or terminal goals, can be achieved by an actor who does not intend to harm someone in an incident.

By arguing that intentions and motivations are associated with *all* human behaviors and that all harmdoing is instrumental, Tedeschi and Felson (1994:155) blur the distinction between angry or expressive aggression and instrumental aggression. "The theory assumes that harmdoing is goal-oriented behavior that develops out of social interactionist processes" (Tedeschi and Felson 1994:155). Furthermore, actors are claimed to be decision makers in social situations, not puppets on the strings of purely external and unconscious processes. The costs, benefits, and probabilities of both proximate and terminal outcomes play a role in determining the actions people take in social encounters.

Coercive Action: A coercive action is one "taken with the intention of imposing harm on another person or forcing compliance" (Tedeschi and Felson 1994:168). Coercive action theory concerns itself with *all* harmdoing behaviors, including street fights between gangs, parents disciplining children, and domestic assaults. According to the authors, the language of coercive actions, rather than aggressive actions, implies that these behaviors are aimed at changing their targets in some way. The notion that actors attempt to change their targets is referred to as social influence attempts. Social influence

attempts are "requests and commands by which an antagonist attempted to influence a target to do something or refrain from doing something" (Felson, Baccaglini, Ribner, 1985:93). The change affected in the target leads to the actors' attainment of some goal (Tedeschi and Felson 1994:355).

There are three types of coercive actions that change targets: threats, punishments, and bodily force. Threats are communicated actions of intent to harm and can be contingent or noncontingent. Contingent threats are aimed at obtaining compliance with the possibility of harm for noncompliance. For instance, a robbery victim is told to hand over his money or else he will be stuck with a knife. Noncontingent threats, on the other hand, are used to instill fear or to degrade. For example, a man tells his wife that he is going to slap her. Compliance is the desired goal when a contingent threat is made, but not the goal of a noncontingent threat. Second, punishments are behaviors carried out with the sole intention of inflicting harm on a person. In other words, inflicting harm is the immediate goal. Noncontingent threats, therefore, can be considered a non-physical punishment (Tedeschi and Felson 1994).

Finally, bodily force is used to limit the actions of people or to force certain actions, but is not used to punish. Bodily contact or physical force may be used to elicit compliance from a victim, and the harm inflicted may be incidental to the physical contact. For instance, shoving a robbery victim to the ground in order to prevent their escape may produce incidental injuries. Similarly, Felson and Messner (1996) argue that harm may result from a robbery, even though injuring the victim is not typically the goal.

Decision Making: Individuals in social situations are assumed to be motivated to achieve goals (Pervin 1986; Tedeschi and Felson 1994), implying that decision making processes are important. Actors follow decision making processes rather than behave reflexively and uncontrollably (Tedeschi and Felson 1994). Tedeschi and Felson (1994) argue that people examine their behavioral alternatives in situations before deciding how to act. Furthermore, actors evaluate their behavioral options and consider situational variables in the evaluation process. But rather than assume that people are completely rational, Tedeschi and Felson (1994) advance the notion of bounded rationality. This notion assumes that people make the best choices from the options they perceive in their current circumstance. "*Rationality* in this context means that if the observer considered the same alternatives, had the same values, and estimated the same probabilities and costs as the decision maker, the observer would decide in the same way" (Tedeschi and Felson 1994:179). Even though behaviors may seem reflexive to an observer, the theory assumes that people make the best choice from among their perceived options. The important point is that situational elements enter actors' decision making processes during social encounters.

Significant elements in the decision making process include the actors' relative level of coercive power, the value of outcomes to the actor, the likelihood of obtaining those outcomes, the costs associated with certain actions, and the likelihood of suffering those costs. Furthermore, actors' behaviors are claimed to be partially responsible for the progression of coercive interactions. "Coercive encounters usually involve a series of such

decisions as actors respond to the changing behavior of the antagonist" (Tedeschi and Felson 1994:177). These factors play a part in actors' decision making processes, and thus, their situational behaviors.

Two basic elements compose the decision making process: alternatives are generated and alternatives are evaluated. People choose how to behave from alternatives, even though the choice may be between only two options, such as fight or flight. Tedeschi and Felson (1994) provide a general theory of decision making as it applies to the use of coercive actions. Cognitive scripts serve as behavioral guides that assist people in generating alternative courses of action. In social circumstances people have information stored in their memory about how to behave. This information assists people in determining the behaviors that are appropriate and inappropriate in various settings. When scripted behaviors are recalled and successfully carried out they become reinforced, which leads to habitual behaviors. Nonetheless, habitual behaviors still involve a decision making element. The script that produces habitual behaviors has been evaluated in the past, has been reinforced, and becomes dominant. Nevertheless, actors can override their dominant scripts and choose an alternative action. Coercive actions are more easily activated by people who have fewer behavioral sets from which to choose. Generating behavioral alternatives is the first stage in the decision making process, evaluating those alternatives is the second stage.

Several factors are important in the evaluation stage. Sunk costs add value to coercive actions. An actor may suffer some loss, either physical or material, and then

attempt to redeem that loss with coercive actions. Similarly, an actor may have made an investment in a long-running feud and then justify that investment with coercive actions. An actor who has invested energy into some ongoing dispute may attack the opponent because of his investment in the ongoing conflict. Similarly, physical attacks can provide the incentive for a retaliatory strike. In such an instance, the actor may attempt to recoup some cost or loss. In sum, "there is hope that the next round of actions will turn the tide in one's favor and allow one to recoup or justify prior losses" (Tedeschi and Felson 1994:185).

A second value associated with the use of coercive action and the severity of the action is the value associated with the behavior itself. In other words, the value people place on making coercive actions partially determines whether these actions will be taken and the severity with which they will be made. Some people may find inherent value in violent coercive actions. Katz' (1988) discussion of street elites and bad asses illustrates that people place value on the process of acting violently rather than non-violently. Other people, however, will hold negative views of violent behaviors and place value on alternative, non-violent actions and scripts.

Costs, like benefits, associated with behavioral alternatives play a determining role in how people behave. Tedeschi and Felson (1994:187) state that people "consider different types of costs before deciding to use coercion." Opportunity costs associated with behaviors include time, effort, and the amount of resources to be spent. For example, a robber may avoid injuring a victim because the victim might be essential in permitting the

robber to complete the crime. In certain instances, the victim is necessary in order to open a safe. The opportunity cost in this instance is the extra effort the robber would have to make if the victim were injured and unable to provide assistance. On the other hand, violence may be preferred to threats when an offender believes compliance will not be gained. The robber may open an encounter with an attack rather than wasting time attempting to convince the victim to hand over property.

Additional costs that are important in the decision making process are costs that targets and third parties can impose (Felson and Messner 1996). Robbery targets may react to a threat with a defensive, physical attack. Thus, an offender who expects resistance might choose violence over a threat or might employ a surprise attack and avoid a verbal exchange. Surveys of convicted offenders indicate that a fear of victim retaliation influenced their behavior (Wright and Rossi 1986). On the other hand, offenders who anticipate a victim will comply are unlikely to use violence because the perceived likelihood that they will suffer target-imposed costs is low. Target-imposed costs are not only physical attacks, targets can invoke the criminal justice system by calling the police for example. For this reason a robber may decide to kill a victim in order to avoid being identified and apprehended (Felson and Messner 1996).

Similar to target-imposed costs are those costs imposed by third parties. Third party costs can inhibit or facilitate violence. Tedeschi and Felson (1994) distinguish between formal and informal costs imposed by a third party. Punishments by the criminal justice system are an example of formal inhibitors, while peer attitudes are an example of

informal costs. The attitudes of third parties may favor violence (Katz 1988) or disapprove of it. For instance, a husband may slap his wife in a public setting in order to avoid ridicule from friends. Non-violent behaviors can also result in ridicule from respected peers (Katz 1988) and, on the other hand, violent behaviors can produce negative reactions from peers. In addition, bystanders can behave in ways that facilitate or escalate violence and also behave so that violence is inhibited. For instance, bystanders can urge actors in the conflict to back down, bystanders may intervene in a fight by restraining combatants, and bystanders can facilitate violence by urging actors to act violently.

Weapons: Relative levels of power in social encounters affect the dynamics and outcomes of the situation. Tedeschi and Felson (1994) define coercive power as the ability to cause change due to threats, punishments, or bodily harm. Resources, such as the possession of a weapon and the presence of allies, determine actors' relative level of coercive power in a situation. Simply put, a person with greater coercive power than another person or persons, will find that the likelihood that valued outcomes will be achieved are increased and that the likelihood that costs will be incurred are decreased.

Weapons are important sources of power that affect decision making processes because "the possession of weapons alters the power equation in violent encounters" (Tedeschi and Felson 1994:202). They (Tedeschi and Felson 1994:202) indicate that this is the reason why a firearm can be called the "great equalizer." Weapon possession, thus, affects the behavioral decisions that actors make. Kleck (1997) argues that the use of

weapons partially determines whether conflicts escalate to actual violence, whether attacks are completed, and whether victims suffer serious injuries or death. The possession of a weapon increases the chances that actors will be able to successfully carry out their intentions and achieve their desired goals. A power advantage allows a person to punish a target. Also, a power advantage permits an actor to obtain compliance without the use of physical force.

Not only does coercive power determine whether or not actors decide to make coercive actions, but the distribution of coercive power also affects *when* people make threats and attacks in violent encounters. Less powerful actors might use "preemptive strikes in anticipation of attack" (Tedeschi and Felson 1994:204); they may attack to show an unwillingness to cooperate with the demands of a more powerful person; and, they may use attacks in conjunction with threats to show that the threat is credible and will be backed up if necessary. Threats from powerful actors will not require a show of force like those from weaker actors.

Summary

Social interactionism and coercive action theory provide a framework for understanding the effects weapons have in violent and potentially violent encounters. The social interactionist position claims that person- and situation-level factors shape the dynamics and outcomes of social encounters (Campbell and Gibbs 1986). Coercive action theory explains a wide range of human behaviors and argues that people make conscious decisions about how to behave in social encounters. Most important to this study, the

theory posits that actors' intentions and actors' weapon possession play important roles in the decision making process that takes place during the encounter. Specifically, the theory posits that the effects of weapons on the dynamics of social encounters will depend on the intentions of the weapon possessor. The possessor of a weapon will find that intentions can be successfully carried out.

Review of Past Research

Although there is a wealth of existing research that has paid attention to the relationship between guns, crime, violent crime, and gun policies (see Cook 1991; Kleck 1997; Loftin, Heumann, and McDowall 1983; Lott Jr. 1998; Wright and Rossi 1986; Zimring and Hawkins 1997), relatively little work has been done to isolate micro-level firearm effects. This is a significant deficiency in our knowledge because it is necessary to examine micro-level processes if we are to gain a more complete understanding of the etiology of violence. Examining descriptive information, such as frequencies, percentages, and simple correlations, only permits a cursory understanding of the relationship between firearms and violence. Conclusions drawn from these descriptive patterns are controversial and the uncovered patterns are open to more than one interpretation.

Furthermore, because important public policies and policy debates concern firearms, it is beneficial to precisely understand the micro-level role that firearms play in violent encounters. An illustration will highlight the importance of this point. A sentencing policy based on the assumption that guns are independently responsible for causing serious injuries and deaths when they are present and available in social situations would likely be different from a sentencing policy that was based on the assumption that guns are unimportant factors in violent crimes. In the first sentencing policy scenario, offenders who possess guns might receive longer sentences than if no gun was present. In the second policy scenario, there would be no graduation of sentences based on the type of weapon the offender used. Micro-level studies of firearm effects will provide evidence

on which the above assumptions used in the hypothetical policy choices can be evaluated.

As indicated, existing knowledge about gun effects is limited. Research tells us that there is a close relationship between guns and lethal violence, but empirical evidence has not provided adequate support for the proposed explanations. What is missing is significant attention to the micro-level processes in violent encounters that permit an understanding of how a firearm shapes the dynamics and outcomes of the incident.

Existing micro-level research efforts have provided valuable information about firearm effects in conflict situations. Nevertheless, this body of work is open to criticism that renders its conclusions questionable. Studies show that the presence of a weapon appears to play a determining role in whether an offender will attack as well as determining role in the types of injuries that victims suffer, if any. Research further indicates that whether a robber makes a physical, aggressive initial move or initiates the robbery with a verbal command partially depends on whether or not the offender possesses a weapon and on the type of weapon the offender possesses (1979; Cook 1986; 1987; Luckenbill 1980). A robber is *less* likely to open the encounter with an attack when he is armed with a firearm because a threat will suffice. Gun robberies usually follow the typical pattern of a holdup where the offender makes a threat but never attacks the victim (1986; Cook 1987). Unarmed robbers, on the other hand, are more likely than armed robbers to initiate the crime with an attack (Cook 1987).

Luckenbill (1980) argues that the greater a robber's coercive resources, the less need there is for the use of force. From a 1976-1977 sample of robberies in a Texas city,

he discovered that when an offender was armed with a gun or a knife, he or she always opened the robbery with a command accompanied by a threat. On the other hand, in 78 percent of the cases in which the offender was unarmed or armed with a club, the robber used incapacitating force to open the robbery. Furthermore, the robber's use of force appears to depend on the role that the victim plays in determining whether the robbery can be completed. In Luckenbill's (1980) sample, when the target was instrumental in determining whether the offender could complete the robbery (e.g., the target was needed in order to complete the transfer of goods), offenders did not use incapacitating force, independent of whether they were armed and independent of the type of weapon they possessed.

Using 1973-1979 National Crime Survey (NCS) robbery data, Cook (1987) found that the presence of guns reduced the likelihood a victim was actually attacked. In an earlier study, Cook (1980) examined National Crime Panel (NCP) victimization data gathered in 26 large U.S. cities during 1973 and 1974. He found that robbery victims were more likely to be attacked by non-gun offenders than gun-totting robbers and concluded that the lethality of a robber's weapon plays an important role in the likelihood that the offender will physically attack a victim. He (Cook 1980:34) concluded that "robbers who are unarmed or are carrying a less lethal weapon are typically more forceful."

Moreover, when a gun offender does attack, he does not necessarily shoot (Cook 1980; Cook and Campbell 1979). Victims of gun robberies are more often beaten than

shot, suggesting that gun offenders exercise some restraint when they attack (Cook 1980). The presence of a gun has also been found to be inversely related to the likelihood that it would be used to attack in assaults (Skogan and Block 1983). For instance, Skogan and Block (1983) examined stranger assaults contained in NCS from 1973 to 1979 and discovered that less than 20 percent of the gun cases involved a physical attack. They (Skogan and Block 1983:221) conclude that "as weapons become more deadly, their actual use in an attack declined."

Research (Cook 1991; Cook 1980; Cook 1987; Cook and Campbell 1979; King 1992; Kleck 1988; Kleck and DeLone 1993) has consistently found that victims are less likely to sustain injuries in gun robberies than in other types of robberies. Kleck and DeLone (1993) found that, controlling for situational characteristics such as crime location, age, gender, and number differences between victims and offenders, victim self-protective behaviors, and the offender's possession of different types of weapons, the probability that a victim sustained injuries was reduced when the robber was armed with a gun. Regarding non-robbery assaults, Skogan and Block (1983) found that the presence of a firearm was consistently associated with a lower likelihood that an assault victim would be injured than in cases that involved knives and other weapons. Similarly, using 1980-1983 NCS data on stranger robberies and assaults, King (1992:117) found a negative association between the presence of a gun and the likelihood that victims were injured.

Regarding the seriousness of non-lethal injuries, Cook's (1980) analyses of NCP

victimization data from 26 large U.S. cities indicated that approximately a quarter of victims attacked by gun wielding robbers required medical attention. Furthermore, his results showed that robbery victims are most likely to be seriously injured with weapons other than guns and knives, such as clubs. In an earlier analysis of NCP data, Cook (1976) found that gun robberies were associated with a relatively low likelihood that victim injuries required medical attention and that a small proportion of gun robberies ended with the victim requiring 1,000 or more dollars in medical expenses. Finally, Skogan and Block (1983) found that a larger portion of knife assaults resulted in victim injuries that required medical care than did corresponding gun incidents.

The type of weapon a robber uses is related to the likelihood a victim will die (Cook 1979; Cook 1980; Cook 1987; Zimring and Hawkins 1997). Cook (1979) discovered that the portion of firearm robberies that end in victim death is about five times higher than the fraction of fatal robberies in which the offender is armed with another weapon. He confirmed this in a later study (Cook 1987) when he found that guns are predominant in fatal robberies, while less common in nonfatal robberies. According to Cook (1979), if robbers were forced to substitute other weapons for guns in 1,000 robberies, about seven lives would be saved, assuming that weapons are solely responsible for robbery deaths. The likelihood that a robbery victim will be killed was found to be three times greater when a gun is used than when a knife is used (Cook 1987). Cook (1991:20) concluded that "if there is an injury, the probability that it will result in the death of the victim is much higher in the case of gunshot wounds than knife wounds."

Summary: Existing robbery research consistently indicates that a threat with a lethal weapon is credible enough that an opening attack is unnecessary and also that non-lethal, serious injuries are not more likely in gun robberies than in robberies with other weapons. However, gun robberies are associated with a higher probability that a victim will die than robberies with other weapons. Assuming that intentions are similar across robbery incidents, Wright and colleagues (1983:209) suggest that the association between guns and robbery-murders "results mainly from the differential inherent lethality of guns relative to other weapons." The authors also suggest that this interpretation must be made with caution, however, because they are assuming that robbers have similar goals and that their intent is not to injure.

Limitations: The primary limitation of these early studies is that they made no explicit attempts to control for individual, situationally-specific intent to harm. This point is significant because the debate over weapon effects centers on this issue. The argument is whether the close association between guns and lethal violence is due to firearms or due to the intentions of the user. In order to move toward a better understanding of the issues, research must attempt to adequately separate the effects of individual intent and the effects of firearms. The body of early research described above did not make such attempts. For instance, because Kleck and DeLone (1993:78) were unable to include a measure of individual intentions in their multivariate models, they indicated that their estimated weapon effects may be biased. This is the critical limitation that plagues the extensive body of research on firearm effects in robberies.

Although it might be argued that robbers have a relatively consistent, low-level of intent to harm (Wright, Rossi and Daly 1983), this assumption is debatable. First, theory posits that during social encounters intent to harm can arise from attributes of the incident, such as the behavior of targets. Therefore, it is problematic to assume that individual intentions are stable across social situations. Second, evidence (Cook 1979:774; Cook 1980) suggests that some robbery violence is not instrumental in completing the crime. Thus, certain offenders may intend to harm their victims while other robbers do not, lending support to the argument that it is necessary to measure individual intent across seemingly similar incidents. Assuming intentions are consistent across classes of crimes, such as robberies, is a limitation (Wright, Rossi and Daly 1983).

Because this line of research has given almost exclusive attention to robberies, the more common type of violent encounter, an assault, has been ignored. This is a critical limitation because robbery and assault incidents differ in important ways. First, robbers should not be expected to value inflicting harm on victims as much as they value obtaining someone's property (Wright, Rossi and Daly 1983). Any harm a robbery victim suffers is likely to be incidental to the robber's goal: securing a victim's property. Therefore, on average, robbery offenders' situational intentions to harm a target may be less strong than in pure assault encounters. Felson and Messner (1996:537) recently found that "the use of guns and knives – the two more lethal weapons – is more strongly related to lethal outcomes in pure assaults than in robberies," indicating that weapon effects and/or the effects of situational intent are different in robberies and assaults .

Similarly, King (1992) argues that assaults involve a greater level of victim precipitation than robberies. This is significant because theory argues that the interactions between actors in a social encounter are partially responsible for what transpires. Thus, assault incidents involve victim behaviors that might increase the level of violence. Furthermore, 1994 NCVS data indicate that about 73 percent of robberies known to the police involved strangers while approximately 48 percent of all reported assaults involved strangers. This is important because research shows that nonstranger incidents are typically more violent than stranger incidents (Felson and Messner 1996; King 1992). In addition, researchers (Felson and Messner 1996; King 1992; Kleck and McElrath 1991; Wright, Rossi and Daly 1983) assume that crime type – assault, robbery, rape, and burglary – reflects different degrees of individual intent to harm. Therefore, estimating weapon effects in one type of crime may provide evidence at only one level of offender intentions, *assuming* that crime types are associated with a relatively consistent level of individual intent to harm.

Zimring's Study

Zimring's (1968) conclusions challenged Wolfgang's (1958) assertion that the availability of firearms is not related to the frequency of lethal violence. Zimring (1968:722) attempted to answer the question, "Do a significant proportion of homicides result from a less deliberate and determined intention." Zimring establishes criteria that would indicate guns have independent, positive effects on violence. One can conclude that "the elimination of guns would reduce the number of homicides" if it is shown that a

majority of homicides involve ambiguous, rather than clear intentions to kill, and that firearm substitutes are less likely to produce lethal injuries (Zimring 1968:722).

Zimring (1968) investigated weapon effects using Chicago police data on homicides and serious, non-lethal assaults from 1965 to 1967. Recognizing that direct measures of individual intentions are lacking, he relied on proxy measures and assumptions to conclude that a majority of homicides did not involve clear intentions to kill. He argued, rather, that most homicides involved ambiguous intentions and, because a higher percentage of homicides are committed with guns than any other weapon, guns are responsible for a significant number of deaths. In addition, Zimring (1968) demonstrated that guns are more deadly than the most likely substitute weapon, knives. These results satisfy the conditions he established for demonstrating that guns are inherently dangerous weapons and that guns independently increase the likelihood that victims will be killed. Although Zimring's (1968) evidence and conclusions are compelling, when one identifies the limitations associated with the study, his conclusions become questionable.

Wright et al. (1983) describe, in detail, the problems associated with Zimring's (1968) project. The primary criticisms focus on the manner in which Zimring demonstrates that most homicides involve ambiguous intentions and on how he shows that gun and knife users have comparable intentions. Because a majority of the homicide cases that Zimring investigated developed out of altercations, such as domestic disputes and disputes over money, rather than developed out of robberies and gang-related conflicts, he concluded that most homicides involved ambiguous intentions. He (Zimring 1968:723)

argued that altercations are "precisely the situations where the intention is more apt to be ambiguous rather than single-minded." This assumption, however, lacks an adequate theoretical grounding (see Kleck 1997:234). Wright et al. (1983) claim that Zimring made this assumption because these incidents represent heat-of-the-moment incidents, those in which people may not be thinking clearly and may not consider the consequences of their actions. Clear intentions to kill, nevertheless, can arise during the course of a seemingly innocent altercation over, for instance, a small wager on a game of billiards. The social interactionist approach posits that intent to kill can develop during the course of an interaction. Wright and colleagues (1983:190) claim that a "strong intention to kill could be formed only seconds before the attack."

Second, because a majority of homicides occurred between nonstrangers, Zimring (1968) argued that most homicides involve ambiguous intentions. This assumption is also questionable because, again, there is nothing to suggest that, as the relational distance between combatants increases, the clarity of lethal intentions decreases. Felson and Messner (1996) and King (1992) found that nonstranger violent incidents were more violent than stranger incidents. It may be the case that nonstranger cases involve a greater willingness to use violence, as Wright et al. (1983) and Kleck (1997:234) have argued, rather than ambiguous intentions.

Third, the participants (victim, offender, or both) in over half of the homicides Zimring (1968) investigated had been using alcohol. Again, he argued that this evidence suggests that most homicides occur under circumstances of ambiguous intent. The

criticism is that alcohol involvement does not necessarily imply that aggressors had ambiguous intentions. Rather, alcohol use could have the opposite impact on intent, it could enforce a single-minded intention to do harm by interfering with the users conscience (see also Fagan 1990; Kleck 1997:234; Tedeschi and Felson 1994:197-201). Wright and colleagues (1983:197) appropriately conclude that the criticisms of Zimring's project do *not* demonstrate that most homicides involve strong, clear intentions to injure and kill, but do demonstrate "that the evidence assembled by Zimring is not adequate to rule out this possibility."

Next, Zimring (1968) compared the characteristics of assault victims with those of homicide victims and found that they were similar in terms of race and gender. Although he does not explicitly relate this similarity to individual intentions, Wright et al. (1983:195) state that Zimring's (1968) hypothesis is "that most homicides begin as aggravated assaults and end as homicides only because the means chosen or available for assault tend to be lethal." The criticism is, again, that "nothing of direct relevance to ambiguous intentions hypothesis follows" this evidence about the similarity of victim characteristics (Wright, Rossi and Daly 1983:195). In other words, victim race and gender say nothing about individual intentions in violent situations.

Zimring (1968) compared the relative dangerousness of weapons in order to ascertain whether or not likely firearm substitutes produce deaths at similar rates as do firearms. About 50 percent of the homicides in Zimring's Chicago sample were committed with a gun while 30 percent were committed with knives. Furthermore, the

fatality rates of gun attacks exceeded that of knife attacks. This led Zimring (1968:728) to conclude that "the rate of knife deaths per 100 reported knife attacks was less than one-fifth the rate of gun deaths per 100 reported gun attacks" and that "if knives were substituted for guns, the homicide rate would drop significantly." In order to make this conclusion, Zimring (1968) must show that the situational intentions of gun users and knife users are comparable. He relied on two pieces of evidence to demonstrate the comparability of intentions. First, he found similarities between knife and gun incidents in terms of the race and gender of the offenders and similarities in the incidents' circumstances, such as an altercation and a robbery. He reached the conclusion that the intentions of knife and gun offenders are similar. The problems associated with inferring offender intentions from crime circumstances and victim characteristics have been described and apply here. Based on this evidence, it is unclear whether knife and gun attacks are made with equivalent intentions.

Second, Zimring (1968:731-2) assumes that wound locations represent "the intended seriousness of an attack," and based on wound location information, concludes that about equal proportions of gun and knife attacks are made with an intention to seriously injuring the victim. In drawing this conclusion, he presumes that it is not likely that people intending to inflict superficial wounds would inadvertently inflict wounds to serious areas, like the head, chest, and abdomen. Zimring's data show that 70 percent of fatal and nonfatal knife attacks produced wounds to serious areas (head, chest, abdomen, back, neck, and shoulders) and that 56 percent of fatal and nonfatal gun attacks produced

wounds to these serious areas. Wounds to less serious areas (legs, arms, and missed attacks) occurred more frequently in gun attack instances than in knife attack instances. Therefore, "there is no evidence that attacks in earnest are much more common with guns than with knives" (Zimring 1968:732). Thus, the greater proportion of gun attacks that end in a homicide than knife attacks that end in a homicide are the result of specific attributes of the weapons.

Using wound location as a proxy measure for offender intent to harm is problematic. The official data Zimring (1968) uses likely excludes minor injury cases because people may not bother reporting trivial incidents (Kleck and McElrath 1991). The sample is one in which injuries are likely to be at the severe end of the spectrum and injury locations to be in "serious" areas. Thus, the injury location measure that Zimring (1968) uses is an ineffective measure of situational intent in the broad range of all gun and knife attacks. This wound location evidence does not suggest there is a clear pattern of similar or dissimilar intentions across gun and knife incidents (Wright, Rossi and Daly 1983:200).

Along these same lines, police data, generally, are inadequate for understanding weapon effects because these data contain a limited sample of violent events and lack relevant information (see Kleck and Gertz 1995:167; Reiss Jr. and Roth 1993:263). Official data likely only capture the events victims consider serious enough to report and serious events that police discover (e.g. a dead body) (Cook 1979; Cook 1980). An encounter between two bar patrons that ends in cuts and scrapes is likely to be absent

from official data, as well as a threat with a firearm used to force a victim out of $25. When these data do capture an event, the relevant details needed to test weapon effects are unavailable, such as the offender's motivation and relevant situational variables . Block (1981:747) remarks that official data "are not appropriate to study the background of criminal events, the relationship of victim and offender, or the dynamic of victim-offender interaction" and Sampson and Lauritsen (1994:38) suggest that the data necessary to separate the effects of firearms from the effects of individual intentions are not readily available. Therefore, research that tests weapon effects with official data sources is limited.

The limitations of Zimring's work make his conclusions regarding the intentions of homicide offenders and the causal effects that guns have on situational outcomes questionable. Recent research has provided a more complete analysis of gun effects, but has encountered many of the same difficulties Zimring faced over two decades earlier and has been unable to sufficiently overcome these obstacles. These recent, more sophisticated research endeavors are the subject of the following section.

Recent Research

Two recent research projects have used advanced multivariate statistical methods to analyze relatively heterogeneous samples of violent encounters in an explicit attempt to isolate micro-level firearm effects in violent situations. Four key findings emerged from these analyses: 1) firearms reduce the likelihood an attack will take place; 2) firearms reduce the likelihood that a victim will be injured; 3) firearm-inflicted injuries increase the

likelihood that victims will suffer severe injuries firearm inflicted injuries and increase the likelihood that victims will die; and 4) firearm effects are stronger in assaults than robberies.

Kleck and McElrath (1991) use NCS data from 1979-1985 and Supplemental Homicide Report (SHR) data from 1982 to examine the effects firearms have on the dynamics and outcomes of hostile encounters: stranger assaults, robberies, rapes, and burglaries. The authors (Kleck and McElrath 1991:677) decided to exclude nonstranger cases in order avoid problems associated with response biases that result from under reported intimate violence in the NCS.

The NCS incidents include physical attacks and threatened physical attacks, but exclude homicides. When combined with SHR data, this sample becomes a heterogeneous mix of incident outcomes that range from threats to homicides. The researchers focus on three dependent variables: whether or not an attack occurred; whether or not a victim was injured, given an attack; and whether or not a victim died, given that the victim was injured. The fact that Kleck and McElrath (1991) examined the attack stage of violent and potentially violent situations is a significant contribution because guns can, theoretically, increase or decrease the likelihood of an attack. Analyzing this attack outcome provides evidence of these, often ignored, gun effects. Recall, actors may arm themselves in order to carry out violence but might also arm themselves to avoid physical violence. Additionally, Kleck and McElrath (1991:687) point out that when analyses are only conducted on the injury stage of a violent incident, the full range of gun effects in violent

incidents remain unknown.

In the model they used to predict the likelihood a physical attack will occur, the weapon variables measure offender handgun possession, offender other gun possession, offender knife possession, offender other weapon possession, and no weapon possession. In the model predicting injury or no injury, the gun variable measures whether or not a gun was used to attack. The authors point out that the presence of a gun in an encounter does not necessarily mean that the firearm was used to attack. In addition, Kleck and McElrath (1991:674) argue that it is important to examine the method of attack because shooters do not necessarily hit their targets with great frequency. For their purposes, a gun attack includes cases in which a victim was shot and cases in which offenders shot at victims, but missed. In the injury versus no injury statistical model, other forms of weapon attacks are measured and controlled, such as knife attacks. Finally, in the model predicting nonlethal injuries or death, the key weapon variables measure whether the victim sustained a gunshot wound from a handgun, a gunshot wound from another gun, a knife wound, a blunt object wound, and a wound from another weapon .

Because Kleck and McElrath (1991) examined different stages of violent encounters (the attack stage, then the injury stage, and then the death stage), they use selectively smaller sub-samples of situations. For example, in order for a case to be included in the analysis of the likelihood that a victim will die, an attack has to occur and a victim must be injured. Therefore, all cases do not have the same chance of being included in the sample of incidents. The sub-sample of injury cases is different from the

total sample with which the researchers started. To correct for non-random selection bias, a variable was included in the substantive equations that measures the predicted probability that a case would not be included in the samples at each stage (Heckman 1979).

The authors assume that the independent variables included in their equations are correlated with offender motivations, independent of the presence of a firearm and, thus, control for individual, situational intentions. For instance, Kleck and McElrath (1991:681) argue that males, people aged 12 to 29, and African-Americans are most willing to inflict harm on their victims because, they argue, these groups "commit violent acts more frequently and seriously than others." They (Kleck and McElrath 1991:681-682) assume that crime type also reflects a willingness to inflict harm, "on the assumption that robbers, rapists, and burglars have longer and more serious records of prior violence than simple assaulters and are therefore more willing to use violence in a sample incident". Pure assault circumstances should, on average, be associated with lower levels of intent to harm. Nevertheless they acknowledge that rapists, robbers, and burglars have goals other than to harm their victims.

Finally, Kleck and McElrath (1991) use power difference measures as indicators of situational intent. Their power difference measures indicate whether the offender(s) has an advantage in terms of age, gender, and number. Although they do not make explicit assumptions about which combination reflects the greatest power differential, they recognize that offenders who have a power advantage might be more willing to use

violence. Aggressors with an advantage will not fear counterattack from their opponents and these offenders will be able to achieve their goals without having to make a physical attack and injure their opponents.

Controlling for their assumed correlates of offender intentions, the presence of a handgun, the presence of any other type of firearm, and the presence of a knife reduce the likelihood that the offender will attack. Those offenders who possessed blunt objects and similar weapons were more likely to attack than to merely threaten. Given that a physical attack, as opposed to merely a threat, has taken place, a gun attack reduces the likelihood a victim will suffer injuries, while attacks with knives and other weapons increase the probability that a victim will be injured. Finally, injuries inflicted with firearms were more likely to be lethal than nonlethal. Overall, the presence of a firearm has a net positive effect on the likelihood an opponent will suffer lethal injuries (see Kleck 1997:242; Kleck and McElrath 1991:table 5).

Felson and Messner (1996) conducted a similar study that paid explicit, significant attention to the effects firearms have on victim injuries in violent encounters while controlling for proxies of individual intent. Combining 1987-1991 NCS injury incident data with 1989 SHR data in a manner similar to Kleck and McElrath (1991), the authors focused on the relationship between weapons and the severity of victim injuries. Their key gun variable was dichotomous and measured whether or not the victim reported that the offender possessed a gun. In addition, they measured whether or not a knife was present, whether a blunt object was present, and whether other weapons were present.

Felson and Messner (1996) were forced to rely on a crime type dummy variable (robbery or assault) as a measure of situational intent to harm, as were Kleck and McElrath (Kleck and McElrath 1991), because their data sets lacked direct measures of offenders' intentions. Unlike Kleck and McElrath (1991), Felson and Messner (1996) assume that offenders are more motivated to inflict harm in assaults than in robberies, based on the notion that robbers wish to obtain property from victims while assault offenders wish to harm their victims.

In addition to the crime type and weapon variables, Felson and Messner (1996) control for tactical, situational factors that they hypothesize are related to individual intent and affect injury outcomes. The authors (Felson and Messner 1996:520) define tactical concerns as "features of the incident that would make it more or less advantageous for criminal assailants to kill rather than merely injure their victims." Thus, they argue that tactical concerns are related to whether or not the aggressor intends to kill. The tactical measures they include in their models are victim gender, victim race, victim and offender relationship, and whether there were multiple offenders or a single offender. Felson and Messner (1996:524) argue, for instance, that single offenders will be more willing to kill a victim than multiple offenders because lone offenders "will tend to be more fearful of retaliation than multiple offenders." Because male victims are assumed to be more likely to make violent, protective behaviors toward the offenders, "offenders should be likely to kill male victims than female victims" (Felson and Messner 1996:524). Because of stereotypes, black victims may be seen as posing a greater risk of retaliation than non-

black victims. Therefore, offenders will be more likely to kill black victims. The authors predict that offenders will be more likely to kill nonstrangers than to kill strangers because nonstrangers will be able to identify their attackers. In an attempt to avoid detection, offenders will want to kill victims who can identify them.

Unlike Kleck and McElrath (1991), Felson and Messner (1996) do not assume that offender characteristics directly reflect intentions to inflict serious injuries. Rather, they assume that victim characteristics reflect tactical reasons why an offender would want to seriously harm and kill a target. Although Felson and Messner (1996:525-526) include offender race and gender measures in their statistical models, they recognize that there is no clear guidance for predicting how these measures will influence the outcomes of violent events.

The authors (Felson and Messner 1996:526) examine three dependent variables: death versus any injury; death versus serious injury; and serious (nonlethal) injury versus nonserious injury. Serious injuries are defined as those that result in medical treatment and minor injuries are those that do not result in medical attention. Although they use a specific sub-sample of cases (those that result in some injury) they do not correct for potential sample selection bias for two reasons. First, Felson and Messner (1996) argue that they are concerned with firearm effects in injury situations, not *all* violent and potentially violent events. Second, simulation research (Stolzenberg and Relles 1990) shows that adding a variable that estimates the predicted probability that a case will not be included in the sample to a substantive equation can be harmful (Felson and Messner

1996:528).

Logistic regression results indicate that "guns are strongly associated with lethal outcomes" (Felson and Messner 1996:535). Victims are over 40 times more likely to be killed than to sustain nonlethal injuries when offenders use guns compared to when offenders do not use weapons. Victims are about four times more likely to be killed than to sustain nonlethal injuries when offenders use knives compared to situations in which offenders do not use weapons. A similar pattern of results appears for the likelihood a victim will die rather than sustain serious, nonlethal injuries. Victims are more likely to suffer lethal versus serious, nonlethal injuries when offenders are armed with guns compared to other weapons and no weapons. This pattern is less apparent in the equation used to predict the likelihood a victim sustained minor injuries versus severe injuries. The differences between the unstandardized coefficients for guns, knives, and other weapons is not as great as the differences in the other two equations. Nevertheless, the presence of a weapon has a significant, positive effect on the likelihood that injuries will be severe rather than minor, independent of the proxy, control variables.

In addition to investigating the independent, main effects of weapons on injury outcomes, Felson and Messner (1996) explicitly tested two hypothesized weapon effects that involve an interaction between weapon possession and situational intent to harm. This is important because by testing for an interaction they are attempting to understand whether the effects of firearms on injury and death outcomes are different across levels of intent to harm, measured with their crime type proxy variable. Does the effect of a gun

depend on the possessor's intentions? According to their *compensation hypothesis*, offenders who intend to seriously injure their opponents will take the necessary steps to do so even without a weapon (see also Kleck 1997:233, 235). The non-gun possessing offender will make stronger efforts to injure and kill. If the compensation hypothesis is correct, firearms should have weaker effects on the degree of injuries when the offender intends to harm (assault situations) than when the offender does not intend to harm (robbery situations). According to the weapon *facilitator hypothesis,* "offenders who value harm will produce more of it when they have lethal weapons" (Felson and Messner 1996:525). If the facilitator hypothesis is correct, firearm effects on injuries should be stronger in assaults than robberies, assuming that robbers do not intend to seriously injure their victims. Thus, rather than make predictions about a general pattern of interaction effects they make predictions about a specific outcome: the difference between gun effects at two discrete levels of intent.

The researchers (Felson and Messner 1996) were unable to include an interaction term in a single model because of data limitations, but they did examine the effects firearms have on the nonlethal injury versus lethal injury dependent variable in two models, one for assaults and one for robberies. The unstandardized logit coefficient for the gun measure is larger in the assault equation than in the robbery equation, supporting their facilitator hypothesis. This suggests that the effect of a gun depends upon the strength of the possessor's intentions to injure. Guns appear to have different effects on injury outcomes across different levels of intent, measured with a proxy variable, supporting the

notion that a gun allows its possessor to carry out intentions.

Limitations

The limitations associated with the most recent and sophisticated studies that have attempted to isolate firearm effects must be understood so that the adequacy of their conclusions can be evaluated. The critical limitation of these studies parallels the one that plagued Zimring's project, an inability to separate the effects of two interrelated factors that are believed to affect the outcomes of conflict situations: variable, situational intent to harm and the presence and use of guns. Although the two recent studies employed sophisticated multivariate methods to analyze comprehensive data sets, their ability to separate these two critical effects is questionable.

Because the NCS and SHR data sets do not contain measures of offender intentions and because "it is impossible to measure strength of an aggressor's motivation at the time of a real-life assault" (Kleck 1997:231), researchers who examine weapon effects are forced to rely upon several assumed correlates of individual intent to harm. Crime type has been used as a proxy for intent but its use is a less than desirable way to control for the latent construct. First, coercive action theory and the interactionist approach recognize that individual intent to harm is not necessarily predetermined and that intentions to harm can arise during the course of an interaction. From this theoretical standpoint it is inappropriate to assume that intentions are constant across seemingly similar situations. Thus, on a general level, it is problematic to assume that most assault offenders and most robbery offenders have a consistent level of situational intent to harm.

Second, even if it is non-problematic to assume one crime type, on average, is associated with differing degrees of intent to harm, it is unclear which type of offender is expected to involve offenders with the stronger intent. Kleck and McElrath (1991:682) argue that robbery offenders are more willing to use violence and inflict harm than are assault offenders because robbers have "more serious records of prior violence than simple assaulters." Theory, however, posits that robbers will not value inflicting harm as much as assaulters because assault offenders have the goal of inflicting harm while a robber's primary goal is to obtain property (Felson and Messner 1996; Tedeschi and Felson 1994).

Unlike Kleck and McElrath (Kleck and McElrath 1991), Felson and Messner (Felson and Messner 1996:532) "hypothesize that victims are less likely to be killed in a robbery than in a pure assault because robbery offenders are less likely to value harm to the victim." They argue that robbers desire compliance from victims while assault offenders desire to inflict harm on their targets. Yet on the other hand, Cook (1986) found that robbery-related violence is not always instrumental in obtaining property from victims, suggesting that certain robbers, in certain situations, may harm victims for its own sake while others decide not to. Thus, individual intentions to harm are likely to be variable within the class of robberies. Furthermore, the differences between robberies and assaults may reflect variability on factors other than the aggressor's intent to harm, such as the degree to which the offender chose to become involved in the encounter and the availability of third parties to observe the incident (Felson and Messner 1996). Robbers are more likely than assault offenders to choose their targets in advance and third parties

are more likely to be present in assault encounters than in robbery encounters.

Even though there is justification to assume, on average, that one type of encounter might be associated with offenders who have differing levels of intent to harm, there is no clear empirical support for one argument. As further evidence, Kleck and McElrath's (1991) and Felson and Messner's (1996) findings about the relationship between crime type and incident outcomes are inconsistent. Kleck and McElrath's (1991) findings indicate that, relative to assault circumstances, robbery circumstances increase the likelihood that an attack will occur, increase the likelihood that a target will be injured, but decrease the likelihood that an injured target will die. Felson and Messner's (1996:table 2) results show that, relative to assault circumstances, robbery circumstances decrease the likelihood an injured target will sustain injuries that require medical care rather than minor injuries, decrease the likelihood that injured targets will die rather than sustain nonlethal injuries that require medical attention, and decrease the probability that injured targets will die rather sustain any nonlethal injury.

In a similar vein, these recent studies have included stable, individual offender and victim demographic characteristics in statistical models as a way to control for offenders' intent to harm. Kleck and McElrath (1991) assume offender characteristics are directly related to their level of intent to do harm. By assuming that stable, individual offender characteristics reflect varying degrees of situational intent to harm, it is implied that individual intentions are stable across diverse situations. There is no clear theoretical justification to assume that certain individual, demographic characteristics are associated

with stable degrees of intent to harm opponents across potentially diverse social situations.

Felson and Messner (1996) include in their statistical models measures of tactical concerns to the offender, reasons why an offender might want to kill the opponent. In other words, certain circumstances make it more advantageous for an offender to kill a victim. These circumstances include the victim's ability to identify the offender and the victim's ability to retaliate and harm the offender, measured with victim race and victim gender. While tactical concerns may be important determinants of whether or not an opponent will try to kill an opponent, tactical concerns do not completely capture the intent construct. These tactical concerns reflect two reasons why an offender would want to harm and kill a victim, but intentions are theoretically different from the reasons why a person would intend to harm an opponent (Tedeschi and Felson 1994) and intent can exist in the presence or absence of tactical concerns. Recall, Tedeschi and Felson (1994) differentiate motives from intentions and argue that the two do not necessarily coincide. Tactical concerns may mitigate or aggravate the effects that individual intentions have on situational outcomes.

In addition, these two recent studies have included measures of offender and victim characteristics in statistical models as a way of controlling for power differences. These differences are assumed to reflect varying degrees of an offender's willingness to use violence in an encounter. Kleck and McElrath (1991) assume that characteristics of both victims and offenders, such as gender and age, can reflect a power differential that, in turn, is related to offender intentions. However, like tactical concerns, a power advantage

does not capture the intent construct. Intent can exist in the presence or absence of a power advantage, power imbalances can influence whether or not the person acts on those intentions.

Using stable, victim characteristics as proxy measures of the *ability* that opponents have to retaliate (Felson and Messner 1996) and as proxy measures of the *risk* to the attacking offender (Kleck and McElrath 1991) have only limited utility. A more precise measurement would indicate which actor retaliated or opened the encounter with a physical or attempted physical attack. A central limitation of using certain proxy situational measures and demographic variables to control for individual intentions is that this approach does not recognize that individual intentions can differ across seemingly similar incidents. Recognizing that intent can vary across apparently similar situations is critical in the interactionist approach. Unfortunately, most data have not been gathered with the goal of analyzing the effects that individual and situational attributes have on the dynamics of the encounter (see Sampson and Lauritsen 1994:38). Therefore, researchers have not been afforded the opportunity to allow this important theoretical proposition to be reflected in their studies.

Aside from the fact that existing data sets lack key measures, additional problems stem from the data sources utilized in prior studies. Kleck and McElrath (1991) indicate that black respondents under report violent episodes more than white respondents, and that more educated respondents report more incidents than less-educated respondents. "The result is that the measured fraction of assaults resulting in attack or injury may be

artificially elevated for blacks and artificially lowered for better-educated people" (Kleck and McElrath 1991:676-677). This may be especially problematic for Felson and Messner's (1996) and Kleck and McElrath's (1991) projects because each assumes that race is related to the aggressor's intentions. If race is an important factor in reporting patterns that relate to the seriousness of the incident, then the relationship between race and situational outcomes may not capture the relationship between the latent construct, individual intent to injure, and situational outcomes. Rather, race-related measures may capture the effects of reporting practices. This suggests, further, that the use of a race variable is an inadequate way to control for situational intentions, even though its use may be an appropriate way to control for potential reporting biases.

Next, Felson and Messner (1996) failed to examine the independent effects of guns and interaction effects of intent with guns on the likelihood of an attack. This failure does not permit them to make conclusions about the overall, full range of firearm effects in conflict situations. Because firearms are associated with decreased likelihood of attacks, their analyses overstate the violence producing effects of guns (see Kleck and McElrath 1991:687). Furthermore, unlike Kleck and McElrath (1991), Felson and Messner (1996) employed measures of weapon possession rather than a measure of the offenders' attack method. This is significant because Kleck and McElrath (1991) argue that gunshot attacks do not always reach their targets and also because weapon possession doe not guarantee that it was used to attack. For these reasons, a better measure to use in analyses of injury outcomes is the one Kleck and McElrath (1991) used, the type of attack the offender

made.

Kleck and McElrath (1991) limit their sample to stranger cases in order to avoid problems associated with nonstranger case reporting. Limiting the sample to stranger cases is problematic because others (Felson and Messner 1996; Zimring 1968) assume that the relationship between actors is a correlate of situational intent or the intensity of a grievance. King's (1992) situational analysis of NCS data showed that nonstranger assaults tended to be more violent than stranger assaults and Felson and Messner (1996:537) found that "victims who know the offender are much more likely to be killed in pure assaults." More important, limiting the sample to stranger cases produces a sample selection bias (Felson and Messner 1996), making it impossible to know whether findings are limited to nonstranger cases, when intentions to harm may be relatively weak. Moreover, robbery situations are more likely to involve strangers than nonstangers (Sampson and Lauritsen 1994). Thus, because Kleck and McElrath (1991) use a robbery as a proxy measure of intent and because they limit their cases to stranger incidents, the subsample of cases they analyze is one that may include a disproportionate number of robberies relative to assaults.

Finally, although the NCS captures a broad range of violent events, it excludes relevant types of violent and potentially violent encounters. First, for an assault incident to be counted by the NCS an offender must make a physical attack or make a threat. Incidents that may be high-risk encounters, such as heated arguments and insulting matches, are excluded. Second, Cook (1985) found that victimization survey data on

serious assaults are less complete than police records. He (Cook 1985) estimated that the NCS undercounts the number of nonlethal gunshot wounds by a factor of approximately three. Additionally, Kleck and McElrath (1991) argue that it is unknown whether the NCS undercounts minor-weapon assault incidents to the same degree to which the NCS undercounts serious-weapon incidents. They conclude that it is not entirely clear whether the average seriousness of assault incidents contained in the NCS are distorted to different degrees across weapon categories. This evidence suggests that these victimization survey data do not provide a satisfactory sample of conflict incidents and do not capture the details necessary to adequately understand weapon effects.

By examining the likelihood of an attack in an encounter, Kleck and McElrath (1991) were able to demonstrate that guns can have contradictory effects in violent and potentially violent situations. They made a significant contribution by identifying the attack versus no attack stage of violent encounters as critical, and by providing evidence about the effects that guns have on the likelihood an aggressor will attack. By examining the attack stage, one can discern the net effects of guns on injuries in a heterogeneous mix of events, similar to Kleck and McElrath's analyses (1991).

However, because an incident has to involve at least an explicit threat to be captured in the NCS, the net effects that Kleck and McElrath (1991) remain somewhat limited. Their sample does not include potentially violent encounters in which actors did not make threats or the threats were subtle and implied. It is useful to go even one further step backward in the order of events in order to more fully understand gun effects. In

other words, using the NCS as an example, guns may have important effects on the likelihood a person even made a threat. Therefore, it is useful to examine conflict cases that were more broadly defined. For instance, a more heterogeneous sample of encounters would be one that captured events that involved elements, other than just threats, that made it one in which there was a high risk for violence to occur. These might include, for instance, situations in which a person became angry with another person or situations in which someone perceived another person's behaviors to be inappropriate. Using such a sample to examine gun effects on the likelihood of attacks will produce a more complete understanding of the net effects of guns on injury outcomes.

Summary

Research that has focused on weapon effects in robbery incidents has discovered that a threat with a lethal weapon is credible enough that an opening attack is unnecessary; that non-lethal, serious injuries are less likely in gun robberies than in robberies with other weapons; and gun robberies are associated with a higher probability that a victim will die than robberies with other weapons.

Research on weapon effects has largely ignored assault incidents that do not take place in conjunction with another crime, such as a robbery. This is problematic because assaults differ from robberies theoretically and empirically. Nonetheless, the best existing evidence regarding assaults indicates that the presence of a gun reduces the likelihood a victim will be attacked and injured; gun use increases the likelihood that a victim will die; that gun inflicted injuries will be severe; and weapon effects are stronger in assaults,

situations in which actors are assumed to value inflicting harm.

While the above generalizations are drawn from the most recent and methodologically sophisticated studies, their limitations are numerous and must be understood so that future research can continue to make improvements and refine our understanding of firearm effects. The primary limitation is the one that Zimring attempted to overcome in the 1960's, an inability to adequately control for an offenders' situational-specific intent to harm an opponent. This is a critical limitation because one explanation for the relationship between guns and violence is that gun offenders have stronger intentions to harm. The effects of offender intentions and weapon use may be confounded. Therefore, the two must be measured and entered into statistical models so that their independent effects can be isolated. Until theoretically relevant measures of situational intent are available and utilized, independent weapon effects will not be adequately understood. Furthermore, empirical research has not given attention to the broad range of weapon effects in violent episodes. To understand this range of effects, multiple outcome measures must be examined in a heterogeneous sample of conflict encounters. This study takes advantage of a sophisticated data set and will improve upon the previously used methods in order to isolate weapon effects.

Methodology

> "The personal interview appears to be the most promising method for obtaining complex criminality information" (Petersilia 1978:30).

> "So also are the difficulties in relying on surveys of convicted criminals (who, as a group, are remarkable neither for honesty nor acute introspection)" (Polsby 1986:97).

This study will use self-reported data from newly incarcerated male offenders in Nebraska to examine the independent effects of weapons in violent and potentially violent episodes. Despite Polsby's (1986:97) caution quoted above, these data have a number of significant advantages over data used in previous studies. First, the estimated sample size of individuals and incidents is large. Five hundred and forty-seven inmates provided 2,118 incidents that will be examined in this project. This respondent sample is a high risk population that furnished information on a large number of incidents that involved weapons, and on a wide range of incidents that varied from situations that involved heated arguments to homicide events. The sample of incidents is broader than the National Crime Victimization Survey (NCVS/NCS) sample, allowing weapon effects to be examined in potentially violent situations that do not necessarily involve a threat. Respondents furnished details about situations in which they believed they might have become involved in a violent situation but did not. These incidents include, for instance, situations in which they became angry with someone but did not physically attack that person and those in

which the respondent was pushed but did not retaliate with violence.

Second, important variables are *directly* measured, including situational-specific intent to injure, situational weapon use, and overall individual propensity to use violence. Respondents were asked to report their intentions and exactly how they attacked the target. Third, independent weapon effects and situational intentions of offenders can be examined *within* a sample of assaults. Unlike the assumption that intent is constant within assaults and within robberies (Felson and Messner 1996; Kleck and McElrath 1991), theory posits (Campbell and Gibbs 1986; Tedeschi and Felson 1994) that situational intent to harm is *not* constant across all assaults. For example, intent does not necessarily exist across seemingly similar situations; intentions can arise based on the unique characteristics of encounters. It is necessary to measure situational-specific intentions that are able to vary across incidents. Fourth, the hierarchical statistical models employed permit the effects of situational-specific intentions to be separated from the effects of overall individual propensity to use violence. Thus, weapon effects can be adequately isolated from individual effects. Finally, the sample permits the independent effects of situational intent and weapons to be examined on two important outcomes: attacks and injuries. An examination of these two stages provides an understanding of the overall effects of weapons in violent and near violent episodes.

The data collection methods are presented in this chapter, along with a description of the sample, the interview procedures, the instrument, and the associated advantages and disadvantages. Relevant issues surrounding reliability and validity of adult self-report data

are described with a review of existing research.

Data

Respondents: Newly admitted adult, male inmates in the Nebraska Department of Corrections was the population under study. Two out of every three inmates that enter the Diagnostic and Evaluation Unit (D & E) in Lincoln were randomly selected to be invited to participate in the study. All inmates serving a new term were eligible to participate, including those convicted of violent and nonviolent offenses. Once an inmate was identified as being eligible to participate, an interviewer escorted him from his unit to the visiting room at the facility in order for the project to be explained. During the time an inmate was escorted from his unit to the visiting room the interviewer began to build rapport with the inmate by making small talk about any number of topics.

Procedures: Once in the visiting room, trained doctoral student interviewers explained the project with an informed consent document that has been approved by the University's Institutional Review Board. The inmate respondent and interviewer sat beside one another at a table where the respondent was told that the information he provided would be kept confidential and that interviewers would later obtain information from his official records at the institution. Each inmate was informed that if he completed the interview five dollars would be credited to his institutional account and that he would be provided with soda, coffee, and water during the interview. If the inmate agreed to participate, he and the trained interviewer signed the informed consent document. Each inmate was typically offered a refreshment directly after or before the project was

explained.

If the respondent declined to participate he was escorted back to his unit and then the process was repeated with the next eligible inmate. The process was completed until an inmate agreed to participate. If an inmate could not speak English well enough to complete the interview then he was skipped. A bilingual interviewer is in the process of completing interviews with these inmates. If an inmate was incarcerated for a parole revocation then he was deemed ineligible because this group of men is returning to prison in order to complete a previous term. It is assumed that these offenders spent a significant amount of time during the recent past in prison, while the goal of the overall project is to obtain a sample of inmates who recently spent a significant amount of time on the street. The target sample is one of *newly* admitted inmates.

Interviews were conducted at the facility from 8:00 am to 4:30 pm Monday and Tuesday and from 6:30 pm to 8:30 pm Wednesday through Sunday. If an interview was being conducted about lunch time, the inmate was escorted back to his unit so he could eat. About one hour later the interviewer picked up the inmate and resumed the interview. If an interview had to be stopped at the end of the day, the next time that particular interviewer returned to the facility, the interview was resumed.

Instruments: Interviews are conducted face-to-face with a computer based instrument. Interviewers read questions from a laptop and enter responses directly into the computer. The interviewer is responsible for clarifying any questions and for following the skip patterns within the instrument. For example, some questions may be skipped or

extra questions may be asked if an inmate responds in a certain way. The instrument is computer driven so that responses are entered directly into a laptop computer during the interview. This method was used in an attempt to reduce the amount of missing data and to ensure that interviewers could answer any respondents' questions. At the outset of the interview, respondents were asked to report their race, education level, marital status, date of birth, the date of the arrest for their current incarceration, and the current conviction crime.

Life Events Calendar: The next portion of the interview required respondents to complete a life events calendar (LEC) and a crime calendar for the 36 months prior to the arrest for which they were being incarcerated. A goal of the research project was to collect information about violent and potentially violent incidents. In order to facilitate the recall of incidents, respondents completed a calendar on which they placed life events. It is believed that when respondents begin to recall major life events they will begin to recall additional events such as violent events and potentially violent events. University of Nebraska researchers constructed the questions on the LEC with the assistance of an inmate advisory board. A group of Nebraska inmates assisted researchers in constructing questions that would be important to respondents and would aid their recall of incidents. The LEC consists of the 36 months prior to the respondent coming to prison.

The selection of the most recent month to place on the calendar was based on whether the respondent was arrested prior to, on, or following the 15th of the month. For example, if an inmate was arrested June 3rd, then month 36 was determined to be May. If,

on the other hand, the inmate reports being arrested October 22nd, then month 36 was determined to be October. Interviewers then counted back, numbering each month on paper calendars until all 36 months were numbered.

Paper calendars were also used during the interview in order to aid respondents' recall and to help interviewers understand the sequence of events that respondents report, on the assumption that the sequencing of events is easily followed if visible on paper. This also allowed the inmate to write down salient events which may not be gathered with the computerized instrument. The paper calendars were discarded after the interview and no information was gathered from them after the interview.

Respondents were asked questions about significant events that took place in their lives during each calendar month. Interviewers asked the questions and entered responses directly into the laptop computers and respondents were given the opportunity to write notes on a paper calendar. The LEC questions asked the respondent to indicate the city and county in which he was living; the safety of his neighborhood(s); jobs he held; how many hours he worked per week; his level of commitment to the job(s); why he left the job(s); how much legal and illegal income he made; the source of illegal income; with whom he lived; whether or not he was in school, the military, or a gang; whether or not he had any significant, intimate relationships; whether he was under severe stress for various reasons; how frequently he was spending his free time on non-work activities (e.g., gambling, going to bars, cruising around, playing sports); whether or not he was arrested in a given month; whether or not he was on probation or parole in a given month; and

whether he owned firearms and what kinds of firearms he owned.

Once the LEC section was finished the inmate was asked to complete a crime calendar. Each inmate was asked to report whether, when, and how many non-violent crimes he committed during the reference period. He was asked about burglaries, forgeries, frauds, thefts, motor vehicle thefts, and drug deals.

The final section of the LEC required respondents to recall any violent and potentially violent events in which they were involved during the reference period. Throughout the process, interviewers reassured respondents that the information they provided would remain confidential and that they should report incidents that were uncovered as well as those for which they were never caught. An interviewer first asked the respondent if he committed any business robberies during the reference period. If the respondent said "no" then they continued to the next category of events. If the respondent indicated that he did commit a business robbery, he was asked to indicate the months in which he committed each business robbery, starting with the most recent. This process was repeated for personal robberies, physical confrontations, violent victimizations, avoided violent incidents, and sexual assaults.

Interviewers explained, in detail, what is meant by "physical confrontations," "violent victimizations," and "avoided violent incidents" so that respondents could recall and report events that they may not have defined as an "assault" or as a "potentially violent" situation. *Physical confrontations* are situations in which the respondent physically assaulted an opponent by doing something more than merely shoving, pushing,

grabbing, or threatening. Each respondent was asked to report incidents in which he used a weapon on someone and incidents in which he hit, slapped, kicked, or choked someone. He was explicitly told to include incidents in which he fought in self-defense, incidents that involved partners or family members, and incidents in which he was physically attacked but did not counterattack.

Avoided violent incidents are high risk situations in which the respondent made no physical attacks or did no more than merely push, shove, grab, or threaten an opponent. Each respondent is asked to report incidents in which he was so angry that he wanted to hurt someone; incidents in which he pushed, shoved, grabbed, or threatened someone; incidents in which someone pushed, shoved, grabbed, or threatened him and did not attack; those in which someone encouraged him to use violence; incidents in which he witnessed an attack and thought he might become involved; and any other situation in which he felt there was a high risk for him to become involved in violence.

After the incidents were located on the 36 month LEC, the details of the 30 most recent incidents were gathered, including ten total robbery incidents, ten total physical confrontations, and ten avoided violent incidents.

Incident Reports: Once the respondent placed these events on the calendar he was asked to describe each event in his own words and was told to include any and all details relevant to the situation. Interviewers types, word-for-word, the inmate's stories, at times asking the respondent to slow down, stop for a moment, or to clarify details. After the inmate provided the narrative, the interviewer and respondent completes a standardized

report designed to gather specific details about the event (Appendix A). Similar instruments were used to gather details for the ten most recent avoided violent incidents and then for the ten most recent robberies.

After a maximum of 30 incident reports were completed, the final portion of the interview began. These sections included questions about the following topics: relationships, child discipline, respondent's self-control, respondent's criminal history, respondent's childhood, and respondent's reactions to hypothetical scenarios.

Self-Report Data

In the late 1970's, Petersilia, Greenwood, and Lavin (Chaiken and Chaiken 1982) of the Rand Corporation undertook an important criminological research project that produced influential findings about patterns of criminal offending and advanced data collection methods. Their study used self-reported criminal behavior data collected from 49 interviews with California inmates convicted of robbery. In the years that followed, Rand collected self-report data from incarcerated offenders as part of two larger scale studies (Chaiken and Chaiken 1982).

One goal of their research was to improve upon the existing knowledge about criminal behavior that had previously been gained from official data sources (Simon 1991). Directly asking inmates about their criminal behavior proved to be an important method, to say the least, (Horney and Marshall 1991; Mande and English 1988; Miranne and Geerken 1991; Simon 1991) and one that led to new discoveries about patterns of criminal behavior (Chaiken and Chaiken 1982). While inmate self-reported data have their

advantages, they are not without their drawbacks. The advantages and disadvantages of this data source are presented below.

Advantages: There are numerous advantages associated with using self-reported information about criminal offending from samples of incarcerated offenders. First, it is important to point out what inmate self-reported data are not, because researchers consistently identify the deficiencies of commonly used data sources, specifically Uniform Crime Report (UCR) data and NCVS data.

Official data are filtered through a process, and although these data provide a comprehensive understanding of the crimes known to police, they have their problems and are not appropriate when a criminal event is the unit of analysis for two reasons (Block 1981). Reiss and Roth (1993:263) indicate that one of the reasons why little is understood about the nature of violent interactions and about the role of guns in these interactions is because "records of representative samples of assaults are difficult to construct, compile, and analyze." In order for a crime to be included in the UCR, it must first be reported to the police. This requires a citizen to report the incident or a police officer to witness the event and then respond. Second, a law enforcement agent must determine that a crime has actually taken place and then record the details of the incident. Unfortunately for researchers, law enforcement agents' jobs do not entail collecting information that researchers determine to be important. Most crimes that take place never come to the attention of the police and when information about crimes do become known to the police, they do not contain the level of detail that researchers require. General

population surveys about criminal victimization provide a great deal of information about crimes that go unreported to and uncovered by law enforcement agencies. The NCVS is sponsored by the United States Census Bureau and collects information about criminal victimization incident that citizens have suffered. In 1994 the Census Bureau used a sample of 47,600 households and interviewed approximately 90,000 individuals about their victimization experiences (U.S. Department of Justice 1997). While these data provide an understanding of crimes unknown to police they are not well suited for testing weapon effects.

First, victimization survey data do not contain information about offenders' situational intent to harm. The best researchers can do is make questionable assumptions about what offenders hoped to accomplish. The limitations of these proxy measures have been described in the literature review section. Second, victimization data are suspected of under representing the number of gunshot wounds that victims suffer. Cook (1985) concluded that the estimates of gunshot wound death rates derived from NCVS data are low by a factor close to three, in relation to that known to the police. He attributes this, in part, to the fact that the NCVS sample under represents people who have a high likelihood of being the victim of a non-trivial violent crime. Thus, using NCVS data does not adequately overcome the limitations associated with official data.

The specific limitations associated with situational assault research that has used UCR and victimization survey data have been described in the previous chapter. It is sufficient to say that these data sources are important but allow only limited ability to

isolate weapon effects in violent encounters. Now that we know what inmate's self-reported data are not, their specific advantages can be described.

One important advantage of an inmate sample is that the population is at high risk for being involved in non-trivial violent crime and in firearm related incidents (see Steadman and Felson 1984). Kleck (1997:3) cites evidence to indicate that "most gunshot victims are criminals." This helps overcome the problem of under estimating violent incidents that involve guns. Second, the data collection methods have the goal of obtaining information that is necessary for testing weapon effects, unlike official records data and victimization survey data. For instance, respondents are asked whether they intended to seriously injure the opponent and whether they would have attacked an opponent if they had a gun. These data are being collected with the goal of isolating weapon effects in violent situations.

The data collection method also overcomes definitional problems. Respondents are asked to describe "physical confrontations" and are provided with detailed descriptions of these incidents. This is an advantage over asking respondents if they committed any "assaults" because inmates may not define certain violent encounters as "assaults." For instance, respondents might not consider self-defense attacks or perceived justified attacks as "assaults" and they may not report trivial incidents in which combatants walked away with black eyes. The sample size and the number and types of incidents collected provide a large sample of heterogeneous incidents.

Disadvantages: This data source is not without limitations. A common

misperception about these methods is that inmates are untruthful. A primary problem is that one can never completely know whether someone is lying. Nonetheless, the existing research, described below, suggests that inmate self-reported criminal behavior is reasonably valid. In addition, it is not possible to generalize findings to the general population. There is a trade-off between using a high risk population to gather a large number of heterogeneous incidents and being able to generalize findings to a broader population.

Reliability and validity of inmate self-reported data: There is a wealth of research on the validity and reliability of self-reported delinquent and criminal behavior (Chaiken and Chaiken 1982; Huizinga and Elliott 1986; Junger-Tas and Marshall 1997; Simon 1991; Wentland and Smith 1993). Primary attention is given to adult inmate self-reported data because these are used in the proposed project.

Self-reported offending data have been gathered from adult inmates as part of several research endeavors (Chaiken and Chaiken 1982; Horney and Marshall 1991; Mande and English 1988; Miranne and Geerken 1991; Simon 1991). While the collection methods differ, the reliability and validity estimates that these studies have produced allow insight into the level that is expected to emerge from this study. Generally, these projects have also gathered official records to assess validity and have examined internal response patterns to assess reliability. Reliability and validity are not entirely separable, "no measure can be valid without also being reliable, but a reliable measure is not necessarily a valid one" (Bohrnstedt 1983:74).

Reliability: Reliability concerns the consistency of responses to similar measures by individuals (Bohrnstedt 1983; Huizinga and Elliott 1986; Mande and English 1988). An instrument is reliable if it produces similar results across different measures of the same construct, such as IQ, criminal behavior, and propensity to use violence. Bohrnstedt (Bohrnstedt 1983:73) defines reliability as "simply the ratio of true score variance to the observed variance." A reliable item measures the construct of interest consistently over time and place.

Bohrnstedt (1983) identified and described two major groups of reliability measures: stability and equivalence. Stability indicators reflect the consistency of responses across time, also known as test-retest reliability. This form of reliability is of less concern because the project's data are not being gathered at different points in time, rather, the data are being gathered in a cross-sectional manner. Although respondents are asked to recall information about events across time in the past, this information is gathered during a single interview. Responses can not vary across time because there is only one time, one interview. Therefore, the second type of reliability that Bohrnstedt (1983) identifies, *equivalence*, is most relevant.

Equivalence measures, also known as internal consistency measures, assess the consistency of parallel measures at one time. This method of assessing reliability assumes that the two selected comparison measures equally reflect the underlying construct of interest. Internal consistency measures are predominantly used to assess reliability (Bohrnstedt 1983). For instance, a respondent is asked to report when and the number of

times he committed a specific crime at two different points in a survey or interview. Inconsistencies indicate a low degree of reliability.

Validity: The validity of self-report data refers to the extent that the instrument measures what it is supposed to measure (Bohrnstedt 1983; Huizinga and Elliott 1986; Mande and English 1988). An item's "theoretical validity" is the correlation between the observed item and the latent construct of interest, while "empirical validity" is the correlation between two observed measures (Bohrnstedt 1983:73). A valid item should measure, and only measure, the construct of interest. A common way of assessing the empirical, or criterion validity of inmates' self-reported offending behavior is to compare self-reported information with that of official data (Chaiken and Chaiken 1982; Huizinga and Elliott 1986; Marquis 1981; Miranne and Geerken 1991; Simon 1991). Huizinga and Elliott (1986) identify two general problems with assessing validity with record checks. First, it is difficult to match self-reported behaviors with those contained in official sources. The interviewer must determine whether the respondent is the same person recorded in the official report and then match the details contained in each source (Miller and Groves 1985). Second, checks can only be made for people who have committed offenses that have come to the attention of police and offenses that have been recorded, making it impossible to check the validity of responses by people without an official record. Finally, records data may be inaccurate. Nonetheless, comparing self-report data with official records data is a common way of evaluating the validity associated with inmate surveys.

Research: Major research projects have analyzed the reliability and validity associated with self-reported criminal behavior data and have come to several important conclusions. The Rand Corporation conducted face-to-face interviews with 49 male, California inmates in the middle 1970's (Petersilia 1978). For each of three time periods (juvenile, young adult, adult), respondents were asked to report the number of times they committed each of nine specified crimes as well as the number of times they were arrested and convicted for each of the nine target offenses.

Petersilia (1978) points out that there is no practical method for assessing the validity of self-reported *crime commission rates* because official records data only provide insight into the validity of reported arrests and convictions. Official data were compared with self-reported dates of arrest, charges, and convictions in order to estimate the validity of the self-report information. Self-reported arrests and convictions were considered 'validated' if the official report listed an arrest or conviction for the same type of crime during the dates specified at the beginning and the end of each of the three periods.

Official records were obtained for 47 of the 49 inmate respondents. Comparing the number of self-reported with the number of official data arrests for the nine crime types indicates that inmates reported 63 percent of the arrests contained in the official records. Similarly, 74 percent of the convictions in official records were self-reported and 88 percent of the number of crimes that resulted in a conviction were reported to interviewers.

While these results appear favorable, they are somewhat weakened when each of

the three periods and crime types are examined. Convictions during the juvenile period were under reported, so this period was deleted from further validation procedures. Robberies and rapes were the crimes most accurately reported, while grand larceny, aggravated assault, and auto theft were the three crimes least likely to be reported[1]. This led to the conclusion that less serious events and events that were less consequential for the offender were reported less accurately.

The Rand Corporation sponsored a later study of inmate self-reported offending not long after their study of 49 California inmates. Commonly known as the second Rand inmate study, researchers obtained a total sample of 2,190 inmates from prisons and jails in Texas, California, and Michigan. Respondents completed paper and pencil, self-administered questionnaires about a variety of criminal activities and drug use. Chaiken and Chaiken (1982) assessed the validity and reliability of these data with general summary measures of external reliability (*validity*) and internal data quality (*reliability*). They used composite measures on the assumption that any single item does not adequately represent the degree of honesty and accuracy of inmates' responses.

Chaiken and Chaiken (1982:227) did not rely on the "magnitudes of difference scores between self-report and official record" to gain a validity estimate. Rather, they (Chaiken and Chaiken 1982:228) developed "allowable ranges of error" to account for the number of crimes reported and differences between self-reported and official data sources.

1

Petersilia (1978) does not provide details about how these offenses were defined.

Fourteen comparisons between self-report and official data were made to assess the validity of their self-reported data.

Chaiken and Chaiken (1982) constructed an overall "bad" validity measure based on the proportion of comparisons a respondent failed or mismatched. The first indicator is a comparison of self-reported arrests for the nine target crimes and the official arrest records for those offenses. A measure is "bad" if the difference between the data sources is two or more arrests for any one of the nine crimes. Chaiken and Chaiken (1982) do not provide justification for choosing two or more arrests as the criteria that defines a "bad" measure. Nevertheless, close to 28 percent of the respondents failed this validity measure.

The second measure allowed for a wider range of error, but also compares self-reported and officially recorded arrests for each of the nine target crimes. This measure controlled for the opportunity that respondents had to provide inaccurate responses. If half or more of the self-reported crime types exhibit a difference of two or more arrests when compared to the official records, then this indicator is "bad." Only 7 percent of the responses were determined to be "bad." The next indicator concerns the offense for which the respondent is incarcerated and a respondent "fails" this measure when there is any discrepancy. Twenty-six percent of respondents failed this measure. Chaiken and Chaiken (1982:231) permitted an allowable range of errors to exist on this measure and then examined the inconsistencies. In determining the allowable range of inconsistencies, the researchers examined an individual's self-reported record and his official records. They compiled the commitment offenses listed in both sources and then compared the two

lists. If half or more of the commitment offenses were listed in one source and not listed in the other source, then this case was identified as "bad." Only 11 percent of cases were determined to be "bad" when the authors allowed for this range of errors.

The remaining 14 indicators are straightforward comparisons between self-reported and official data measures: age at first arrest (two years or more indicates "bad"); juvenile criminal records; commitments to a juvenile facility; parole or probation revocations; number of prison terms served; number of categorized felony convictions; the last month of measurement period; age at the time of the survey (more than one year difference indicates "bad"); race of respondent; and categorized level of education (more than one category difference indicates "bad"). The age at first arrest measure was associated with the highest percentage of "bad" responses (37 percent) while the race of respondent was associated with the lowest percentage of "bad" responses (3 percent) (Chaiken and Chaiken 1982).

Most respondents were considered bad on one to three of the 14 indicators. The average respondent had a "bad" score on 2.75 measures. It was rare for a respondent to get a bad score on six or more measures (6.7 percent of the cases) and no respondents were "bad" on more than nine indicators. Based on these comparisons, self-reported information appears to adequately match that contained in official records, even though there is a degree of divergence.

As a final summary measure of validity, Chaiken and Chaiken (1982) divided the number of "bad" validity measures by the number of applicable indicators for each

respondent. The authors controlled for the opportunity each respondent had to make errors. The authors excluded respondents whose official record were missing six or more validity indicators from this final summary measure. On average, approximately 23 percent of the validity indicators were considered "bad" for each respondent.

Chaiken and Chaiken (1982) also focused on 27 indicators of internal quality, or *reliability*. Generally, they constructed three categories of indicators: measures of consistency, confusion, and omission. Based on the results of these indicators, they (Chaiken and Chaiken 1982:237) conclude that "most of the indicators of consistency have reassuringly low error rates, especially considering the fact that the comparisons made in the indicators often derive from questions located many pages apart in the survey instrument."

The eleven confusion measures were selected from questions associated with skip patterns, multiple response patterns, and opportunities for illogical responses. With one exception, respondents exhibited "very low error rates" (Chaiken and Chaiken 1982:239). The exception is a question that asks respondents to think about a period of time two years prior to the reference period. Thirteen of the fifteen measures of omission were matched with consistency indicators and the measure was deemed "bad" if the inmate failed to respond to an item that is necessary to conduct the consistency check.

Chaiken and Chaiken (1982) compiled 27 indicators of internal data quality and found that, on average, each respondent was found to provide "bad" responses on 2.9 of the 27 indicators. Approximately 15 percent of respondents exhibited no "bad" internal

measures, about 21 percent exhibited one "bad" indicator, and an additional 20 percent exhibited two "bad" indicators. Thus, about 56 percent of the respondents failed on 2 or fewer of the 27 internal data quality measures. Similar to their overall validity measure, the authors constructed an overall reliability measure in order to control for the opportunity to provide unreliable responses. On average, each respondent failed 11.9 percent of the applicable reliability indicators. The reliability evidence suggests that respondents provided consistent responses during the survey.

Finally, the authors wanted to determine whether their validity and reliability measures were related to respondent characteristics. First, the summary measures of reliability and validity were highly and significantly ($p < .001$) correlated.[2] Second, self-reported conviction crimes were correlated with reliability indicators. Respondents who reported that their conviction offense was auto theft had a bad reliability measure for their current conviction crime and had bad overall consistency indicators. Respondents who reported that their current conviction offense was burglary had better reliability measures. Finally, respondents who reported a current drug sales conviction offense had a significantly greater number of omissions.

Age was found to be associated with both groups of measures. Generally, older respondents had a better match between official data and self-reports than did younger inmate respondents. Older respondents were less accurate than younger respondents in

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Correlation coefficients were not reported.

terms of self-reported age and total number of prison terms. Although older respondents had more omissions that did younger respondents, older inmates had fewer inconsistencies. Finally, "the internal quality of responses by older respondents was significantly lower than for younger respondents" (Chaiken and Chaiken 1982:244).

Levels of education were not an important factor. Those with higher levels of education were similar to those with less education, generally. One difference, however, related to reliability. Those with higher levels of education were better able to follow the survey skip patterns and had fewer omissions than did less educated respondents.

Mexican and Latino respondents were no different in terms of reliability and validity than any other respondents. Black respondents were no different in terms of validity, but were worse in terms of reliability. Specifically, black respondents were worse on confusion and inconsistency. Similarly, the self-reported crime commission rates of respondents was not associated with validity and reliability, with the exception of assaults among Michigan respondents. Michigan inmates who reported committing assaults at high rates had low validity.

In conclusion, Chaiken and Chaiken's (1982) results reveal that inmate responses to paper and pencil questions about offending are both valid and reliable. With the few exceptions regarding education, age, race, and crime involvement, there appear to be few relationships between respondent characteristics and validity and reliability.

Mande and English (1988) surveyed Colorado inmates in a manner similar to Rand's second inmate study. They closely followed the precedent set by Chaiken and

Chaiken (1982) for assessing validity and reliability. Self-administered, paper and pencil questionnaires were administered to 313 Colorado inmates at the diagnostic unit and two jails in 1986. English (1988) computed individual data quality scores to reflect the percent of inconsistent responses associated with each case for both reliability and validity indicators. The formula used to calculate the quality score for each case involved dividing the number of items that did not match by the number of items that did match (English 1988:90). English (1988:90) indicates that Chaiken and Chaiken's (Chaiken and Chaiken 1982:247) method for deciding which respondents had good and bad quality scores was used: "the cutoff for 'good' reliability was set in such a way that approximately 20 percent of respondents for whom the summary external reliability indicator could be calculated fail the requirement, and similarly for internal quality."[3]

Validity was assessed with ten indicators and, consistent with the Rand technique, a mismatch is counted if there is a discrepancy between the self-report and the official record and also if information is present in the official record but was not provided in the self-report.

Regarding the incarceration offense, 73 percent of the respondents provided responses that matched official records. This was very close to the 74 percent match rate that Chaiken and Chaiken (1982:229) found. When the exact age at first arrest item was examined the error rate was about 84 percent, but when a two year range was allowed, 46

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No further details are provided about how this cutoff was decided upon in Chaiken and Chaiken's report (1982). English (1988:90) suggests that the cutoff is somewhat arbitrary.

percent of the responses were inaccurate. This, again, mirrored the earlier Rand results. Next, the age at first conviction comparison, allowing for a two year departure in either direction, revealed that 44 percent of the responses were in error. The authors suggest that memory decay might be the source of errors on the age at first arrest and conviction items.

Nearly 76 percent of the respondents provided matches on the number of probation or parole revocations. English (1988) suggests that there is a high degree of consistency between the sources for this item due to the objectiveness of the items. Nonetheless, about 28 percent of the respondents provided matches on the number of prior prison terms, even though this item also appears to be objective. Close to 36 percent of the cases matched on the number of felony convictions. Mande and English (1988) eliminate these two (number of felony convictions and number of prior prison terms) items from their final validity tabulation due to wording inconsistencies between the self-report questionnaire and the official data collection form. This discrepancy may account for the relatively low percent of cases that matched on these latter two measures.

Approximately 62 percent of the cases matched on the month of arrest for the current offense. When the authors permit a one month error range, 76 percent of the cases match. Ninety-two percent matched for the data of birth item, 89 percent matched on race, and 54 percent matched on education. When the range of allowable error was increased to one education category departure, roughly 95 percent of the cases produced a match. English (1988:100-101) notes that some confusion about the use of the term

"Anglo" for a racial category may have been responsible for the rather low match rate on the respondent race item. It is interesting to note that the Rand researchers achieved a 97 percent match rate on respondent race when they used the term "white" rather than "Anglo" (English 1988:101).

The number of validity comparisons for each case varied, depending on missing data. Close to 75 percent of respondents had no missing items in their official records. Fifteen percent of the sample had perfect matches on all eight items and 42 percent of the cases had one or no discrepancies. Disregarding the age at first arrest and age at first conviction items, the authors conclude that their validity results closely match those of Chaiken and Chaiken (1982). Thus, Colorado inmates appear to have provided valid and reliable data.

English (1988) also examined possible relationships between the validity indicators and several respondent characteristics. Like Chaiken and Chaiken (Chaiken and Chaiken 1982:243), English (1988) found a weak, but significant, negative relationship between the age of respondent at the time of the interview and errors. Also, similar to the Rand, English (1988) found no significant relationships between education and indicators of validity and between race and validity measures.

Self-reported criminal history measures, on the other hand, were found to be associated with data validity indicators, similar to Chaiken and Chaiken's (1982) findings. The age at first arrest and conviction measures are both negatively related to data validity errors, although the number of arrests, prior jail terms, and prior prison terms are all

positively associated with validity errors. "These data suggest that an active criminal history is weakly related to either the quality of official record data or self-reported data or both" (English 1988:106).

English (1988) found a negative association between the year the respondent was arrested for the incarceration crime and data validity, the more recent the arrest, the more valid the data. "This finding supports the common sense approach that the time period of interest should occur as recently as possible for the study subjects" (English 1988:107).

With one exception, there is no relationship between the calculated data quality scores and self-reported crime commission rates (λ). The exception exists among respondents who report committing fraud ($r = .21$). As reported fraud commission rates increase, the level of inconsistency between official and self-report data decreases. English (1988) also compared the median self-reported annual offending rates on nine crime types for the entire sample of Colorado respondents with the offending rates for the group of respondents with high data quality (defined as 80 percent of the total sample) and with the offending rates for the group of respondents with low data quality (defined as 20 percent of the total sample). Median self-reported drug offending (selling or manufacturing) rates varied across the groups, leading English to suggest that drug offending rates should be interpreted, generally, as an indication of how frequently a person commits drug offenses. With the exception of fraud and auto theft, the median rates of self-reported offending were consistently higher for the low data quality group than for the high data quality group. English (1988:110) concludes that respondents who provide data that are

inconsistent with data in their official records either report committing crimes at higher rates or actually commit crimes at a higher rate than respondents who provide more consistent data.

English (1988) followed the precedent set by Chaiken and Chaiken (1982) for assessing reliability, or internal data quality. In the absence of measurements across time, internal consistency checks are appropriate. English (1988) utilizes 36 items to assess reliability (1988) and Mande and English (1988) found, similar to Chaiken and Chaiken (1982), that, generally, inmate self-reported data are both valid and reliable. In addition, data validity and reliability are not strongly associated with respondent characteristics, such as age, race, education, and criminal involvement.

Simon (1991) also compared official and self-report to assess the validity of the self-report data she gathered from a sample of incarcerated violent felons in Arizona. Bias scores were used to reflect the direction and degree of discrepancy between the official and self-reported data. A positive bias score, however, can indicate under reporting in the official records *and* it can also reflect over reporting in the survey. Simon (1991) did not clarify how it is to be determined which situation exists. Therefore, this measure is less than desirable and does not offer insight into which situation exists.

Simon (1991) computed and examined three bias scores: 1) single item scores, 2) respondent scores, and 3) summary scores. Single item bias scores reflect the bias associated with a single survey item averaged across all respondents with complete interview and record data; respondent bias scores are single item bias scores averaged

over sets of items in sections of the survey for individuals; and summary bias scores provide general information about single item bias scores for particular sections of the survey.

Summary bias scores indicate that respondents under reported conviction offense items by about 5 percent. Individual item bias scores suggest that there was not a great deal of discrepancy between survey and record data. The one category where there was a significant discrepancy was for the "other" offense category. Respondents reported 26 percent fewer convictions for the "other" offenses category for which they were incarcerated. Simon (1991) argues that the source of this under reporting is unclear, but results indicate that self-reported conviction information matches that contained in records data.

Summary bias scores indicate that the difference between the total number of self-reported and official record arrests across the nine crime categories are not significant. In terms of whether there was an arrest or not, Simon (1991) found a significant difference between official and self-report data and concludes that bias problems are primarily a function of whether an arrest occurred rather than problems with the frequency of arrests.

Examination of the item bias scores for whether or not an arrest occurred for the nine crime categories indicates two minor crime categories (theft and nonviolent others) are associated with the largest and only significant biases. Simon (1991) hypothesizes that these relatively trivial offenses are not as salient for these inmates as are the more serious offenses. Finally, arrest frequencies for each the crime categories indicates that none of

the bias scores are significant. Simon's (1991) analysis of bias scores provides further evidence that suggests inmate self-reported data are valid.

Finally, Miranne and Geerken (1991) used a modified version of the Rand survey instrument to conduct face-to-face interviews with 200 male inmates in a New Orleans jail. Their sample comes from the population of male inmates with at least one burglary arrest from 1973 to 1985. The reliability and validity checks these authors reported (Miranne and Geerken 1991) are less extensive than those reported by Rand researchers but are insightful, nonetheless.

To understand the reliability and validity of their data set, Miranne and Geerken (1991) used internal and external checks. They argue that the internal consistency, or reliability, check was because of laziness and confusion rather than outright deception. Forgery, fraud, and arson exhibited the greatest degree of consistency in reporting, ranging from 92 to 100 percent. Burglaries, robberies, and auto thefts were also consistently reported, 80 percent, 82 percent, and 88 percent, respectively. The lowest level of internal consistency was associated with assaults and drug deals. Seventy-two percent of respondents reported perfectly consistent for each of these two crimes. The authors (Miranne and Geerken 1991) concluded that the face-to-face interview method produced better internal consistency than that produced with self-administered survey methods.

Each respondent's official records were compared with his self-reports in order to understand validity. Twenty-five percent of the inmates who were incarcerated for a

burglary charge did not report that conviction. On the other hand, 11 percent of the inmates who reported that they were incarcerated for a burglary charge were incorrect.

Felson et al. (1985) compared official versions and offender versions of violent crimes. A sample of 500 respondents were drawn from New York State Correctional Facilities in 1977 and 1978. These respondents were convicted of felonious assaults, manslaughter, and murder. The analysis is limited to 104 incidents that resulted in each offender's incarceration and those for which an official version and a respondent-reported version existed. Two individuals independently coded these incidents and produced a 76 percent inter-rate reliability. The variety of actions that were coded were collapsed into nine general categories: 1) physical attacks, 2) influence attempts, 3) non-compliance, 4) explicit identity attacks, 5) threats, 6) evasive actions, 7) mediation, 8) instigation, and 9) argument.

Comparisons show that the offender reported that he made significantly fewer attacks than the official versions of the incidents. Felson et al. (1985) noted, however, that the difference is small (8.7 percent) in light of the fact that these behaviors caused the offender to be incarcerated. Comparisons also indicated that significantly fewer victim attacks were recorded in the official versions of the crimes than in the offender's report of the incident. Victims made physical attacks in nearly 68 percent of the incidents, according to offender versions of the crime while victims made physical attacks in close to 33 percent of the officially recorded incidents. In addition, results indicate that respondents report that they made more mediating behaviors than official reports and

respondents indicated that victims made more threats and that victims made fewer mediating actions than did the official versions of the incidents. This project is less susceptible to such discrepancy problems because respondents are explicitly asked to report aspects of the situation that respondents may have failed to mention in their narratives.

Summary

Even though conversations with a wide range of people suggest that inmates will lie about aspects of their lives and will deceive interviewers when asked about their criminal behavior, empirical research implies that inmate respondents do furnish valid and reliable information. Petersilia's (1978) comment at the beginning of this chapter remains true today. It is commonplace to recognize inmate self-report data as insightful and useful. Existing official data and general population survey data are not sufficient to test hypothesized weapon effects. This project utilizes a previously unavailable data set that is expected to be valid and reliable and that will provide a wealth of data about information that is necessary to understand weapon effects in violent and potentially violent encounters.

Hypotheses, Measures, and Statistical Models

This chapter describes the hypotheses, measures, and analytic methods used to address the persistent questions. The hypotheses to be tested derive from the compensation hypothesis, from the argument that the instrumentality effects of guns facilitate violence, and from the notion that gun effects depend on their possessor's intentions. The measures used are based on theoretical propositions about the influences that affect the outcomes of social situations. The analytic methods take into account the nested data structure and the social interactionist's theoretical approach.

Hypotheses

Main effects: Guns and situation-specific intentions are believed to have important effects on the outcomes of social conflict situations. Empirical analyses that do not separate the effects of situation-specific intent to injure and gun possession and use might misestimate the effects of guns. Gun effects may be overstated, it is argued, because intent to injure and gun possession and gun use are closely related (Kleck and Bordua 1983; Kleck and McElrath 1991). Because people with serious intentions to injure will obtain the necessary tools for the job, gun users are believed to have stronger intentions to injure their opponents. Therefore, the effects of intent and the effects of firearms on incident outcomes are confounded. Gun effects are expected to be different when situation-specific intent to injure is controlled than when intent to injure is not controlled.

Interaction effects: The effect of a gun on the attack and injury outcomes of conflict situations may depend on the possessor's intent to do harm. In other words, gun

effects on situational outcomes are expected to vary with different degrees of intent to harm. The compensation and instrumentality explanations are used to make predictions about the pattern of interaction effects. The compensation hypothesis predicts that the interaction of intent and gun use/possession will have a significant effect on the likelihood that a respondent will attack and injure an opponent[4]. Wolfgang (1958) argued that few homicides could be avoided if guns were not available because people who intend to harm others will do so even when they lack an effective tool. In other words, if a person intends to attack and injure an opponent but does not possess a gun, he will compensate for the lack of an effective tool by exerting a stronger physical effort. He will make strenuous efforts to attack a target and will attack more ferociously in order to cause harm. According to the compensation hypothesis, then, the effect of a gun will be *weaker* when the gun possessor or gun user intends to seriously injure an opponent than when the gun possessor or gun user does not intend to seriously injure an opponent because people without guns who intend to harm their targets will do so by making stronger efforts to attack and injure (see also Felson and Messner 1996:525; Kleck 1997:233, 235).

A specific form of the weapon instrumentality hypothesis, the weapon facilitator

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This interaction could be interpreted to mean that the effect of intent on the likelihood that an opponent would be attacked and injured could depend on the presence of a gun rather than that the effect of a gun depending upon individual intentions. In other words, the respondent may think, in retrospect, that because he had a gun he must have intended to seriously injure the opponent. Although this argument is plausible it seems intuitively unlikely, especially because a significant number of inmate respondents in Wright and Rossi's (1986) sample reported that they carried/used a gun in order to avoid violence. Apparently gun possession/carrying did not inhibit their inmate respondents from indicating they carried/used guns in order to *avoid* violence.

hypothesis, as described by Kleck (1997:220-222), can explain a portion of this predicted interaction as well. This facilitation thesis states that guns make it so attacks can occur in situations where none would occur if the gun were not present. For example, the properties of a gun make it so that weaker people can attack stronger individuals, lone individuals can attack groups of people, gun possessors can make multiple attacks in a short period of time, and possessors can attack from distances that would otherwise prohibit attacks (Zimring and Hawkins 1997). Based on this facilitator notion, guns are expected to have *stronger* effects when intentions to injure are weak. Gun properties make it easy for an attack to occur, in relation to other methods of attack, even when the gun possessor does not intend to seriously injure an opponent.

Attacks: Figure 1 portrays the predicted pattern of interaction effects of guns and intentions on the probability a respondent will attack an opponent.[5] Based on the compensation hypothesis, the presence of a gun should have a weaker effect on the likelihood that a respondent will attack an opponent when the possessor intends to seriously injure an opponent than when the possessor does not intend to seriously injure an opponent. Actors who intend to injure their opponents, but who do not possess a gun, will make stronger efforts and attack their opponents. The firearm facilitation thesis suggests that guns will have strong effects when intent is weak. The properties of a gun

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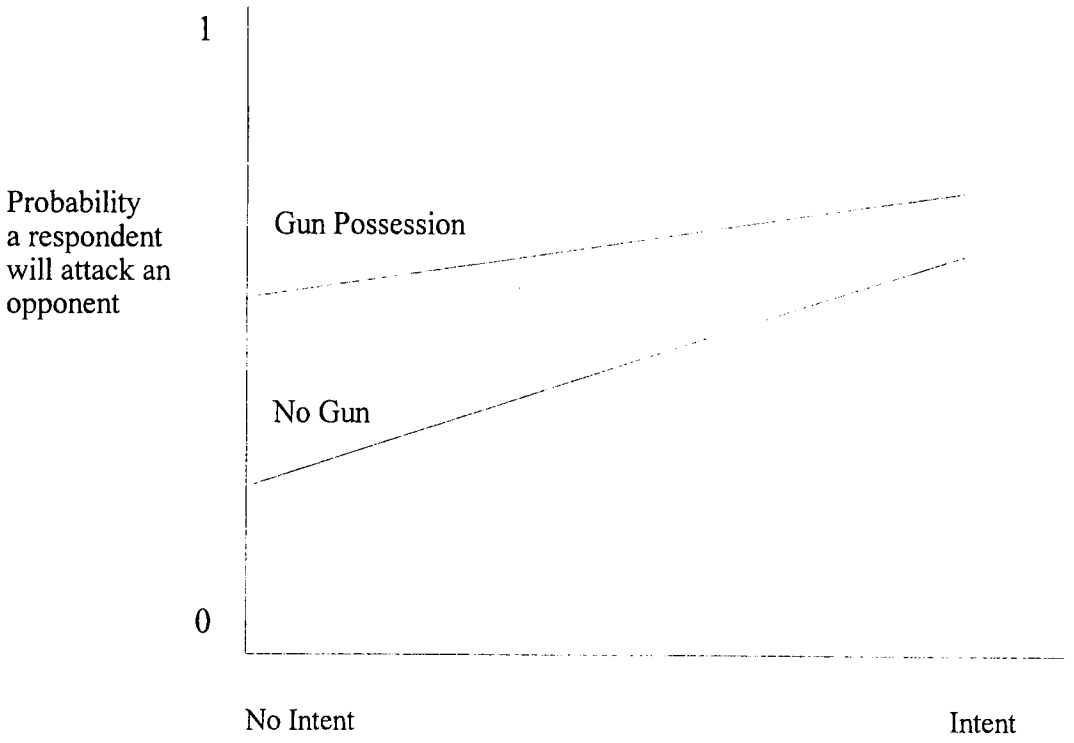
For purposes of illustration and for simplicity, regression lines are used for graphical representations rather than multidimensional regression planes. Regression planes are implied by multivariate equations while lines are implied by bivariate equations. Regression lines are useful, however, for demonstrating the expected relationship between two variables.

increase the chances an attack will occur when the possessor does not intend to do serious damage. According to this logic, it would seem to be difficult for a person without a gun to accidentally attack an opponent. Figure 1 illustrates these ideas by the increasingly smaller differences between the lines as intentions to injure become stronger.

Figure 1. Predicted interaction effect of gun possession and intent to seriously injure on the probability a respondent will attack.



Injuries: Figures 2a and 2b portray the expected interaction effects of gun possession and gun use on the probability that a respondent will injure an opponent. The different angles, or slopes, of the regression lines demonstrate that weapon effects differ across the levels of situational intent to harm, they are not constant. Again, the firearm facilitation and compensation hypotheses are the bases for this predicted interaction pattern. The compensation thesis predicts weak gun effects when people intend to seriously injure opponents and the firearm facilitator thesis predicts strong gun effects when people do not intend to seriously injure opponents. The increasingly smaller

differences between the lines as intentions to injure become stronger illustrates these hypotheses.

Figure 2a. Predicted interaction effect of gun possession and intent to seriously injure on the probability a respondent will injure an opponent.

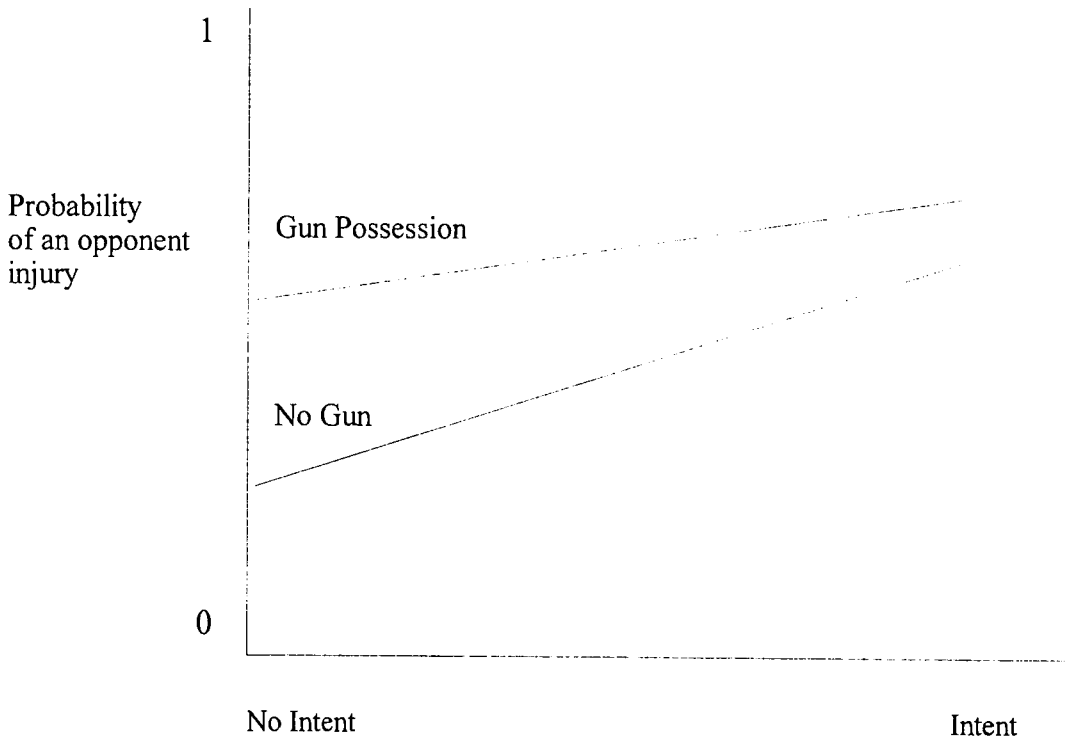
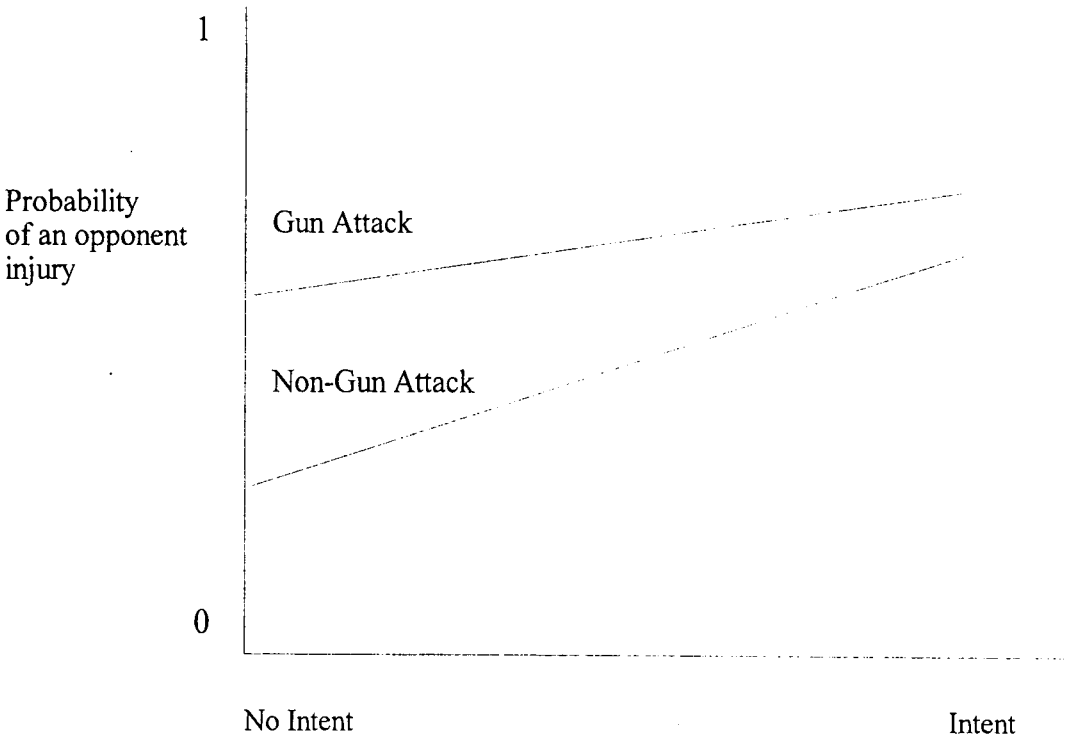


Figure 2b. Predicted interaction effect of gun attack and intent to seriously injure on the probability a respondent will injure an opponent.



Figures 3a and 3b follow the same logic as do the previous figures. These figures, however, represent the predicted interaction effects on the probability that opponent injuries will be severe rather than minor. Gun effects on the likelihood of an opponent being severely injured are expected to be strong when intentions to harm are weak, while gun effects are expected to be weak when intentions to harm are strong. The facilitator explanation proposes that the properties of a gun make it easier for people who lack the intent to harm opponents to inflict serious injuries. The compensation hypothesis posits that people with strong intentions to seriously injure their opponents will be able to do so whether or not they have a gun. Intending people will compensate for their lack of a gun

by exerting stronger efforts.

Figure 3a. Predicted interaction effect of gun possession and intent to seriously injure on the probability a respondent will seriously injure an opponent.

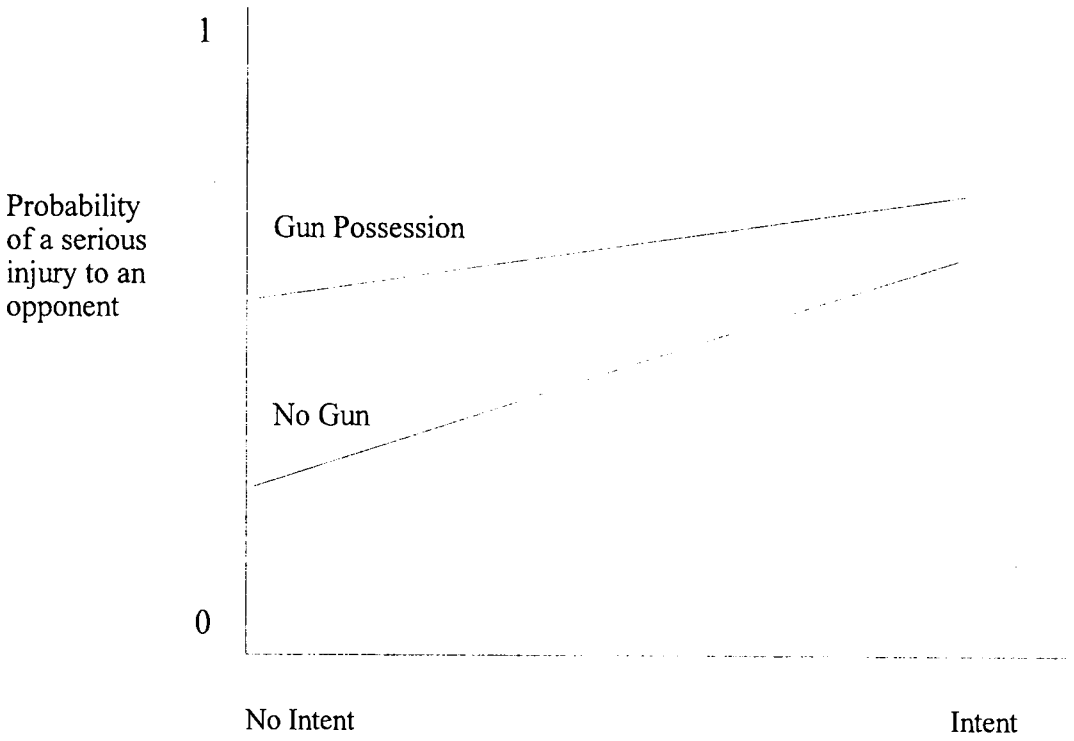
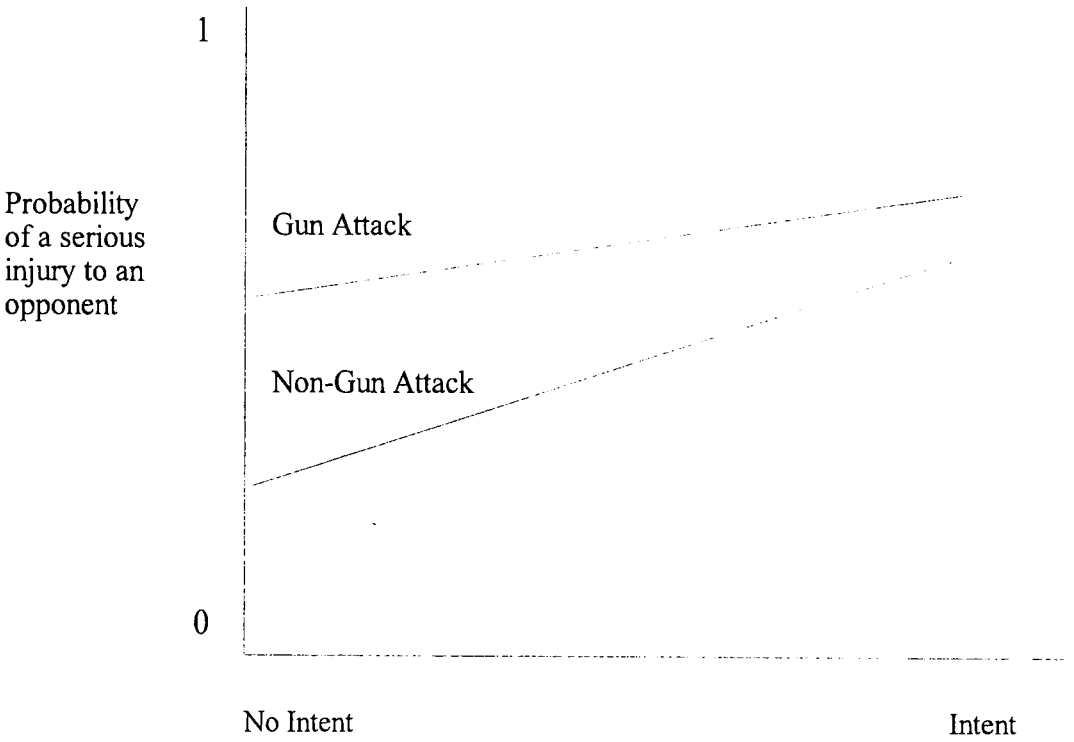


Figure 3b. Predicted interaction effect of gun attack and intent to seriously injure on the probability a respondent will seriously injure an opponent.



Measures

Dependent variables: This project focuses on two important situational outcomes: 1) whether or not an actor physically attacks or attempts to physically attack an opponent and 2) the opponent's resulting injuries. Kleck and McElrath (1991) critique the notion that guns, and weapons generally, are thought to have their most important effect on the likelihood that victims will be injured and killed. Instead they (Kleck and McElrath 1991) take a broader theoretical approach and argue that guns have different effects across the stages of violent encounters. For instance, guns may reduce the likelihood of an attack but gun attacks may increase the likelihood a victim will be injured. Furthermore, coercive

action theory (Tedeschi and Felson 1994) recognizes that a gun provides the power necessary for people to get what they want in situations, such as compliance, without having to actually attack. Kleck and McElrath (1991) argue that deadly firearm effects become overstated when research fails to recognize and address their potentially different effects.

As further justification for examining the attack stage of a violent encounter, evidence indicates that not all assaults captured in the NCS involve actual and attempted physical attacks. In addition to physical attacks, the NCS defines situations as assaults if an offender threatens a victim. Only about 11 percent of the NCS respondents who reported being attacked were hit with an object, attacked with a knife, or shot at (Skogan and Block 1983). Furthermore, Cook (1986; 1987) found that a significant portion of gun robberies follow a hold up pattern where offenders threaten but never attack targets. Therefore, it is appropriate and necessary to look at the attack stage *and* the injury stage of violent and potentially violent encounters in order to fully understand gun effects.

Attacks: The first dependent variable measures whether or not the respondent physically attacked or attempted to physically attack an opponent during the encounter. This measure is dichotomous and forces incidents into two categories. The first category includes situations in which the respondent did not make physical attacks and did not make attempted physical attacks. An encounter is considered a no attack situation if the respondent reported an incident as being a high risk, avoided violent encounter. Similarly, if the respondent is attacked and he does not make attempts to fight back, then this too is

considered a no-attack incident. Instances in which the respondent merely threatened an opponent and did not make an effort to attack that opponent are deemed non-attacks. For instance, if a respondent pulled a gun or a knife on an opponent, but never attacked that opponent, then this is a non-attack incident.

The second category of this outcome measure includes encounters in which the respondent reported that he attacked or attempted to attack an opponent. Included in this category, for example, are instances where the respondent punched an opponent, took a swing at an opponent but missed, hit an opponent with a bottle, tackled an opponent and hit the opponent, threw a brick at an opponent but missed, shot an opponent, and shot at an opponent but missed.

Injuries: The second important situational outcome concerns the injuries that opponents suffer as a result of attacks. The models used to predict the probability that an opponent will be injured will utilize the subsample of situations in which the respondent attacked or attempted to physically attack an opponent. To adequately assess these explanations, attempted attacks must be combined with successful attacks when examining the probability a respondent attack led to an opponent injury. This measure captures the range of potential attacks that could produce injuries. One argument proposes that people are not good shots and that few attacks with guns hit their targets, and thus, a majority of attacks with guns do not cause injuries (Kleck and McElrath 1991). The firearm facilitation explanation posits that properties of guns make it so that there is a greater likelihood that someone will be injured than if that gun were not present. Limiting this

measure to only successful attacks introduces a positively biased relationship between physical attacks (with and without guns) and the probability that the target of the attack will be injured.

Respondents indicated whether or not they injured an opponent as a result of their attack and then reported what happened to the opponent as a result of those injuries. For instance, a respondent could report that he attacked an opponent, the opponent sustained injuries, and that the opponent was hospitalized for those injuries. A respondent have indicated, on the other hand, that he attacked an opponent but the opponent was not injured.

Two dichotomous injury measures are used: injury versus no injury and minor injuries versus severe injuries. The first category of the first dichotomous measure includes cases in which the respondent reports that the opponent was not injured as a result of his attack. In these situations the respondent attacked or attempted to attack an opponent, but the target was not injured. The second category includes situations in which the respondent indicated the opponent was injured as a result of his attack.

The first category of the second dichotomy includes minor injury outcomes: encounters in which the respondent indicates he injured the opponent and the opponent did not receive medical attention, the respondent reported that the opponent lived, but did not know about medical attention, or the respondent reported he did not know if the opponent received medical attention. The second category of the severity of injury dependent variable includes severe injury cases. These are defined as situations in which

the opponent was injured and the respondent indicates that the opponent died, the respondent reports that the opponent was hospitalized, the respondent indicates he believes the opponent required medical attention, or the respondent reports the opponent received other medical attention.

A limitation of the severity of injury measure is that respondents report what happened to someone else as a result of the injuries they inflicted. These self-reports may not only be inaccurate, but the inaccuracy may be related to the type of wounds the opponent sustained. The respondent's belief about what happened to the opponent may be related to the type of injury they inflicted. For instance, respondents may be more likely to indicate that gunshot wounds resulted in the opponent requiring medical attention or requiring overnight hospitalization than other types of wounds or injuries.

This limitation does not, however, preclude the use of this measure. Because "most victims of nonfatal gunshot assaults are criminals" (Kleck 1997:3), this criminal sample should be familiar with gunshot wounds, either by personal experiences or through the experiences of their associates. Because this sample is assumed to be familiar with gunshots, they are likely to recognize that "the vast majority of gunshot wounds are not life-threatening" (Kleck 1997:4). This sample should be expected to recognize that all gunshot wounds are not the same and that some are more serious than others. It is realistic to expect those people who are unfamiliar or inexperienced with gunshot wounds will overestimate their severity and treatment requirements. It is, however, less likely that those people who are familiar with gunshot wounds, such as this sample of criminal

respondents, would overestimate the treatment requirements.

Independent Variables:

Firearm possession and use: The variable of primary interest is respondent gun possession and gun use. How does a respondent's gun possession affect the likelihood that he will attack or attempt to attack an opponent? During avoided violent incident reports respondents are asked if they possessed a weapon and interviewers record all the weapons that respondents possessed. These are weapons that the respondent did not use to attack because these are situations in which the respondent never physically attacked or attempted to attack an opponent. In the violent incident reports, the respondent may have attacked with a weapon or possessed a weapon that he never used in the attack. Again, all weapons possessed and weapons used to attack are recorded. Weapon categories include, for instance, semi-automatic handguns, revolvers, shotguns, sawed-off shotguns, semi-automatic rifles, fully-automatic rifles, knives, other sharp objects, and blunt objects. Firearm possession is measured with a dichotomous variable: gun possession and no gun possession.

Kleck and McElrath (1991) recognize that the mere possession of a gun does not necessarily mean that the gun was used in an attack. Rather than shoot an opponent, a gun possessor might strike an opponent with a fist or strike an opponent with a gun. Cook (1980:34) discovered that approximately one out of ten gun robbery victims is actually shot and that one out of five knife robbery victims is stabbed. Furthermore, attacks with guns do not imply that shooters hit their targets. Kleck and McElrath (1993)

argue that ordinary citizens should not be expected to hit their targets with great frequency since Fyfe (1979) found that trained police officers do not frequently hit their intended targets when they shoot. Kleck and McElrath's (1991) research supports this argument because they found a negative relationship between gun attacks and the likelihood of a victim being injured.

A critical factor in the analysis of injury outcomes is the form of attack. In violent incident reports respondents were asked to report the manner in which they attacked their opponent. For instance, a respondent could have indicated that he hit or slapped, he kicked the opponent, he stabbed/cut the opponent with a knife/sharp object, he hit the opponent with an object held in his hand (other than a gun), he hit the opponent with a thrown object, he shot the opponent, he shot at the opponent but missed, and he hit the opponent with a gun held in his hand.

This attack method variable is also measured with a single dummy variable. The first category measures whether the respondent shot or shot at an opponent, and the second category measures whether or not the respondent attacked in any other manner. This second category includes attacks with and without other weapons and attacks in which the respondent struck an opponent with a gun held in his hands. This variable is mutually exclusive so that if a respondent fired a gun and punched an opponent the measure is coded as a firearm attack. The reference category is non-gun attacks by the respondent. The form of attack is not included in statistical models that estimate the chances of an attack because the attack method measures imply that the respondent

attacked or attempted to attack an opponent. Furthermore, two statistical models will be estimated for the injury dependent variables, one including the gun possession measure and one in which the gun attack variable replaces the gun possession measure. This will allow for a comparison of results when a measure of possession is used and when a measure of an actual gun attack is employed. This is important considering that Felson and Messner (1996) used a measure of weapon possession while Kleck and McElrath (1991) used measures of attack method. Two models will be estimated to avoid collinearity that would result from including a gun possession variable and a gun attack variable in the same equation.

When testing for an interaction effect of guns and intent on the dependent variables it is appropriate to use a dichotomous weapon measure: gun possession / attacks and no gun possession / non-gun attacks. This measurement is important because a weapon instrumentality argument claims that guns are more dangerous than all other weapons and other forms of attack (Cook 1991:13-14; Zimring 1968:726). Therefore, it is important that gun effects be compared to the combined effects of all other weapons and non-weapons. This logic assumes that there is no interaction effect of intent and non-gun weapons on the outcomes.[6]

However, when interpreting the main effects of firearms it makes sense to use a dissaggregated firearm measure: gun possession / attack, non-gun weapon possession /

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The test for this assumption is left for future research.

attack, and no weapon possession / attack. Included in the non-gun weapon category, for instance, are situations in which a respondent possessed a knife, attacked with a bat, and attacked with a bottle. Included in the no weapon category, for example, are instances when the respondent did not possess any weapon and instances when the respondent attacked with this bare hands, kicked an opponent, and threw an opponent to the ground. It is appropriate to use this more refined firearm measure when examining main effects because it is possible that gun effects are different in relation to other weapons than they are in relation to non-weapon situations. Therefore, when other weapons and non-weapons are combined into a single category gun effects may be artificially inflated or reduced. For example, in relation to other weapons guns may have negligible effects but in relation to no weapons guns may have strong negative effects. In this instance the negligible effects would reduce the large gun effects that exist in relation to no weapons. Also in this instance, the large gun effects would enhance the negligible effects that exist in relation to other weapons. In another example, guns may have strong positive effects in relation to no weapons and strong negative effects in relation to other weapons. If a dichotomous gun measure were used in this example gun effects might appear to be nonexistent. Statistical models that test interaction effects use the dichotomous gun measure and models that test main effects use the trichotomous gun measure.

Intent to injure: The second critical independent variable believed to directly affect attack and injury outcomes, in addition to being related to gun possession and use, is the respondent's situation-specific intent to seriously injure the opponent. It is essential

that a measure of individual intent to harm be included in statistical models that isolate and estimate firearm effects on the likelihood of attacks and injuries. Furthermore, an inability to measure this variable and control for its effects in violent incidents has been a critical limitation of prior studies. During avoided violent incident and violent incident reports respondents were asked if they intended to seriously injure the opponent. This is a dichotomous variable and is included in statistical models for both dependent variables because intentions are believed to be important determinants of attacks and injuries.

This direct measure of intent is not, however, a panacea for the problems that have plagued research that investigates micro-level gun effects. A limitation of this measure is the fact that respondents are asked to report on their internal state of mind during an incident that may have occurred over 36 months previously. Self-reported intent to injure, therefore, may be inaccurate. Furthermore, self-reported situational-intent may be biased and related to the dependent variables of interest. Self-reported intentions may be biased because respondents might be more likely to report that they intended to seriously injure an opponent if they attacked and indeed injured their target. In this instance, the relationship or lack of a relationship between intent and attack and injury outcomes would be an artifact of the data collection method.

This potential problem does not preclude the use of this direct measure nor does it undermine the argument that this measure is an improvement on measures used in prior research. This measure goes to the source, the individual. This improves upon proxy variables that require researchers to make assumptions about intentions to injure based on

individual characteristics that are loosely linked, at best, to situation-specific intentions to do harm. This measure follows theory by allowing for variation in individuals' intentions across social situations. By using stable, individual-level characteristics as proxy controls for situation-specific intent, prior research has not permitted this construct to vary across conflict incidents.

Situation-level control variables: Apart from weapon possession and use, situation-specific factors affect whether the respondent will attack or attempt to attack an opponent. These also affect the injuries that the opponent sustains. The relative power advantages associated with actors involved in violent encounters is hypothesized to have an important effect on whether or not an actor attacks or attempts to attack an opponent. Although the focus in on how respondent weapon possession affects incident outcomes, opponent firearm possession is an important aspect of coercive power that must be measured and controlled. Opponent gun possession is controlled because a firearm provides a level of power that may reduce a respondent's willingness to use violence because he fears a counterattack. On the other hand, opponent gun possession may increase the likelihood a respondent will attack and seriously injure an opponent because he fears that the opponent will attack first and cause him injury.

Alcohol and drug use is frequently associated with aggressive behaviors (Fagan 1990) and can inhibit and promote the use of coercive actions in a social encounter (Tedeschi and Felson 1994:200-201). Nevertheless, because the causal relationship between intoxication and aggressive behaviors is not well understood (Fagan 1990:241),

the measure of respondent alcohol and drug use is utilized solely as a control variable. No predictions are derived about how respondent drug and alcohol use affects outcomes. Each respondent is asked if he used drugs and if he used alcohol before the incident. A binary variable is used to measure whether or not the respondent reported using drugs and/or alcohol prior to the episode. The reference category is no drug and/or alcohol use by the respondent.

Analytic Procedures

Assuming a social interactionist perspective, Campbell and Gibbs (Campbell and Gibbs 1986) argue that person- and situation-level variables interact to become important determinates of what transpires in violent and potentially violent encounters. Individuals have a lifetime of experiences and expectations that they take into a diversity of social situations. For example, a single individual takes his or her unique background into various settings, such as a classroom on a Monday morning and a seedy bar on a Friday evening. The interactionist approach argues that personal and situational attributes affect how the same person behaves across diverse situations. Previous micro-level gun research (Felson and Messner 1996; Kleck and Gertz 1995; Kleck and McElrath 1991) has been unable to separate and control for the theoretically different effects that situation-specific intent to harm and overall, individual willingness to use violence have on the outcomes of conflict encounters. This study controls for *both* situation-specific intent to seriously injure and overall, individual willingness to use violence.

When measures are gathered at more than one level of aggregation, the data are

deemed multilevel. Multilevel criminological data often consist of information about individuals and information about the neighborhoods and census tracts in which they reside (Rountree and Land 1996a; Rountree and Land 1996b; Rountree, Land, and Miethe 1994; Sampson, Raudenbush, and Earls 1997). Similar to this project, Horney et al. (1995) gathered information about multiple time points within individuals.

The data used were gathered so that respondents provided details about themselves and about multiple situations. Because measures were gathered about two units of observation, the person and the situation, these data are multilevel. Incidents are said to be nested within individuals because a single individual could find himself in a variety of incidents. Furthermore, incidents are nested within respondents because any and every incident belongs to a specific respondent. The units of observation at the high level of aggregation are known as level-2 units while the units at the lowest level of aggregation are level-1 units. Thus, inmate respondents are the level-2 units and the incidents are the level-1 units.

Hierarchical linear modeling (HLM) is a statistical technique that takes into account the multilevel structure of data. Hierarchical modeling methods offer three advantages: 1) they overcome problems that arise when observations are not independent; 2) they allow researchers to avoid aggregation bias; and 3) they permit researchers to separate the effects of important influences at different levels. Because individuals enter various social encounters and because respondents can contribute more than one incident to the data set, incidents reported by a particular respondent are likely to be more similar

to one another than to incidents reported by other respondents. Incidents, therefore, are not independent observations. Statistical analyses must take into account this interdependence among observations because standard errors of the estimates can be misestimated when observations are not independent (Bryk and Raudenbush 1992:84). Misestimated standard errors are critical because they invalidate statistical tests of significance.

Hierarchical models prevent aggregation bias that is commonly associated with multilevel data. Aggregation bias results when variables are measured at different levels but are collapsed into one level. This is problematic because variables measured at different levels have different interpretations (Bryk and Raudenbush 1992:83). For example, the effect of situation-specific intent to injure has a different interpretation than the effect of general, individual willingness to injure. In addition, when the effects that occur at these two different levels are aggregated or ignored important effects can be concealed (see Sampson and Lauritsen 1994). For instance, the data could be grouped so that all incidents are lumped together without regard for the respondent that contributed the incident data. In this example, the effects of a personal factor may be inappropriately attributed to situational variables because the situational variables will absorb the effects of the important personal attributes. Hierarchical models "help resolve this confounding by facilitating a decomposition of any observed relationship between variables ... into separate Level-1 and Level-2 components" (Bryk and Raudenbush 1992:83-84).

Finally, these models allow variables at one level (e.g., individual) to be controlled

so that the independent effects of variables at another level (e.g., situation) can be isolated. Hoffman (1997) argues that a primary advantage of hierarchical models is that they permit the simultaneous investigation of relationships *within* a single level. The effects of situational factors on situational outcomes, such as situation-specific intent to injure and gun possession, can be separated from the effects of person-level variables. The attributes of a single respondent can be controlled across the variety of situations in which he was involved. For instance, if a respondent indicates he was involved in four avoided violent incidents and two violent incidents, his individual factors are held stable across the six situations while the situation-level variables, such as intent to injure and gun possession, are allowed to vary. The estimated effects of a gun are net of individual-willingness and of situation-specific intent to harm and opponent. These are more precise estimates of gun effects than those of prior research (Felson and Messner 1996; Kleck and McElrath 1991) that controlled for stable, individual characteristics that are indirectly related, at best, to situation-specific intentions.

Based on these theoretical and pragmatic considerations hierarchical modeling is the appropriate analytic tool. Most important, when estimating firearm effects hierarchical models can be specified so that person-level willingness to use violence *and* situation-specific intentions to injure a target are controlled. In addition, hierarchical models overcome problems that stem from non-independent observations and aggregation bias as well as allow for the separation of effects at two theoretically important levels. Bryk and Raudenbush (1992:117-123) describe how the effects at level-1 are isolated from effects

at level-2 and Horney et al. (1995:661-662) applied these techniques to their multilevel data. The next section describes the logic of HLM and how it is used to isolate firearm effects.

Details of HLM

Two-level hierarchical linear models can be conceptualized as involving the estimation of two equations: a level-1, within-person model and a level-2, between-person model. Bryk and Raudenbush (1992:4) explain that each level "is formally represented by its own sub-model."

Level-1 (within-person model):

$$Y_{ij} = \beta_{0j} + \beta_{1j} (X_{ij}) + \beta_{2j} (Z_{ij}) + r_{ij} \qquad [1]$$

Level-2 (between-person model):

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (V_j) + \mu_{0j} \qquad [2a]$$

$$\beta_{1j} = \gamma_{10} + \mu_{1j} \qquad [2b]$$

$$\beta_{2j} = \gamma_{20} \qquad [2c]$$

The coefficients of the level-1 model become outcomes in the level-2 models, implying that the effects of level-1 variables may vary across the level-2 units. Level-1 effects can be modeled as a function of level-2 predictors. In this study, however, the interest is in the controlling for between-person differences and the interest is not in modeling person-level effects. Therefore, with the exception of the intercept model, the effects of each level-1 covariate will be specified as fixed, equation 2c, rather than random, equation 2b. Fixed effects do not vary with the effects of level-2 variables.

The specification of any statistical model in the social sciences should be based on

theoretical propositions. The situation-level model (level-1 model) will be based on the theoretical propositions described throughout the dissertation. The gun measures and situation-specific intentions will be given primary attention.

Analyses that focus specifically on within-person models modify equations 1 through 2c in two ways. First, the values of X in equation 1 are transformed into deviations from the group mean. In the language of HLM, this transformation is referred to as group-mean centering (Bryk and Raudenbush 1992:27, 119). Individual respondents can be thought of as the groups, and for clarification, this transformation might also be called individual-mean centering. In equation terms, X^* reflects the difference between a respondent's value of X for a specific incident and the average X value for that respondent:

$$X_{ij}^{*} = X_{ij} - m\_X_{\cdot j} \; . \qquad [3]$$

The second modification concerns the level-2 model. The individual means are entered as covariates in the model for the level-1 intercept (Bryk and Raudenbush 1992:122; Horney, Osgood and Marshall 1995:662):

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (m\_X_{\cdot j}) + \mu_{0j} \qquad [4]$$

The final model takes this general form:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (X_{ij}^{*}) + \beta_{2j} (V_{ij}^{*}) + r_{ij} \qquad [5]$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (m\_X_{\cdot j}) + \gamma_{02} (m\_V_{\cdot j}) + \mu_{0j} \qquad [6]$$
$$\beta_{1j} = \gamma_{10} \qquad [7]$$
$$\beta_{2j} = \gamma_{20} \qquad [8]$$

In equations 6 through 8, γ_{01} and γ_{02} estimate the effects of between-person differences.

At the same time, γ_{10} and γ_{20} are estimates of the within-person effects (Bryk and Raudenbush 1992:122; Horney, Osgood and Marshall 1995:662). In other words, γ_{10} is the effects of a situational factor net of other situational factors *and* individual factors.

This basic logic of hierarchical models applies to both continuous and binary outcome variables. A binary dependent variable is a categorical measure with two groups. Empirical criminological research often relies on these types of outcome measures. For example, it is useful to predict whether a criminal defendant will be found guilty or not guilty, whether or not a convicted offender will receive a death sentence, and whether or not a parolee will be rearrested. Common practice is to assign values of one and zero to the two possible outcomes. The numerical value of the outcome is not important; the predicted probability that the outcome will be one of two values is important because this represents the predicted probability that an event will occur (Menard 1995:9).

It is inappropriate, however, to estimate the effects of independent variables on a binary outcome variable with a linear model because predicted values will be outside of the plausible range (Menard 1995:6). Linear models predict outcomes outside of the possible range of probabilities (zero and one). Therefore, hierarchical models of binary outcome variables are specified to be nonlinear and resemble logistic regression equations. Such a specification allows the outcome to be interpreted as the predicted probability that an event will occur. The specification is nonlinear because the effects of independent variables on the probability of an outcome are not constant across those probabilities. Independent variables will have increasingly smaller effects as the probability of an

outcome approaches one and as the probability of an outcome approaches zero (Menard 1995:9). Level-2 models remain linear because the outcomes are continuous; the outcomes are level-1 coefficients. A nonlinear hierarchical model for a binary outcome takes the following form (Bryk, Raudenbush, and Congdon 1996:121):

Level-1:

$$\log (p_{ij} / 1 - p_{ij}) = \beta_{0j} + \beta_{1j} (X_{ij}^{*}) + r_{ij} \qquad [9]$$

Level-2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (m\_X_{\cdot j}) + \mu_{0j} \qquad [10a]$$

$$\beta_{1j} = \gamma_{20} \qquad [10b]$$

The outcome in such a model is appropriately constrained between the values of zero and one and predicts the probability that an event will occur. In equation 9, p_{ij} is the predicted probability. After a conversion using equation eleven (Gujarati 1995:554), the outcome produced from statistical packages is interpreted as the predicted probability that the dependent variable equals one, that a case falls into a given category:

$$P (y = 1) = 1 / 1 + e^{-(a + bx + bx + bx + bx)} \qquad [11]$$

After this conversion the outcomes are interpreted as the predicted probability that the respondent attacked an opponent, the predicted probability that the respondent injured the opponent, and the predicted probability that the respondent severely injured the opponent.

With the continued development and applicability of multilevel analytic techniques, many statistical packages can estimate these types of models (see Kreft, de Leeuw, and

Leenden 1994). HLM version 4.03 is used to estimate the substantive equations[7] (Bryk, Raudenbush and Congdon 1996) because this software package is available, commonly used, and capable of estimating nonlinear models (Bryk, Raudenbush and Congdon 1996). Version 4.03 furnishes statistical output that allows models to be built and the effects of independent variables at multiple levels to be understood.

The software package provides two sets of output for binary dependent variables: unit-specific models and population-average models. The choice of interpretation is based on the specific research question (Bryk, Raudenbush and Congdon 1996:128-130, 142-143). The population-average model results are appropriate because these models provide estimated effects that are averaged across the sample of respondents (Bryk, Raudenbush and Congdon 1996:129). Unlike unit-specific models, the outcomes of population-average models are not conditioned on μ_{0j}, level-2 random effects. The intercept of a population-average model (β_{0j}) is interpreted as the expected log-odds of a success on the outcome for a respondent with values of zero on all predictors (Bryk, Raudenbush and Congdon 1996:142). In other words, β_{0j} is the average outcome for these respondents. The γ_{k0} coefficients are interpreted as the expected change in the log-odds of a success given a one unit change in the value of an independent variable (Bryk, Raudenbush and Congdon 1996:129).

Model assumptions: Similar to ordinary linear regression analyses, model

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HLM version 4.03 utilizes a penalized quasi-likelihood (PQL) estimation method to estimate nonlinear models with a binary outcome variable (Bryk, Raudenbush and Congdon 1996:123).

specification is important (Berry 1993). A level-1 predictor variable should not be omitted if the predictor "is both related to Y_{ij} and related to one of the X's in the model" (Bryk and Raudenbush 1992:203). When a level-1 predictor is inappropriately omitted then at least one of the estimated level-1 coefficients will be biased and incorrect.

The next assumption is that of homogeneity of error variance (see Bryk and Raudenbush 1992; Goldstein 1995). If level-1 error variances are not equal then the estimates of level-2 coefficients, although not biased, will be inefficient. This leads to biased standard errors, which in turn, invalidate tests of statistical significance. It is further assumed that errors are normally distributed (see Bryk and Raudenbush 1992; Goldstein 1995), similar to the assumption in ordinary linear regression (Berry 1993). A violation of this assumption will lead to biased standard errors that invalidate tests of statistical significance.

Hierarchical models: The models used to estimate firearm effects in the sample of incidents are described below in equation form. Models that test for interaction effects use the dichotomous gun measure (guns versus no guns) while the models that test for main effects use the trichotomous gun measure (guns versus non-gun weapons versus no guns). The equations describe the various gun measures that are employed.

1) Likelihood of respondent attack model

Situation-level (level-1) model:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (I_{ij}^{*}) + \beta_{2j} (GUN_{ij}^{*}) + \beta_{3j} (DA_{ij}^{*}) + \beta_{4j} (OGP_{ij}^{*}) + \beta_{5j} (GP_{ij}^{*} * I_{ij}^{*}) + r_{ij}.$$

Y_{ij} = opponent attacked opponent (1=Y, 0=N)
I_{ij}^{*} = respondent's situational intent to seriously injure the opponent (1=Y, 0=N; group mean centered)
GUN_{ij}^{*} = respondent's gun possession (1=Y, 0=N; group mean centered)
$WEAP_{ij}^{*}$ = respondent's non-gun weapon possession (1=Y, 0=N; group mean centered; used in tests for main effects)
DA_{ij}^{*} = respondent's drug/alcohol use (1=Y, 0=N; group mean centered)
OGP_{ij}^{*} = opponent gun possession (1=Y, 0=N; group mean centered)
$GP_{ij}^{*} * I_{ij}^{*}$ = interaction between intentions and respondent gun possession[8]
r_{ij} = random effect error

Individual-level (level-2) model:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} m\_I_j + \gamma_{02} m\_GUN_j + \gamma_{03} m\_DA_j + \gamma_{04} m\_OGP_j + \mu_{0j}$$

m_I_j = average situational intent for individual j based on his incidents.
m_GUN_j = average gun possession for individual j based on his incidents.
m_WEAP_j = average non-gun weapon possession for individual j based on his incidents; used in tests for main effects.
m_DA_j = average drug and alcohol use for individual j based on his incidents.
m_OGP_j = average opponent gun possession for individual j based on his incidents.

$\beta_{1j} = \gamma_{10}$
$\beta_{2j} = \gamma_{20}$
$\beta_{3j} = \gamma_{30}$
$\beta_{4j} = \gamma_{40}$
$\beta_{5j} = \gamma_{50}$

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8 Interaction terms in all equations were created by group-mean centering the intent and gun measures and then multiplying the centered values (Aiken and West 1991:5).

2) Likelihood of opponent injuries model.

Situation-level (level-1) model:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (I_{ij}^{*}) + \beta_{2j} (GUN_{ij}^{*}) + \beta_{3j} (DA_{ij}^{*}) + \beta_{4j} (OGP_{ij}^{*}) + \beta_{5j} (GUN_{ij}^{*} * I_{ij}^{*}) + r_{ij}.$$

Y_{ij} = opponent injuries (0=No injuries, 1=Injured)
I_{ij}^{*} = respondent's situational intent to seriously injure the opponent (1=Y, 0=N; group mean centered)
GUN_{ij}^{*} = gun measure, two types to be used in 2 models.
1) respondent's gun possession (1=Y, 0=N; group mean centered)
2) respondent gun attack (1=Y, 0=N; group mean centered)
$WEAP_{ij}^{*}$ = respondent's non-gun weapon possession /attack (1=Y, 0=N; group mean centered; used in tests for main effects)
DA_{ij}^{*} = respondent's drug/alcohol use (1=Y, 0=N; group mean centered)
OGP_{ij}^{*} = opponent gun possession (1=Y, 0=N; group mean centered)
$GUN_{ij}^{*} * I_{ij}^{*}$ = interaction between intentions and respondent gun measure (group mean centered)
1) gun possession and intent
2) gun attack and intent
m_WEAP_{j} = average non-gun weapon possession / attack for individual j based his incidents; used in tests for main effects.
r_{ij} = random effect error, normally distributed with homogeneous variance across individuals.

Individual-level (level-2) model:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} m\_I_{j} + \gamma_{02} m\_GUN_{j} + \gamma_{03} m\_DA_{j} + \gamma_{04} m\_OGP_{j} + \mu_{0j}$$

m_I_{j} = average situational intent for individual j based on his incidents.
m_GUN_{j} = average gun measure for individual j based on his incidents.
1) average gun possession
2) average gun attack
m_DA_{j} = average drug and alcohol use for individual j based on his incidents.
m_OGP_{j} = average opponent gun possession for individual j based on his incidents.

$\beta_{1j} = \gamma_{10}$
$\beta_{2j} = \gamma_{20}$

$\beta_{3j} = \gamma_{30}$
$\beta_{4j} = \gamma_{40}$
$\beta_{5j} = \gamma_{50}$

3) Likelihood of serious opponent injuries

Situation-level (level-1) model:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (I_{ij}^{*}) + \beta_{2j} (GUN_{ij}^{*}) + \beta_{3j} (DA_{ij}^{*}) + \beta_{4j} (OGP_{ij}^{*}) + \beta_{5j} (GUN_{ij}^{*} * I_{ij}^{*}) + r_{ij}.$$

Y_{ij} = opponent injuries (0=Minor, 1=Severe)
I_{ij}^{*} = respondent's situational intent to seriously injure the opponent (1=Y, 0=N; group mean centered)
GUN_{ij}^{*} =gun measure, two types to be used in 2 models.
1) respondent's gun possession (1=Y, 0=N; group mean centered)
2) respondent gun attack (1=Y, 0=N; group mean centered)
$WEAP_{ij}^{*}$ = respondent's non-gun weapon possession /attack (1=Y, 0=N; group mean centered; used in tests for main effects)
DA_{ij}^{*} = respondent's drug/alcohol use (1=Y, 0=N; group mean centered)
OGP_{ij}^{*} = opponent gun possession (1=Y, 0=N; group mean centered)
$GUN_{ij}^{*} * I_{ij}^{*}$ = interaction between intentions and respondent gun measure (group mean centered)
1) gun possession and intent
2) gun attack and intent
r_{ij} = random effect error, normally distributed with homogeneous variance across individuals.

Individual-level (level-2) model:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} m\_I_j + \gamma_{02} m\_GUN_j + \gamma_{03} m\_DA_j + \gamma_{04} m\_OGP_j + \mu_{0j}$$

m_I_j = average situational intent for individual j based on his incidents.
m_GUN_j = average gun measure for individual j based on his incidents.
1) average gun possession
2) average gun attack
m_WEAP_j = average non-gun weapon possession / attack for individual j based his incidents; used in tests for main effects.

m_DA_j = average drug and alcohol use for individual j based on his incidents.

m_OGP_j = average opponent gun possession for individual j based on his incidents.

$\beta_{1j} = \gamma_{10}$
$\beta_{2j} = \gamma_{20}$
$\beta_{3j} = \gamma_{30}$
$\beta_{4j} = \gamma_{40}$
$\beta_{5j} = \gamma_{50}$

Sample Cases

To understand the full effects of guns on the likelihood of attacks and injuries, a heterogeneous sample of incidents must be examined, such as conflicts that do not turn physically violent and conflicts that end with serious injuries. Physical confrontations and avoided violent, high risk, incidents contained in the data set and previously described are used to test the proposed hypotheses. These situations provide a broad range of incidents in terms of gun possession and use, situation-specific intentions, and situational outcomes. Incidents defined as robberies[9] have been excluded in order to understand gun effects in

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A portion of assaults appear to involve robbery elements, such as threats in order to obtain property. These incidents contained in the non-robbery data sets will be analyzed even though they seem to involve characteristics of robberies. This decision is motivated by the fact that even though these situations conform to an official definition of a robbery (threat of force to obtain money or property) these encounters are clearly not what might be considered traditional robberies, those involving strangers who take what does not belong to them. These situations, rather, appear to be disputes over drugs, property, and money. A number of these incidents are included as examples in Appendix B. During data collection it became clear that violent encounters did not fit neatly into robbery and non-robbery categories and, therefore, some of these incidents were coded as robbery encounters. (It is an interesting anecdote that during several interviews, respondents did not consider these encounters to be robberies. When interviewers began to code these as robbery events some respondents said that they did not rob the person, they were getting what belonged to them.) This is problematic because the incidents coded as robberies can not be recoded into assault situations due to a lack of completely consistent measures across the incident reports. Most important, respondents were not asked about their intentions to injure targets in robbery incidents.

assault situations. An examination of this heterogeneous sample provides an understanding of weapon effects in circumstances where intent to injure is likely to be more variable than would be expected across a sample of robbery situations, incidents where offenders likely value compliance. Furthermore, this knowledge will expand our understanding of gun effects within assaults because previous empirical research has primarily focused on robbery events.

In addition to the exclusion of robberies, respondents who reported violent and near violent situations that occurred in secure facilities, such as jails, prisons, and youth detention centers, have been excluded. It is reasonable to assume that respondents would not have had the opportunity, or at least had a very limited opportunity to possess and use guns under these circumstances. Also excluded are situations in which there was no immediate opportunity for the respondent to attack and injure the opponent. These are circumstances where the respondent and his opponent were not physically present together. During incident reports, respondents were permitted to report high risk situations in which they were not in the presence of their opponent. Such a circumstance might be one in which the respondent was looking for the opponent in order to attack, but could never locate that person. A similar situation is one in which an opponent encouraged the respondent to meet him or her for a fight over the phone, but the respondent refused to meet his challenger. Finally, 25 incidents were missing data on the respondent's intentions to injure an opponent. These cases have been omitted from analyses in light of the fact that this measure is critical.

Sometimes individuals are involved in many similar incidents and in recurring situations. It is difficult to recall the unique details about each of these situations. These incidents can be conceived of as series incidents. According to the NCVS a series victimization involves "three or more similar incidents occurring over the past 6 months, for which the victim could not recall dates and details well enough to report them as discrete incidents" (Bureau of Justice Statistics 1994:6). Analyses were conducted on a sample that included the most recently occurring series event in time that the respondent described. The decision to exclude all incidents that were part of the series is based on the assumption that the exact details of the series events may not have been recalled as accurately. It is assumed, however, that the details of the most recent event were recalled as accurately as other unique incidents.

Summary

Gun effects are expected to depend on the possessor's / user's intent to seriously injure an opponent. The predicted pattern of interaction effects is based upon the compensation and a specific form of the weapon instrumentality explanation, the weapon facilitator theses. The compensation argument claims that people who intend to injure a target will do so even when they do not have the proper tools by compensating with extra effort. Based on the compensation argument, guns should have weaker effects when people intend to seriously injure an opponent than when they do not intend to seriously injure an opponent. The facilitator hypothesis claims that guns facilitate attacks and injuries in situations where none would otherwise occur. Based on this logic, guns should

have stronger effects when people do not intend to seriously injure their opponents rather than when they intend to seriously injure their opponents.

Two important outcomes are examined to understand a full range of firearm effects: attacks and injuries. Gun effects on the likelihood a respondent will attack an opponent, on the likelihood a respondent will injure an opponent, and on the likelihood a respondent will seriously injure an opponent, are estimated. Respondents' situation-specific intent to seriously injure targets is measured along with gun possession and gun attacks. The measure of situation-specific intent improves upon the manner in which previous research projects have measured and controlled for the weapon possessor's / user's intentions.

The situation-specific intent measure can vary across situations, following theoretical propositions. Hierarchical modeling techniques allow the full data set to be used and for the effects of situation-level variables to be isolated from the effects of person-level attributes. A within-person model that produces estimates of gun effects net of situation-specific intent and general willingness to use violence across situations is employed. A within-person specification allows estimated gun effects to be interpreted as being net of personal influences *and* situation-specific intent to injure.

Results

This chapter presents descriptive statistics about the sample of incidents used in the analyses and descriptive statistics about the respondents who contributed these incidents. This chapter also presents the results of the hierarchical models that tested the proposed hypotheses. These models are estimated with and without the intent measure that controls for the respondent's situation-specific intent to seriously injure the opponent. This permits an understanding of whether and how gun effects change when situation-specific intent is not controlled. The results of models that tested for interaction effects between gun possession and intentions and between gun attacks and intentions on the dependent variables are also presented.

The results are organized according to the dependent variables and the various gun measures. Table 1 presents the estimated effects of gun possession on the likelihood a respondent attacked an opponent. Table 2 presents the estimated effects of gun possession on the likelihood a respondent injured an opponent. Table 3 presents the estimated effects of gun attacks on the likelihood a respondent injured an opponent. Table 4 presents the estimated effects of gun possession on the likelihood a respondent severely injured an opponent. Finally, table 5 presents the estimated effects of gun attacks on the likelihood a respondent severely injured an opponent. Each table presents the results of three models: 1) gun effects without the intent measure, 2) gun effects with the intent measure, and 3) interaction effects.

Descriptive Statistics

Incidents: Table 1 provides information about the sample of incidents used in the models that predicted the likelihood that the respondent attacked an opponent. This sample of 2,052 incidents was described by 533 inmate respondents. Respondents attacked opponents and attempted to attack opponents in 1,155 cases, nearly 57 percent of these reported incidents. This is a larger percentage of cases than the 49.5 percent of NCS physical attack incidents that Kleck and McElrath (1991) analyzed. Respondents intended to seriously injure opponents in 55 incidents, 27 percent of the 2,052 events. Respondents possessed firearms in 298 incidents, nearly 15 percent of these 2,052 reported cases, and reported that they used drugs and / or alcohol in close to 67 percent of the cases, or 1,371 incidents. Respondents possessed non-gun weapon in 230 situations, approximately 11 percent of the sample. Finally, opponents possessed a firearm in 261 incidents, close to 13 percent of these cases.

Table 1: Descriptive statistics for violent and high risk situations. 533 inmate respondents provided information about these 2,052 incidents.

Variable	Frequency	Percent[a]
Respondent attacked opponent	1,155	56.3
Respondent intended to seriously injure opponent	555	27.0
Respondent possessed a gun	298	14.5
Respondent possessed a non-gun weapon	230	11.2
Opponent possessed gun	261	12.7
Respondent used drugs/alcohol	1,371	66.8

[a] Percentages reflect the percent of cases in which the attribute was present. For example, an opponent possessed a gun in nearly 13 percent of the cases and an opponent did not possess a gun in close to 87 percent of the cases.

Table 2 provides descriptive information on the reported violent incidents in which the respondent physically attacked and attempted to physically attack an opponent. Four hundred and fifteen inmates reported details on these 1,140 assault encounters. A respondent injured an opponent in nearly 60 percent of these situations (n = 682), a greater percentage of attack cases than the 52.2 percent of attack cases contained in the data set that Kleck and McElrath (1991:table 1) used to estimate the probability of a victim being injured. A respondent intended to seriously injure an opponent in 436 cases, approximately 38 percent of these situations and a respondent used alcohol in 812 encounters, 71 percent of the situations. Respondents reported that an opponent possessed a gun in 112 cases, nearly ten percent of these incidents. A respondent possessed a gun in 204 cases, 18 percent of these incidents and a respondent shot an

opponent or shot at an opponent in 94 incidents, approximately eight percent of the cases. These percentages are slightly larger than the 7.5 percent of attack cases that involved an offender with a gun and the 3.1 percent of attack cases that involved an offender firing a gun that Kleck and McElrath (1991:table 1) examined.

Table 2: Descriptive statistics for situations in which the respondent attacked an opponent and situations in which the respondent attempted to attack an opponent. Four hundred and fifteen inmate respondents provided information about these 1140 incidents[a].

Variable	Frequency	Percent[b]
Opponent injured	682	59.8
Respondent intended to seriously injure opponent	436	38.2
Respondent possessed a gun	204	17.9
Respondent attacked with a gun	94	8.2
Respondent possessed a non-gun weapon	199	17.5
Respondent attacked with a non-gun weapon	172	15.1
Opponent possessed gun	112	9.8
Respondent used drugs/alcohol	812	71.2

[a]1,140 respondent attack cases are utilized rather than the 1,155 cases where a respondent attacked because information was missing from 15 cases on opponent injuries.
[b]Percentages reflect the percent of cases in which the attribute was present. For example, a respondent possessed a gun in nearly 18 percent of the cases and a respondent did not possess a gun in close to 82 percent of the cases. Respondents attacked with non-gun weapons in 15 percent of the incidents and attacked some other way (with a gun or physically) in 85 percent of the incidents.

Table 3 describes incidents in which a respondent physically attacked or attempted to physically attack an opponent and the respondent reported that he injured the opponent. Table 2 illustrates that a respondent indicated that an opponent was injured in 682 of the

1,140 cases in which the respondent physically attacked or attempted to physically attack an opponent. Out of these injury cases, opponents were seriously injured in 226 incidents, approximately 33 percent of the cases. Respondents inflicted minor injuries on opponents in 456 cases, 67 percent of all injury cases. Respondents reported that they intended to seriously injure an opponent in 43 percent of these cases (n = 295) and reported using drugs or alcohol in close to three-fourths of these situations (n = 492). Respondents revealed that opponents possessed a gun in 57 instances, eight percent of these cases.

A respondent possessed a gun in about 16 percent of these injury incidents (n = 111), a larger percentage than the 6.3 percent of the cases Felson and Messner (1996:table 1) analyzed. In nearly 21 percent of the cases a respondent possessed a non-gun weapon. This percentage is less than the approximately 26 percent of Felson and Messner's (Felson and Messner 1996:table 1) cases in which the offender possessed a non-gun weapon. A respondent fired a gun in nearly five percent of these situations (n = 35), a slightly greater percentage of cases than the 2.5 percent that were contained in the official data that Kleck and McElrath (1991:table 1) used to estimate the likelihood of a victim being killed. Respondents attacked with non-gun weapons in 35 cases, nearly 19 percent of these incidents. This is similar to the 22 percent of Kleck and McElrath's (1991:table 1) cases that involved an offender attacking with a non-gun weapon.

Table 3: Descriptive statistics for situations in which the opponent was injured. Three hundred and thirty one respondents provided information about these 682 incidents.

Variable	Frequency	Percent[a]
Opponent sustained minor injuries	456	66.9
Opponent sustained serious injuries	226	33.1
Respondent intended to seriously injure opponent	295	43.3
Respondent possessed a gun	111	16.3
Respondent attacked with a gun	35	5.1
Respondent possessed a non-gun weapon	145	21.3
Respondent attacked with a non-gun weapon	127	18.6
Opponent possessed gun	57	8.4
Respondent used drugs/alcohol	492	72.1

[a] Percentages reflect the percent of cases in which the attribute was present. For example, a respondent intended to seriously injure an opponent in 43 percent of the cases and, therefore, a respondent did not intend to seriously injure an opponent in 57 percent of the cases. A respondent attacked with a non-gun weapon in approximately 19 percent of the cases and attacked in some other way in 81 percent of the cases.

Respondents: Table 4 presents descriptive information about inmate respondents who provided incidents that are used in determining the likelihood a respondent attacked and attempted to attack an opponent. Inmates were, on average, age 30 at the time of the interview and contributed nearly four incidents. Over half (n = 326) of the inmate respondents are white, 21 percent (n = 113) are African American, nearly 10 percent (n = 50) are Hispanic, close to 8 percent (n = 41) are Native American, and less than 1 percent (n = 3) are Asian. Inmate respondents reported that they had been married an average of .53 times over the course of their lives. Less than 40 percent (n = 200) of the sample did

not graduate from High school, 41 percent (n = 219) either graduated from high school or earned their General Education Degree (GED), and 21 percent (n = 114) either took some college courses, graduated from college, or did post graduate work.

Table 4: Descriptive statistics for the 533 respondents that reported situations used to analyze the likelihood that a respondent attacked / attempted to attack an opponent[a].

Variable	**Mean**	**Standard Deviation**
Age[b]	29.47	9.00
Number of reported incidents[c]	3.85	3.03
Number of times married	.53	.75
Variable	**Frequency**	**Percent**
Race		
White	326	61.2
African American	113	21.2
Hispanic	50	9.4
Native American	41	7.7
Asian	3	.60
Education		
Less than H.S. grad	200	37.5
H.S. grad / GED	219	41.1
More than H.S.	114	21.4

[a] Descriptive statistics are based on self-report data, with the exception of 17 respondents that indicated their race as "other." Official records data were substituted for these "other" values.
[b] Each respondent's age is calculated as 1998 minus his self-reported birth year.
[c] Number of reported incidents to be used in analyses of the likelihood that the respondent attacked or attempted to attack.

Table 5 presents descriptive statistics for the 414 respondents who described incidents that are used in the analyses of the likelihood that a respondent injured an opponent, given a respondent attack. These respondents were close to 28 years old, on average, and reported nearly three incidents. Similar to Table 4, 60 percent (n = 251) of respondents are white, 21 percent (n = 88) are African American, nearly nine percent (n = 37) are Hispanic, 8.5 percent (n = 35) are Native American, and less than one percent (n = 3) are Asian. Inmate respondents who reported incidents in which they attacked an opponent had been married an average of .48 times over the course of their lives. Thirty-eight percent (n = 159) of the respondents described in Table 5 did not graduate from high school, 41 percent (n = 170) had either earned their GED or graduated from high school, and 21 percent (n = 85) had some education beyond high school.

Table 5: Descriptive statistics for the 414 respondents that reported situations used to analyze the likelihood that a respondent injured his opponent.[a]

Variable	**Mean**	**Standard Deviation**
Age[b]	28.12	8.56
Number of reported incidents[c]	2.75	2.04
Number of times married	.48	.73
Variable	**Frequency**	**Percent**
Race		
White	251	60.6
African American	88	21.3
Hispanic	37	8.9
Native American	35	8.5
Asian	3	.7
Education		
Less than H.S. grad	159	38.4
H.S. grad / GED	170	41.1
More than H.S.	85	20.5

[a] Descriptive statistics are based on self-reported data.
[b] Each respondent's age is calculated as 1998 minus his self-reported birth year.
[c] Number of reported incidents to be used in the analyses of the likelihood that the opponent was injured.

Finally, Table 6 describes the inmate respondents who provided incidents that were analyzed in the statistical models that estimate the likelihood that opponent injuries were severe rather than minor. These respondents were approximately 27 years old, on average, and reported 2.06 incidents. Much like the previous tables that describe inmate

respondents, nearly 60 percent (n = 200) are white, 20 percent (n = 65) are African American, 10 percent (n = 33) are Native American, 9.4 percent (n = 31) are Hispanic, and less than one percent (n = 2) are Asian. Respondents had been married an average of .45 times during their lifetimes. Thirty-eight percent (n = 126) of inmates who provided incidents used to estimate the likelihood that an opponent's injuries are severe had less than a high school education, nearly 41 percent (n = 134) had either graduated or earned their GED, and nearly 22 percent (n = 71) had some education beyond high school. These percentages are similar to those reported in Tables 4 and 5.

Table 6: Descriptive statistics for the 331 respondents that reported situations used to analyze the likelihood that an opponent was injured as a result of a respondent attack.[a]

Variable	**Mean**	**Standard Deviation**
Age[b]	27.34	7.84
Number of reported incidents[c]	2.06	1.49
Number of times married	.45	.69
Variable	**Frequency**	**Percent**
Race		
White	200	60.4
African American	65	19.6
Hispanic	31	9.4
Native American	33	10
Asian	2	.6
Education		
Less than H.S. grad	126	38.1
H.S. grad / GED	134	40.5
More than H.S.	71	21.5

[a] Descriptive statistics are based on self-reported data.
[b] Each respondent's age was calculated as 1998 minus his self-reported birth year.
[c] Number of reported incidents to be used in the analyses of the likelihood that the opponent was severely injured.

In relation to data gathered by the United States Census Bureau from a sample of nearly 14,000 state prisoners in 1991 (Beck, Gilliard, Greenfeld, Harlow, Hester, Jankowski, Snell, Stephan, and Morton 1993), the sample of inmate respondents contains a larger percentage of white respondents, better-educated respondents, and a larger

percentage of younger respondents. The national sample of state prisoners indicates that 65 percent had not graduated from high school, 22 percent completed high school, and 12 percent had some college or more. Thirty-five percent of the national state prisoner sample are white, 46 percent are black, 17 percent are Hispanic, and two percent are categorized as being "other." Finally, 22 percent of inmates in the nation-wide sample are age 24 or younger, 46 percent are age 25-34, and 33 percent are age 35 or older.[10]

Tests of Hypotheses

Likelihood of a respondent attack: Model 1 in Table 7 presents the estimated effect of respondent gun possession on the likelihood he attacked an opponent without controlling for the respondent's situation-specific intent to injure his opponent. Net of personal influences, possessing a gun significantly increases the likelihood that the respondent will attack his opponent. Possessiong a weapon that is not a gun, such as a knife, a bat, or a bottle, also significantly increases the likelihood that the respondent will attack his opponent. These within-person model results are net of personal influences that are controlled with the between-person model.

Model 2 in Table 7 shows the results of the hierarchical model in which intent to injure is controlled. It is apparent that controlling for intent does not dramatically change the effect of gun possession. Controlling for situation-specific intent to injure, drug and

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The nation-wide statistics on age of respondents are compared to the statistics for the 533 inmates who provided incidents that are used to estimate the probability that a respondent attacked an opponent. Of these 533 respondents, approximately 37 percent are age 24 or younger, 35 percent are between the ages 25 and 34, and 27 percent are age 35 and older.

alcohol use, opponent gun possession, and personal attributes, gun possession significantly increases the likelihood the possessor will attack his opponent. Non-gun weapon possession also increases the chances that the possessor will attack the opponent. It is not surprising to find that if a respondent intended to seriously injure his opponent, he was significantly more likely to attack than if he did not intend to seriously injure his opponent. Opponent gun possession significantly reduces the chances that a respondent will attack the opponent, while respondent drug and alcohol use increases the probability that he will attack.

Model 3 in Table 7 provides a test of the hypothesis that gun effects on the likelihood of a possessor attack depend on the possessor's intent to injure. The value of the interaction term has a value of one when then respondent intends to seriously injure the opponent and possesses a gun. The interaction term is not statistically significant at the .05 probability level. Based on the principle of parsimony, which states that there must be compelling evidence in order to accept a more complex model over a simple model, the interaction term is considered statistically insignificant. Therefore, the results of Model 2, the main effects model, are the best of these three models.

It is particularly useful to interpret the effects of dichotomous, independent variables on a categorical, dependent variable with predicted probabilities. This is accomplished with the formula described in the previous chapter (Gujarati 1995:554):

$$P(y = 1) = 1 / 1 + e^{-(a + bx + bx + bx + bx)} \qquad [1]$$

The value that is exponentiated is calculated by assigning values to the independent

variables (x), multiplying those assigned values by their associated coefficients, and summing those products and the intercept. Equation 1 indicates that a negative sign must be placed in front of the value to be exponentiated prior to exponentiation. An illustration using the data from Model 2 in Table 7 will help clarify this process.

Assume a situation exists where a respondent possessed a gun, intended to seriously injure his opponent, and had used drug and alcohol. Because the respondent weapon possession categories are mutually exclusive, this means that the respondent did not possess a non-gun weapon. This situation also implies that the opponent did not possess a gun. Therefore, the γ_{10}, γ_{20}, and γ_{40} coefficients are multiplied by one and the γ_{30} and γ_{50} coefficients are multiplied by zero. A value of one indicates that the attribute is present in the situation, while a value of zero indicates that the attribute is absent from the incident. The value of the intercept is calculated by holding the individual-level variables constant at zero. Each individual-level coefficient is multiplied by zero, and thus, drops out of the equation. The value of the intercept is -.1036. Such an incident yields this equation:

$$= -.1036 + .1.1720\ (1) + .6715\ (1) + 1.7497\ (0) + .3077\ (1) + -1.0260\ (0)$$

$$= 2.0476$$

When this value is used in Formula 1, the resulting value is the predicted probability that a respondent will attack in a situation where he possessed a gun, intended to seriously injure his opponent, used drugs and/or alcohol prior to the situation, and the opponent did not possess a firearm. The predicted probability is .89:

$$P(y = 1) = 1 / 1 + e^{-(2.0476)}$$

$$P(y = 1) = 1 / 1 + .1290.$$

$$P(y = 1) = 1 / 1.1290$$

$$P(y = 1) = .8857$$

Based on the results of Model 2, an opponent faces a .42 probability of being attacked by a respondent when the respondent does not possess any weapon and does not intend to seriously injure the opponent. This is calculated using only the value of the intercept and equation 1. In other words, the values of all other independent variables are assigned to be zero. The predicted probabilities associated with all final models are presented in Table 12.

For a respondent who does not intend to seriously injure his opponent and does not possess any weapon, the probability that he will attack is .41. This is calculated by assigning values of zero to all independent variables. When the non-intending respondent possesses a gun, the probability of a respondent attack increases to .58. This is determined by assigning a one to the respondent gun possession measure and values of zero to all other independent variables. The probability of a respondent attack is .80 when he possesses a non-gun weapon and does not intend to seriously injure. This is determined by assigning a one to the respondent non-gun weapon possession independent and values of zero to the remaining independent variables. The probability of a respondent attack is .69 when a respondent intends to seriously injure an opponent and does not possess any weapon. When a respondent who intended to seriously injure his opponent

possessed a gun, he attacked the opponent 82 percent of the time, and when the intending respondent possessed a non-gun weapon, he attacked the opponent 93 percent of the time. Percentages are calculated by multiplying the predicted probability by 100.

Table 7: Estimated effects of gun possession measures on the likelihood that a respondent attacked.

	Model 1 (no intent)	Model 2 (intent)	Model 3 (interaction)
Fixed Effects	Coefficient[†]	Coefficient	Coefficient
Between Person			
Intercept, γ_{00}	-.1036 (.1281)	-.3578 (.1442)*	-.2539 (.1383)
m_Intent, γ_{01}	_____	1.5045 (.2445)*	1.5798 (.2365)*
m_Gun Possession, γ_{02}	1.1987 (.3008)*	.8396 (.3060)*	.9037 (.2988)*
m_Weapon Possession, γ_{03}	1.7298 (.3401)*	1.5197 (.3618)*	_____
m_Drug / Alcohol Use, γ_{04}	.2936 (.1670)	.2585 (.1804)	.2764 (.1759)
m_Opp. Gun Possession, γ_{05}	-1.2009 (.3070)*	-1.2363 (.3368)*	-1.3588 (.3288)*
Within Person			
Intent, γ_{10}	_____	1.1720 (.1430)*	1.2775 (.1403)*
Gun Possession, γ_{20}	.7882 (.2037)*	.6715 (.2039)*	.5706 (.2001)*
Weapon Possession, γ_{30}	1.8754 (.2132)*	1.7497 (.2378)*	_____
Drug / Alcohol Use, γ_{40}	.3586 (.1185)*	.3077 (.1385)*	.3216 (.1353)*
Opponent Gun Possession, γ_{50}	-.9032 (.1621)*	-1.0260 (.1935)*	-.9740 (.1898)*
Interaction, γ_{60}	_____	_____	-.8154 (.4623)

* $p < .05$; [†]standard errors in parentheses

Likelihood of an opponent being injured: Table 8 presents the results of models that estimate the effects of independent variables, including gun *possession*, on the likelihood that a respondent injured an opponent, given a respondent attack. Opponent gun possession and respondent drug and alcohol use were not statistically significant. These variables and their associated level-2 'average' measures were excluded when the final models were estimated. Model 1 in Table 8 excludes the intent measure and presents estimated effects on the likelihood of an opponent injury resulting from a respondent attack. Respondent gun possession does not have a statistically significant effect on the likelihood that an opponent is injured.

Model 2 introduces the measure of respondent intent. Respondent gun possession does not have a significant effect on the probability that his attack injured his target when the measure of his situation-specific intent is controlled. This result is similar to the findings that result when respondent intentions to injure are controlled. The effect of gun possession is not dramatically different when situation-specific intent is controlled. Again, without surprise, intent to injure has a positive effect on the chances of an opponent being injured. Respondent non-gun weapon possession significantly increases the chances that a respondent will injure his opponent. These effects are net of the influence that personal variables have on the outcome.

Model 3 shows that the interaction effect of respondent gun possession and intent to seriously injure on the likelihood that the opponent was injured is not statistically significant. Therefore, the results of the main effects model (Model 2) are the most

acceptable. The predicted probabilities that an opponent was injured are presented in Table 12. The probability of an opponent being injured is .55 when a respondent does not possess any weapon and does not intend to seriously injure his opponent. The probability increases to .67 when the non-intending respondent possesses a non-gun weapon. The probability of an opponent being injured is .69 when the respondent intends to seriously injure the opponent and does not possess any weapon. Finally, the probability of opponent injury is .79 when the respondent intends to injure *and* possesses a non-gun weapon.

Table 8: Estimated effects of gun *possession* measures on the likelihood that a respondent injured an opponent.

	Model 1 (no intent)	Model 2 (intent)	Model 3 (interaction)
Fixed Effects	Coefficient[†]	Coefficient	Coefficient
Between Person			
Intercept, γ_{00}	.3131 (.0885)*	.1874 (.1089)	.2945 (.1028)*
m_Intent, γ_{01}	_____	.4249 (.2081)*	.4754 (.2075)*
m_Gun Possession, γ_{02}	-.2975 (.2331)	-.4149 (.2408)	-.3892 (.2423)
m_Weapon Possession, γ_{03}	.8099 (.2671)*	.7730 (.2689)*	_____
Within Person			
Intent, γ_{10}	_____	.6047 (.1757)*	.6600 (.1738)*
Gun Possession, γ_{20}	-.2175 (.2374)	-.2636 (.2402)	-.3137 (.2386)
Weapon Possession, γ_{30}	.6401 (.2294)*	.5275 (.2332)*	_____
Interaction, γ_{40}	_____	_____	-.9744 (.5665)

* $p < .05$; [†]standard errors in parentheses.

A more precise measure than weapon possession is a measure of how the respondent attacked. When respondents attacked, they did not attack with a gun in over half of the cases (n = 110) in which the respondent possessed a gun (n = 204). This means that respondents possessed a gun but did not fire that gun; they attacked in some other way. Table 9 presents the results of models that estimate the likelihood that a respondent injured an opponent when a gun was used in the attack. The gun and weapon variables in Table 9 measure actual attacks, whereas the models in Table 8 use measures of possession.

The results of Model 1 in Table 9 show that when intent to injure is excluded from the model a respondent gun attack significantly reduces the likelihood that his attack will injure his opponent. A respondent non-gun weapon attack significantly increases the likelihood that the attack will injure the opponent. The results from Model 2, the one in which intent is controlled, demonstrate that the direction and significance of the gun and non-gun weapon attack measures are similar. The gun attack coefficient is larger, however, when intent is not controlled. This evidence partially supports Kleck and McElrath's (1991:688) argument that "omitting direct measures of motivation tends to bias the gun coefficients in a positive direction." The lack of a dramatic difference between the models, however, does not support a prediction that gun effects might disappear entirely when intent is controlled.[11]

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[11] Kleck and McElrath (1991:688) suggest that the positive net effect of guns on the likelihood of a victim death "would be reduced - and could easily disappear altogether - if motivation was properly measured and controlled". Even though they refer to the net effect of firearms on the likelihood of death, it is

Model 2 also shows, once again, that when a respondent intends to seriously injure his opponent his attack is more likely to produce opponent injuries than when he does not have such intentions. Also, controlling for personal attributes and situation-specific respondent intentions, respondent gun attacks significantly reduce the chances an opponent is injured. Respondent non-gun weapon attacks significantly increase the likelihood an opponent is injured. Table 12 presents the predicted probabilities that a respondent injured his opponent.

The probability a respondent's attack will produce opponent injuries is .56 when the respondent attacks without a weapon and does not intent to seriously injure the opponent. When a non-intending respondent attacks with a non-gun weapon the predicted probability is .68. When a respondent attacks with a gun but does not intend to seriously injure his target, the probability that he will injure his opponent is .34. Opponents face the greatest risk of injury when an intending respondent attacks with a non-gun weapon (.80), the second greatest risk when the respondent attacks without weapons (.70), and the lowest risk when the respondent fires a gun (.49).

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important to understand whether gun effects disappear when intent is controlled in the particular stages of an incident.

Table 9: Estimated effects of gun *attack* measures on the likelihood that a respondent injured an opponent.

	Model 1 (no intent)	Model 2 (intent)	Model 3 (interaction)
Fixed Effects	Coefficient[†]	Coefficient	Coefficient
Between Person			
Intercept, γ_{00}	.3851 (.0847)*	.2270 (.1072)*	.2992 (.1006)*
m_Intent, γ_{01}	_____	.5167 (.2094)*	.5547 (.2080)*
m_Gun Attack, γ_{02}	-1.0271 (.3438)*	-1.2288 (.3554)*	-1.3098 (.3572)*
m_Weapon Attack, γ_{03}	.6534 (.2962)*	.5795 (.2985)**	_____
Within Person			
Intent, γ_{10}	_____	.6354 (.1778)*	.6928 (.1758)*
Gun Attack, γ_{20}	-.8080 (.3192)*	-.9056 (.3236)*	-1.0196 (.3197)*
Weapon Attack, γ_{30}	.6305 (.2384)*	.5078 (.2436)*	_____
Interaction, γ_{40}	_____	_____	.3100 (.7600)

* $p < .05$; ** $p = .052$; [†]standard errors in parentheses

Likelihood of a severe opponent injury: The final dependent variable of interest is the severity of injury that an opponent sustained, given that he sustained some injury. Table 10 shows the results of models that estimate the effects of gun *possession* on the chances that an opponent sustained serious injuries as a result of a respondent's attack. Model 1 in Table 10 omits the measure of the respondent's situation-specific intent. Given that a respondent attacked and injured an opponent, respondent gun possession significantly increases the chances that opponent injuries are severe rather than minor, net of personal influences. Similarly, respondent non-gun weapon possession increases the probability of severe opponent injuries.

Model 2 introduces the intent measure into the equation. The pattern of results, however, is similar to those from Model 1. As has been the case in the previous equations, there is a significantly greater probability that a respondent will seriously injure an opponent when he intends to seriously injure the opponent. Gun possession significantly increases the chances that an opponent's injuries will be severe, rather than minor, net of situation-specific intent to seriously injure and net of personal influences. Non-gun weapon possession also increases the chances that a respondent will severely injure an opponent. A comparison of Models 1 and 2 suggests that gun effects are not dramatically different when intentions are controlled and when they are not controlled. A further examination of the coefficients shows that the effect of gun possession is slightly smaller when the intent measure is controlled than when it is not controlled. The coefficient associated with the non-gun weapon possession is slightly larger when intent is

not controlled than when it is controlled.

Consistent with the established pattern of findings, the effects of gun possession on the likelihood an opponent is severely injured does not depend on the attacker's intentions to seriously injure. Therefore the model using only the main effects of gun possession and non-gun weapon possession is the best of these three. Table 12 shows the predicted probabilities of an opponent being severely injured. Given that an opponent sustained some injury, a non-intending respondent who did not possess a weapon seriously injures an opponent approximately 28 percent of the time. The probability of severe opponent injuries is .46 when a respondent does not intend to seriously injure the opponent and possesses a firearm. The probability an opponent will be seriously injured by a non-intending respondent who possesses a non-gun weapon is .53. A respondent who intends to seriously injure his opponent and does not possess any weapon, severely injures his opponent 45 percent of the time. An intending respondent with a firearm severely injures the opponent 64 percent of the time. Finally, a similar intending respondent who possesses a non-gun weapon, severely injures his opponent 70 percent of the time.

Table 10: Estimated effects of gun *possession* measures on the likelihood that a respondent seriously injured an opponent.

	Model 1 (no intent)	Model 2 (intent)	Model 3 (interaction)
Fixed Effects	Coefficient[†]	Coefficient	Coefficient
Between Person			
Intercept, γ_{00}	-.9530 (.1152)*	-.9487 (.1482)*	-.8995 (.1403)*
m_Intent, γ_{01}	_____	-.0417 (.2466)	-.0028 (.2406)
m_Gun Possession, γ_{02}	1.0645 (.2941)*	1.0800 (.3000)*	1.095 (.2948)*
m_Weapon Possession, γ_{03}	.2566 (.2692)	.2671 (.2749)	_____
Within Person			
Intent, γ_{10}	_____	.7361 (.2512)*	.8425 (.2470)*
Gun Possession, γ_{20}	.7532 (.3433)*	.7817 (.3476)*	.6404 (.3460)
Weapon Possession, γ_{30}	1.2099 (.3261)*	1.0812 (.3313)*	_____
Interaction, γ_{40}	_____	_____	.2716 (.7879)

* $p < .05$; [†]standard errors in parentheses

Because respondents who possessed guns (n = 204) attacked with those guns in less than half of the cases (n = 94), it is necessary to examine the effect that actual gun attacks have on the likelihood that an opponent sustained serious injuries. Table 11 shows the results of hierarchical models that estimate the effects of gun attacks, net of personal influences, on the probability that opponent injuries are severe. Model 1 in Table 11 presents the results of the equation that excludes the measure of situation-specific intentions. The results of this model demonstrate that gun effects, net of personal influences, significantly increase the chances that, given an opponent is injured, opponent injuries are severe rather than minor. Similarly, non-gun weapon attacks increase the chances that opponent injuries are severe.

When respondent intentions are controlled (Model 2), attacks with guns significantly increase the chances that opponent injuries are severe. Attacks with non-gun weapons also significantly increase the likelihood that opponent injuries are severe rather than minor. These results suggest that gun effects are not drastically different when attacker's intentions to injure are not controlled than when they are controlled. The coefficient associated with the gun attack measure decreases slightly when intent is controlled compared to the model from which the intent measure is excluded. On the other hand, the non-gun weapon attack measure increases slightly when intentions are controlled. Finally, Model 3 demonstrates that, once again, the effect of a gun attack does not depend upon the attacker's intent to injure the opponent. Thus, the main effects model of attacks is the best of those being examined.

The predicted probabilities of an opponent being severely injured are presented in Table 12. The probability of a severe opponent injury is .28 when a respondent attacks without a weapon and does not intend to seriously injure the target of his attack. A gun attack by a non-intending respondent increases the probability of a severe opponent injury to .81. An attack with a non-gun instrument by a non-intending respondent is associated with a .57 predicted probability of severe opponent injuries. When an intending respondent attacks without any weapon, the opponent is severely injured 43 percent of the time. When the respondent intends to seriously injure his opponent and fires a gun, the opponent is severely injured 89 percent of the time. When the intending respondent attacks with a non-gun weapon, the probability an opponent's injuries are severe is .72.

Table 11: Estimated effects of gun *attack* measures on the likelihood that a respondent seriously injured an opponent.

	Model 1 (no intent)	Model 2 (intent)	Model 3 (interaction)
Fixed Effects	Coefficient[†]	Coefficient	Coefficient
Between Person			
Intercept, γ_{00}	-.9572 (.1112)*	-.9389 (.1470)*	-.8411 (.1379)*
m_Intent, γ_{01}	_____	-.0710 (.2500)	.0050 (.2441)
m_Gun Attack, γ_{02}	2.5114 (.6242)*	2.563 (.6391)*	2.5071 (.6410)*
m_Weapon Attack, γ_{03}	.5702 (.2913)**	.5844 (.2966)*	_____
Within Person			
Intent, γ_{10}	_____	.6735 (.2571)*	.8000 (.2517)*
Gun Attack, γ_{20}	2.4678 (.5928)*	2.3809 (.5979)*	1.9724 (.5778)*
Weapon Attack, γ_{30}	1.3484 (.3278)*	1.2239 (.3328)*	_____
Interaction, γ_{40}	_____	_____	-.5099 (1.3119)

* $p < .05$; ** $p = .05$; [†]standard errors in parentheses

Table 12: Predicted probabilities of a respondent attack, of an opponent injury, and of a severe opponent injury.

Situation Attributes	Predicted Probability of a Respondent Attack[a]	Predicted Probability of an Opponent Injury[b]	Predicted Probability of a Severe Opponent Injury[c]
No Intent and No Gun / Weapon Possession[d]	.41	.55	.28
No Intent and No Gun / Weapon Attack[d]	____	.68	.28
Intent and No Weapon Possession[e]	.69	.69	.45
Intent and No Weapon Attack[e]	____	.70	.43
No Intent and Gun Possession[f]	.58	____	.46
No Intent and Weapon Possession[g]	.80	.67	.53
No Intent and Gun Attack[h]	____	.34	.81
No Intent and Weapon Attack[i]	____	.68	.57
Intent and Gun Possession[j]	.82	____	.64
Intent and Weapon Possession[k]	.93	.79	.70
Intent and Gun Attack[l]	____	.49	.89
Intent and Weapon Attack[m]	____	.80	.72

[a] Predicted probabilities based on model 2 in table7 and using formula 1.
[b] Predicted probabilities based on model 2 in tables 8 and 9 and using formula 1.

[c] Predicted probabilities based on model 2 in tables 10 and 11 and using formula 1.
[d] Predicted probability calculated by assigning values of zero to all variables.
[e] Predicted probability calculated by assigning a value of one to the intent variable and zeros to all other variables.
[f] Predicted probability calculated by assigning a value of one to the gun possession variable and zeros to all other variables.
[g] Predicted probability calculated by assigning a value of one to the weapon possession variable and zeros to all other variables.
[h] Predicted probability calculated by assigning a value of one to the gun attack variable and zeros to all other variables.
[i] Predicted probability calculated by assigning a value of one to the weapon attack variable and zeros to all other variables.
[j] Predicted probability calculated by assigning a value of one to the intent and the gun possession variables and zeros to all other variables.
[k] Predicted probability calculated by assigning a value of one to the intent and the weapon possession variables and zeros to all other variables.
[l] Predicted probability calculated by assigning a value of one to the intent and the gun attack variables and zeros to all other variables.
[m] Predicted probability calculated by assigning a value of one to the intent and the weapon attack variables and zeros to all other variables.

Summary

The prediction that gun effects depend on what the possessor and attacker intends to accomplish is not supported. The effects of guns on the attack and injury outcomes of incidents do not depend on the possessor's / attacker's intentions. The main effects of guns are interpreted because there was not conclusive evidence to replace the simpler model. The trichotomous weapon possession and weapon attack variable is used in order to understand the main gun effects. The effects of weapon possession and attack measures are net of situation-specific intent to injure and personal influences.

Results show that respondent gun possession increases the probability he will attack the opponent, net of personal influences and situation-specific intent to injure. The effect of respondent non-gun weapon possession, such as a knife, bat, and a bottle, is also positive. The gun possession and gun attack measures do not have the same effects on the likelihood an opponent was injured as a result of the respondent's attack. The effect of respondent gun possession is not statistically significant, while the effect of respondent gun attack is statistically significant. Nevertheless, the coefficients associated with both measures are negative. Gun attacks reduce the chances an opponent is injured. Both gun possession and gun attacks significantly increase the chances that opponent injuries are severe. Finally, there is no evidence to suggest that the estimated effects of firearms on the three dependent variables are dramatically different when situation-specific intent is controlled than when it is not controlled.

Discussion and Conclusions

The purpose of this project is to advance knowledge about the micro-level effects that firearms have in situations of interpersonal conflict. Violent events that occurred during the latter part of completing this dissertation have brought the issue of the relationship between guns and violence to the forefront of national attention. Correspondingly, the issue of gun control has been prominent in government debates, in the media, and in conversations among citizens. This concluding chapter summarizes this project by relating it to the two most related pieces of empirical research and discussing the implications for theory, research, and firearm policies.

Comparison of Results

The findings do not support the prediction that gun effects depend on the intentions of the gun user. This hypothesis is based on the assertion that guns provide their possessors with a degree of power that allows them to get what they want in social situations (Kleck 1997:225; Tedeschi and Felson 1994). In addition, Felson and Messner (1996) found that gun effects were different in assaults than in robberies. They used a crime type variable as a proxy measure for intentions.

This finding that gun effects do not depend on intent contradicts Felson and Messner's (1996) results. They found stronger gun effects in assaults than in robberies. The most important difference between this project and their study is the way intent is measured. This study uses a direct measure of a respondent's situation-specific intentions to seriously injure an opponent and controls for personal influences. On the other hand,

Felson and Messner (1996) did not have a direct measure of intent. They assumed that crime type reflected the offender's intent to harm a target and could not allow for intent to vary across assaults and robberies. Their finding does not necessarily suggest that the different effects are due to differences in intent to injure. Robberies and assaults are different types of crimes and the different gun effects may be due to factors other than the aggressor's intent to harm. For instance, robbers are more likely than assault offenders to choose their targets in advance and third parties are more likely to be present in assault encounters than in robbery encounters (Felson and Messner 1996). It is possible that gun effects depend on these factors. The use of a direct measure of situation-specific intent provides an improved test of the interaction hypothesis.

Additional explanations for the contradictory findings are that different dependent variables were examined and that different samples were analyzed. Felson and Messner (1996) tested the interaction effect on the likelihood of a victim being killed rather than suffering non-lethal injuries. This study did not examine the probability of an opponent sustaining lethal injuries rather than non-lethal injuries. Gun effects may depend on intentions at the death stage of an encounter, but the evidence suggests that gun effects do not depend on intentions at the other important stages of an encounter.

Second, Felson and Messner (1996) examined a sample of cases contained in the NCVS. This data set excludes important types of violent and potentially violent encounters. In order for an assault incident to be counted by the NCS, an offender must make a physical attack or make a threat. Incidents such as heated arguments and insulting

matches are excluded. Furthermore, Cook (1985) found that victimization survey data on serious assaults are less complete than police records. He (Cook 1985) estimated that the NCS undercounts the number of nonlethal gunshot wounds by a factor of approximately three. This study used a broader sample of self-reported violent and potentially violent incidents that do not necessarily involve explicit threats.

The inability to uncover interaction effects may be due to low statistical power that is associated with statistical tests for interaction effects (Aiken and West 1991:156) and with limited variability that is associated with the within person models. Statistical power is the likelihood a statistical test, such as a t-test, will uncover an effect in a sample when there is an actual effect in the population (Aiken and West 1991:156). Furthermore, within person models require that there be variability on the measures within the level-2 units in order to detect effects. The fact that respondents contributed an average of less than 4 incidents to each subsample suggests that the within person variability is low.

For example, there is no variability in whether or not the respondent attacked an opponent across the incidents contributed by 46 percent (n = 247) of the respondents. In other words, nearly half of the respondents either attacked in all of their incidents or did not attack in all of their incidents. This result parallels those associated with the sample of incidents used to analyze the likelihood an opponent was injured and the likelihood an opponent was severely injured. Of the respondents who contributed incidents used to analyze the probability of an opponent being injured, 56 percent (n = 230) either injured their opponent in all of their incidents or did not injure their opponent in all of their

incidents. Of the respondent who contributed incidents used to analyze the chances of an opponent being severely injured, 71 percent (n = 236) either severely injured the opponent in all of their incidents or did not severely injure the opponent in all of their incidents. These results imply that variability in the dependent variables across respondents' incidents is low.

Nevertheless, it is worth using a within person model and the losing statistical power because it is critical that gun effects be separated from the effects of situation-specific intentions to injure and personal influences. It is important to be able to adequately separate gun effects from individual influences because it has been argued that the two are confounded (Kleck and Bordua 1983; Wolfgang 1958). A within person model accomplishes this important goal.

Research that addresses the effects of guns in situations of social conflict must examine the attack stage of an encounter. Empirical research has tended to ignore this stage of an encounter largely because of a lack of information about non-violent incidents. Data are not widely available about high risk situations that did not involve attacks. Without incidents that involve attacks *and* incidents that do not involve attacks there can be no dependent variable, the measure would be a constant. It is impossible to determine the chances that someone will physically attack an opponent using a sample of attack cases.

Using a sample of cases that involved actual attacks and explicit threats Kleck and McElrath (1991) estimated the effects that gun possession had on the chances that a

possessor would attack an opponent. Not all of the cases involved physical attacks. It is significant that they included cases that involved threats but no attacks and examined the attack stage of encounters. This analysis allowed them to understand a more complete range of firearm effects than if they had just examined injury outcomes. In order to gain a more complete understanding of gun effects, it is necessary to examine their potentially contradictory effects at the important stages of an incident. Gun effects at one stage might cancel out the effects at another. By looking at the attack stage of the encounter, Kleck and McElrath (1991) take a step back in the stages of an incident. This allows them to understand a wider range of firearm effects. Examining an early stage in an incident is analogous to looking at the effects of independent variables on the likelihood of a prison sentence as well as their effects on the likelihood of a conviction.

This project builds upon their research by using a heterogeneous sample of violent and non-violent, high risk situations to estimate gun effects on the likelihood that the possessor attacked. This sample is not limited, however, to incidents that involved an explicit threat. This sample includes cases, for example, in which there was an argument, incidents in which a respondent pulled a gun but did not attack or threaten, cases where a respondent was angry but decided not to act on that anger, incidents in which a bystander restrained a respondent before he could attack, and cases in which someone encouraged a respondent to attack but he refused. This sample includes a broader range of conflict situations that extend further back into the process; the part of the process before a threat is made.

Gun possession is found to increase the likelihood of a respondent attack, net of situation-specific intent to seriously injure and net of personal influences. This evidence supports the firearm facilitation hypothesis Kleck (1997:220-222) describes. This facilitation hypothesis makes several claims about how guns increase the chances that the possessor will attack. First, guns permit attacks from weaker individuals against stronger individuals. Without a gun, physically weaker individuals might perceive that they will be harmed if they have to make a physical attack. The weaker person may decide not to attack. Second, guns allow single people to attack multiple people. A lone attacker faces a higher risk of sustaining injuries due to counterattacks from a group of people. A gun allows that lone individual to attack multiple people without getting so close that he can easily be injured. Third, guns permit attacks from distances from which other attacks would not be possible. Gun possessors can attack from moving vehicles and into houses, for instance. In these situations it would be more difficult to attack without a gun. Finally, guns allow people who want to avoid actual physical contact with their opponents to attack their opponents. An attacker who does not want to make physical contact with a target will find that a gun allows him to attack without making physical contact.

The finding that gun possession increases the likelihood of an attack is one that contradicts the results of Kleck and McElrath's (1991) analysis. One explanation for this difference concerns the samples analyzed. In order for an incident to be counted in the NCVS, the sample Kleck and McElrath (1991) used, an explicit threat or an actual attack must have been made. The data used in the current project contain incidents in which

someone attacked a respondent, situations in which the respondent attacked an opponent, and in which respondents felt they were at high risk for becoming involved in a violent event. Therefore, this sample is not limited to those involving at least a threat. The positive effects of guns on the probability of an attack may be due to the fact that a wider variety of events were studied.

The finding that respondent gun attacks significantly reduced the likelihood of an opponent being injured is not new. This finding is consistent with the gun effects reported by Kleck and McElrath (1991) and supports their argument that people are not good shots. In order to further understand this negative relationship, the ratio of successful attacks to all attacks is compared across the three types of attacks: guns, non-gun weapons, and physical non-weapon. The ratio of successful gun attacks to all gun attacks is 3.6:10. For every ten attacks with a gun, approximately three and a half are successful, meaning the shooter hit his target. The ratio of successful non-gun weapon attacks to all non-gun weapon attacks is 8.9:10. Approximately 90 percent of respondent attacks with non-gun weapons hit their targets. Finally, 99 percent of respondent physical, non-weapon attacks meet their target. It is clear that respondent gun attacks are the least likely to hit their targets. Thus, although gun possession increases the chances that the possessor will attack, the chances a respondent who fires the gun will hit the target is low. In addition to the explanation that gun attackers are poor shots (Kleck 1997:226-227), it may be the case that guns facilitate attacks in situations where it is difficult to hit targets, such as attacks from moving vehicles. In this case it would be difficult to attack without a

gun but it is also difficult to hit the target in such a situation. Even though the gun facilitated an attack, the attack was likely to be unsuccessful.

Like Felson and Messner's (1996) findings, respondent gun possession significantly increases the chances that opponent injuries are severe, given that an opponent sustained some injury. Similarly, gun attacks increase the probability of an opponent sustaining severe injuries. This finding is consistent with the micro-level research that has examined gun effects on the likelihood of serious injuries and the likelihood of death.

One disparity between the two most recent research projects is the gun measures. Felson and Messner (1996) measured the effects of gun *possession* on the seriousness of victim injuries. Kleck and McElrath (1991) measured the effects of gun *attacks* on the likelihood of injuries and the effects of gun wounds on the chances of a victim being killed. One similarity between the two studies is that the same dependent variable was analyzed: the likelihood of a victim death (Felson and Messner 1996; Kleck and McElrath 1991). The results are consistent: gun possession and gun wounds significantly increase the probability of a victim being killed.

A limitation of this project in relation to the two most related existing research projects (Felson and Messner 1996; Kleck and McElrath 1991) is an inability to examine gun effects on the likelihood that an opponent is killed. The effect of guns on the likelihood an opponent died were not estimated due to the small number of death occurrences. An opponent died in only nine cases used in the analyses of injury outcomes.

This number is too low to permit a meaningful analysis of gun effects on the likelihood of lethal injuries.

The results of this project regarding the gun possession and gun attack measures indicate that both measures significantly increase the probability of an opponent being severely injured. Results also indicate the possession and attack measures do not have the same results on the probability of a respondent injuring an opponent. This disparity is likely due to the fact that the gun attack variable is a more precise measure of the respondent's behavior than is the gun possession measure. Given that a respondent attacked an opponent, the respondent did not fire his gun in over half of the cases (n = 110) in which he possessed a gun (n = 204). This means that gun possessing respondents frequently attacked in some other way. The important point is that gun possession is not the same thing as a gun attack and researchers must use caution when measuring gun variables.

Theoretical Implications

The propositions associated with coercive action theory predict that guns provide people with power that permits them to carry out their intentions. The findings do not support the expectation that gun effects depend on whether or not the possessor / user intends to seriously injure an opponent. A limitation, however, is that the dichotomous measure of situation-specific intentions does not capture the potential universe of situational intentions. The intent variable measures whether the respondent intended to seriously injure his opponent or intended something else. More precise measures of that

something else may show that gun effects do depend on intentions. For instance, guns effects may differ from other weapons when the respondent specifically intends to avoid violence.

The effects of guns on the outcomes of violent events may be confounded with the effects of individual intentions because those with the strongest motivation to injure may choose a more "serious" weapon (Kleck and Bordua 1983; Wolfgang 1958). If gun effects are confounded with the effects of situation-specific intent gun effects should be diminished when intent is controlled compared to when it is not controlled (seeKleck and McElrath 1991:688). Previous empirical research, however, has not been able to adequately control for situation-specific intentions and isolate firearm effects. Researchers have been forced to rely on proxy measures for intentions, such as offender demographics and crime type.

Results of the within person analyses indicate that, net of personal influences, the independent effects of guns are *not* radically different when situation-specific intentions are controlled than when intentions are not controlled. Nevertheless, situation-specific intentions to injure significantly increase the chances that a respondent will attack his opponent, that a respondent will injure his opponent, and that a respondent will seriously injure his opponent.

These two findings imply that the effects of situation-specific intentions and the effects of guns are not entirely confounded. The relationship between an individual's intentions to seriously injure and an individual's choice of weapon must be examined

further. The hypothesis that gun possession and gun attacks independently increase the chances of violence is partially supported. Consistent with the results of prior research, gunshot attacks significantly increase the probability that inflicted injuries will be severe rather than minor. While gun possession increases the probability that the possessor will attack his opponent, a gunshot is significantly less likely to injure its target than other forms of attack.

A within person model was estimated to understand the independent effects of guns. Person-level influences, however, were not modeled. The social interactionist perspective argues that it is important to understand the relative importance and effects of influences at both levels. This includes person-level effects and situation-level effects. Future theoretical and empirical work is necessary to provide an understanding of the influences at both levels. The evidence does suggest that guns independently influence the dynamics of social situations. Future theoretical work on criminal events should recognize the important influence of firearms.

Research Implications

This project has several implications for future research into gun effects and the relationship between firearms and violence. This project further highlights the importance of understanding micro-level gun effects; it illustrates the importance of examining several stages of a violent encounter; and it demonstrates the value in measuring variables at their appropriate levels.

With few exceptions, empirical research has examined macro-level relationships

between guns and violent crime, such as robberies and assaults. In order to understand what contributes to the aggregate patterns it is necessary to address those micro-level processes because aggregate patterns are the result of micro-level events. Future research must contribute to our limited knowledge by concentrating on how the presence and possession of guns contributes to an individual becoming involved in a high risk encounter and by focusing on how guns affect the dynamics of social encounters.

A further justification for micro-level gun research is that more people can be expected to carry guns in public and thus, guns may be involved in social encounters more frequently. This expectation is based on the assumption that eased carrying laws may increase carrying among law abiding citizens and offenders. Citizens will find it easier to legally carry and offenders may resort to increased carrying because of a fear that their targets and enemies will be armed (Green 1987:71). There are two general types of laws that govern the carrying of concealed firearms. The first type of firearm-carrying law provides broad discretion to government officials in granting concealed firearm-carrying permits to citizens. For this reason these carrying laws are commonly called discretionary laws. The second, more recent, laws are referred to as shall-issue laws because government must now issue concealed-carrying permits when a citizen satisfies the established criteria (Snyder 1997).

A critical difference is that the discretionary laws imply that governments 'may' issue the permits, and the shall-issue laws imply that the governments will issue the permits if the applicant meets certain criteria (Snyder 1997). These differences mean that

there is less room for discretion to enter into the decision making process. The shall-issue laws might be expected to produce an increased prevalence of public gun carrying because they make it easier for law abiding citizens to legally carry guns for protection.

Criminals who are typically not armed with guns might respond to a well armed citizenry by arming themselves. These criminals may fear a serious attack from an opponent. Survey evidence seems to suggest that convicted criminals consider seriously the possibility of encountering a citizen armed with a gun. Wright and Rossi (1986:147-148) asked incarcerated felons what they personally worry about when considering criminal behaviors. Among the over 1,500 respondents, the things most considered[12] were the potential for getting caught (54 percent), the possibility of going to prison (50 percent), and the probability that the respondent's family would look down on him (48 percent). About a third of the respondents considered the possibility of hurting someone during the crime, of getting shot by the police, and of getting shot by a victim. While this evidence suggests that criminals are generally more concerned about actions of the criminal justice system and family members' opinions, they also consider the possibility of getting shot by a victim. Nevertheless, it is not known how many criminals would *not* carry guns if victims were *not* armed (Kleck 1997:205). Micro-level research into the effects of guns will provide valuable information about what to expect if public gun

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Respondents could indicate that they thought regularly, often, seldom, or never about getting caught, getting shot by the police, getting shot by the victim, having to go to prison, being looked down on by friends, and hurting or killing someone. Wright and Rossi (1986:148) combined the 'regularly' and 'often' response categories to identify the things the respondents most worried about.

carrying becomes more frequent.

Findings show that situation-specific intent to injure has an important effect on a variety of outcomes in potentially violent and violent situations. Future research must continue to use advanced measures of individual, situation-specific intentions. A more precise variable would measure not only a continuum of intentions to injure but intentions to avoid and prevent violence. This will provide a more complete understanding of how gun effects relate to what a person intends to do. This project uses the social interactionist perspective and argues that a person's general willingness to use violence or to become involved in violent behavior is different from situation-specific intentions to harm someone. The implication is that variables must be collected from at least two levels, the person and the situation. When these multilevel data are analyzed, it is possible to understand the relative contributions of personal and situational variables to the outcomes of potentially violent and violent social encounters. This evidence can be used to evaluate the propositions of coercive action theory.

Furthermore, future research must address the critical stages of violent events. Kleck and McElrath (1991) recognize that gun effects may have a variety of effects depending on the different stages of an event. In particular, they point out that research must examine gun effects on the chances a possessor will attack. It is not known how the possession of a gun is related to a person becoming involved in high risk situations and in actual violence. It is not only important for future research to address gun effects at the attack and injury stages of encounters, but it is also important for future research to

address their effects on entering high-risk situations and on making explicit threats.

A final recommendation for future research relates generally to studies of criminal events. In order to understand the precise role of guns, it will be necessary to understand the sequencing of events that occur. This is a critical deficiency of research on criminal events (see Cook 1986; Kleck and DeLone 1993; Ziegenhagen and Brosnan 1985). When sequencing is better understood, the effects of defensive and offensive gun use can be examined. Firearm effects on critical outcomes may differ according to how the gun was being used: defensively or offensively. Our current knowledge is based on incidents in which it is not clearly understood whether the gun possessor / user acted offensively or defensively. It is often unclear who is the actual victim and who is the offender in violent situations. The person who is physically harmed in an encounter may have begun as the aggressor. A challenge for future theoretical and empirical work is to sort out the relationships between situation-specific intentions, the offensive and defensive use of guns, and the outcomes of potentially violent and violent situations.

Policy Implications

Zimring and Hawkins (1997:200) argue that it would be a mistake to ignore guns when drafting plans to control and reduce lethal violence. One system of gun regulation would deny guns to all people. This proposal is akin to the ongoing prohibition of designated drugs and the failed prohibition on alcohol in the 1920's in the United States. Gun regulation proposals that aim to prohibit ownership in the general population are based on the assumption that gun availability exerts a net positive influence on rates of

violence (Kleck 1997:351). Because self-defense with guns is frequent and effective, Kleck (1997:383) claims that reducing the availability of guns in the general population will not yield a net reduction in violence. Reducing gun availability takes away an effective self-defense tool. With the widespread availability of firearms throughout the nation and with opposition to such policies it is unlikely that a policy of general prohibition would be successful.

The current system of restrictive gun regulation denies gun ownership to certain groups of people, such as youths and convicted felons, rather than prohibiting gun ownership in the general population (Zimring and Hawkins 1997). Zimring and Hawkins (1997) argue that this system fails in two regards. First, firearms are *not* denied to many people who will misuse them. Kleck (1997:391) estimates that about one-third to one-half of prospective murderers and robbers are denied legal access to guns because of the controls that prohibit persons with a prior criminal conviction from possessing firearms. The remaining (two-thirds to one-half) prospective murderers and robbers presumably would have legal access to firearms. Second, the goal of keeping guns out of the hands of the designated special risk populations, like juveniles and convicted felons, is hindered by the large number of guns in circulation (Zimring and Hawkins 1997). The number of guns estimated to be in circulation in the United States exceeds 200 million (Kleck 1997; Lott Jr. and Mustard 1997). Furthermore, juveniles (Sheley and Wright 1995) and convicted felons (Wright and Rossi 1986) typically obtain firearms from sources that are outside the reach of firearm regulation, such as private transactions. Kleck (1997) also

recognizes this deficiency in the existing system and suggests that nondealer transactions, such as those that occur at gun shows, would be regulated in an effective system.

Gun regulation policy, in general, assumes that gun possession and gun attacks make a situation more dangerous than would otherwise be the case. The results of this project suggests that the presence of a gun independently increases the probability that its possessor will attack. Research has not given sufficient attention to this stage of violent events and the results of this project contradict the findings from existing studies. Therefore, more work is needed before a consensus can be reached and conclusions drawn. Specifically, it is necessary to compare the situations that involve gun attacks with those that involve non-gun attacks. This will provide useful information about the different circumstances under which attacks are made with guns and those made without guns. For instance, the effect of gun possession on attacks may be related to the fact that guns permit attacks from distances, such as from a car to a target outside of a car, and from inside a home to an opponent outside of the home.

The findings regarding gun effects on the probability of a target being injured are consistent with the results of previous research. Gun attacks decrease the chances a target will be injured. One explanation for this effect is that people are not good shots (Kleck and McElrath 1991). It might also be the case that guns allow people to initiate attacks in situations where it is difficult to inflict injuries, such as attacks from moving vehicles or attacks on moving vehicles. Again, it is useful to compare the circumstances of gun attacks with the circumstances of non-gun attacks. Such an examination will help explain

why attacks with guns are less likely to produce any injuries than other methods of attack.

This research supports the contention that attacks with guns increase the likelihood of a target being seriously injured, apart from the attackers' intentions and given that a target has been injured. This is consistent with the previous finding that guns increase the chances of a victim being killed. This research also supports the argument that an individual's intentions are an important determining factor in the outcome of an incident. Both guns and individuals contribute to the severe injuries that result from violent events. This implies, without surprise to many people, that a violence-reducing policy should give significant attention to the use of firearms *and* to those who act violently. Zimring and Hawkins (1997) offer an approach to examining the violence problem and to evaluating proposed approaches to controlling violence.

Criminal justice agencies, such as the police, courts, and corrections, should focus special attention on crimes of violence rather than attempt to control violence by fighting crime in the general sense (Zimring and Hawkins 1997). Zimring and Hawkins (1997) argue that violence, and particularly lethal violence, is *not* so closely related to crime that general crime fighting tactics can reduce the significant harm that stems from violence. To focus policy efforts on fighting crime in hopes of simultaneously fighting lethal violence is misguided (Zimring and Hawkins 1997).

Furthermore, by continuing to focus policies on the general crime problem, attention is taken away from the special problem of interpersonal violence. Zimring and Hawkins (1997) call for strategies that aim to reduce the harm that results from violent

events. They argue that rational, well conceived policies *can* reduce the harm associated with interpersonal violence. Specifically, prevention strategies derived from a public health perspective have the highest potential for success. But they are quick to caution against thinking of lethal violence as a disease. A better way to think of the lethal violence problem is as a disorder with several causes (Zimring and Hawkins 1997:188). They cite the successes of public health approaches to the problem of injuries and deaths caused by automobile accidents in arguing that such an approach can be successfully applied to the problem of lethal violence. Goals of such an approach include reducing assaults, reducing the number of crimes, such as robberies, that involve violence, and making interpersonal violence safer.

They (Zimring and Hawkins 1997) seem to favor the use of multiple intervention, loss prevention strategies to control violence and reduce the associated harm. A multiple intervention policy explicitly recognizes that no single solution exists. This study shows that, indeed, guns and individual intentions independently contribute to violent outcomes. Regarding the availability of firearms and the willingness of people to use violence, Zimring and Hawkins (1997:189) postulate that "dramatic progress will come if both risk factors are abated simultaneously". Furthermore (Zimring and Hawkins 1997:189),

> the optimum harm-reduction strategy is more likely to be the pursuit of multiple loss-reducing interventions, with each individual contribution to safety being amplified by other reductions in the rate or seriousness of assaults.

This sort of approach is not easily implemented nor are multiple harm-reduction strategies easily brought for consideration. There is a tendency to search for single

solutions that are aligned with an audience's belief about the basic causes of violence (Zimring and Hawkins 1997). For instance, an audience that believes guns are the driving force behind violence will react favorably to strict gun control policies. An audience that believes bad individuals are the driving force behind rates of violence will support sentencing policies that are hard on violent criminals. The important point is that these policies are singular in focus.

In order for a multi-focused loss-prevention approach to become a viable option, expectations must shift "from single- to multiple-solution sets" (Zimring and Hawkins 1997:190). Although the purpose of Zimring and Hawkin's (1997) research was not to offer a comprehensive, multifaceted loss prevention plan, they do provide basic directions for the future. They identify three aspects of the violence problem that policies must address: 1) firearms; 2) rates of violence among African-Americans; and 3) the incidence of stranger violence. Attention to firearms is necessary because research shows that guns have significant, independent effects that increase the likelihood of a target being seriously injured and increase the chances of a victim being killed.

Developing a formula for reducing the serious harm that results from violence by focusing attention on firearms is not a simple matter. Removing firearms from situations of conflict does not necessarily equate to a reduction in attacks and a reduction in serious injuries. If a gun is unavailable a person can substitute another weapon that can also be used to cause harm (Kleck 1997:227-233; Wolfgang 1958:79-81; Wright, Rossi and Daly 1983:189; Zimring 1968:724-725). These include fists and feet as well as everyday

objects such as cars, bottles, baseball bats, knives, chairs, and so forth. This is known as the weapons substitution hypothesis (Wright, Rossi and Daly 1983:190). Wright et al. (1983:189) pose the important question: "would the people who presently kill, rob, and assault with firearms not, in a "non-guns" condition, simply substitute some other weapon instead"? They (Wright, Rossi and Daly 1983:190) claim that the answer to this question "turns" on the attacker's intentions.

The weapons substitution thesis assumes that a person with a priori intentions to seriously injure an opponent will choose a gun and that one who does not intend to seriously injure an opponent will choose some other weapon[13] (Wright, Rossi and Daly 1983:190). This argument is closely linked to the assertion that the effects of intent are confounded with the effects of guns. The relationship between guns and violence is due, in part, to the relationship between intent to injury and injuries. This study found that gun effects are not completely confounded with the situation-specific intentions of the gun possessor and the gun attacker. The effects of guns do not dramatically change when situation-specific intentions to seriously injure are controlled. Although this is not conclusive evidence, it does suggest that the relationship between choice of weapon and intentions is complex. The finding that firearms have an independent effect suggests that motivations do not necessarily overcome technology. Research must continue to directly address whether or not a gun possessor would attack if he did not have a gun.

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The weapons substitution hypothesis is applied to serious injuries in this case rather than only to lethal injuries.

Furthermore, the weapons substitution thesis assumes that guns do not have significant, independent effects on the outcomes of incidents. If the intending person did not have a gun, some other weapon would be selected and a similar outcome would result. This implies that gun effects on the ultimate outcomes of incidents are no different than the effects of other weapons. However, gun effects are found to have significant effects net of situation-specific intent to seriously injure and net of personal influences. This suggestive evidence implies that the effects of firearms are different from the effects of other weapons. A situation is not the same when a person has a gun because respondent gun attack is associated with a greater probability that an opponent will sustain severe injuries than other methods of attack . Nevertheless, non-gun weapon possession and attacks non-gun weapons, such as knives and clubs, are associated with a greater probability that the possessor will attack and injure his opponent than gun possession and gun attacks. Future research must examine the independent effects of guns in relation to the independent effects of other widely available weapons in order to obtain a more complete answer to the weapon substitution question.

Summary

This study contributes to existing knowledge about micro-level gun effects and highlights the importance of this type of micro-level research. Gun effects remain important after intent to injure is controlled. Net of personal influences and net of situation-specific intent, gun possession increases the probability a possessor will attack, gun attacks decrease the chances of a target being injured, and gun attacks increase the

probability of a target being severely injured. In terms of theory, this research suggests that guns have independent effects; gun effects do not depend on what the possessor / attacker intended to do. This finding has important implications for research. More precise measures of situation-specific intent may reveal that gun effects do depend on intentions. A dichotomous measure may not capture the important dimension of intent.

In addition, this study highlights the difference between situation-specific intent and personal influences. Future research must recognize this difference and collect and analyze data appropriately. Again, this sort of research will relate back to the social interactionist perspective which posits that personal influences as well as situational variables play important determining roles in the outcomes of social situations. In terms of policy, this study illustrates that guns and individual intentions are important factors that contribute to violent outcomes of situations. Therefore, policies should not search for single solutions. Complex problems demand complex, multifaceted strategies for harm reduction.

Appendix A

Avoided Violent and Violent Incident Reports

AVOIDED VIOLENT INCIDENT REPORT

Id#

Please enter the incident number

Please enter the month (1-36) in which this incident occurred

Avoided Narrative *(text)*

Did this incident involve?

racial/ethnic animosity *(y/n)*
animosity towards homosexuals *(y/n)*
religious animosity *(y/n)*
domestic violence *(y/n)*
robbery *(y/n)*

What was this incident primarily about?

(1)Dispute over a woman (2)Dispute about money (3)Dispute about drugs (4)Dispute over property (5)Dispute over alcohol (6)Dispute over sex (7)A physical affront (8)Verbal insult(s)/Physical gesture(s) (9)Challenge over territory/turf (10)Other behavior judged unjust/inappropriate (11)Challenge to Authority (12)A physical attack (13)Respondent's Criminal Behavior (14)Respondent's Substance Abuse (15)Other

other (*text*)

Did this incident involve gang issues? *(y/n)*

Was there only one opponent or was there more than one?

How Many?

IF ONE

How was the opponent of this attack related to you?

(1)Stranger (2)Acquaintance: knew by sight (3)Acquaintance: knew by name (4)Friend (5)Girlfriend/Boyfriend (6)Ex-Girlfriend Boyfriend (7)Live-in Partner (8)Ex-Live In Partner (9)Mom (10)Dad (11)Son (12) Daughter (13)Stepson (14)Stepdaughter (15)Brother (16)Sister (17)Spouse (18)Ex-spouse

Other non-relative *(text)*
Other relative *(text)*

What was the opponent's gender? *(1) Male (2) Female*

Age? *(1)Under 12 (2)12-14 (3)15-17 (4)18-20 (5)21-29 (6)30-39 (7)40-49 (8)50-59 (9)60 or over*

Race/ethnicity? *(1)African American (2)Hispanic/Mexican or Spanish-American (3)Caucasian (4)Native American (5)Asian (6)Other)*

IF MORE THAN ONE

How were the opponents in this incident related to you? Check all that apply

Stranger *(y/n)*
Acquaintance *(1)Knew by sight (2)Knew by name (3)Both*
Friend *(y/n)*
Girlfriend/Boyfriend *(1)Current (2)Ex (3)Both*
Live-in Partner *(1)Current (2)Ex (3)Both*
Other non-relative *(text)*
Parent *(1)Mom (2)Dad (3)Both*
Children *(1)Son (2)Daughter (3)Both*
Step-children *(1)Step-son (2)Step-daughter (3)Both*
Sibling *(1)Brother (2)Sister (3)Both*
Spouse *(1)Current (2)Ex (3)Both*
Other relative *(text)*

Were they male or female?

(1)All Male (2)All Female (3)Both male and female

How old would you say the youngest was?

(1)Under 12 (2)12-14 (3)15-17 (4)18-20 (5)21-29 (6)30-39 (7)40-49 (8)50-59 (9)60 or over

How old would you say the oldest was?

(1)Under 12 (2)12-14 (3)15-17 (4)18-20 (5)21-29 (6)30-39 (7)40-49 (8)50-59 (9)60 or over

What was the race/ethnicity of the opponents? Mark all that apply.

White *(y/n)*
African American *(y/n)*
Hispanic *(y/n)*
Native American *(y/n)*
Asian *(y/n)*
Other *(text)*

Were you involved in an actual confrontation? (if you were there, you were involved) *(y/n)*

What made this a high-risk situation? Select all that apply in time order

Pushing, Shoving, Grabbing *(1)Against respondent/someone with respondent (2)BY respondent/someone with respondent (3)BY others*

Threats of Violence *(1)AGAINST respondent (2)AGAINST someone with respondent (3)BY someone with respondent (4)BY respondent (5)BY others*

Attempts of Violence *(1)AGAINST someone with respondent (2)BY someone with respondent (3)BY others*

Insults *(1)AGAINST respondent (2)AGAINST someone with respondent (3)BY respondent (4)BY others*

Heated Argument *(1)Respondent involved (2)Someone with respondent involved (3) Others involved*

Actual Violence *(1)Against someone with Respondent (2)By someone with Respondent (3)By others*

Respondent so angry could have hurt someone *(y/n)*
other *(text)*

Where did this incident occur?

At a home or lodging *(1)Respondent's home (2)Opponent's home (3)Known third party's home (4)Unknown third party's home*

Commercial place *(5)Bar/pub/tavern (6)Nightclub (7)Restaurant*

(8)Bank (9)Gas station/convenience store (10)Office/factory/warehouse (11)Mall (12)Hotel/Motel

other *(text)*

Workplace *(13)Respondent's workplace (14)Opponent's workplace (15)Known third party's workplace*

Parking lot/garage *(16)Commercial parking lot/garage (17)Non-commercial parking lot/garage (18)Apartment/townhouse parking lot/garage*

School *(19)Inside school building (20)On school property, outside school building*

Open area, on street or public transportation *(21)On the street (other than immediately adjacent to respondent, opponent, or third party's home (22)City or state park (23)On public transportation or in a station (bus, train, plane, airport, depot)*

other (*text*)

In a private car, or just outside after stopping car *(24)In private car, or just outside after stopping car*

In prison/ jail *(25)In the yard (26)Inside*

other (*text*)

If 2, 3, 5, 6 or 7

Was this a place you had been before? *(0)No (1)Once (2)A few times (3)Many times*

About what time did this incident happen?

During Day *(1)After 6am-12noon (2)After 12noon-6pm (3)Don't know the time*

At Night *(4)After 6pm-12AM (5)After 12AM-6am (6)Don't know the time of night*

Were the opponent(s) drinking or on drugs? *(0)No (1)Drinking (2)Drugs (3)Both (4)Couldn't tell which*

Had you been drinking before the incident? How many drinks? *(0)No (1)1-3 (2)4-6 (3)7-12 (4)13-20 (5)21 +*

Had you been using drugs before the incident? *(y/n)*

If yes

Marijuana *(y/n)*
Crack *(y/n)*
Cocaine *(y/n)*
Heroin *(y/n)*
Acid *(y/n)*
Speed *(y/n)*
Other *(y/n)*

Who made the first threat, push, shove, grab, or attempted physical attack?
(1)Respondent (2)Someone with respondent (3)An opponent
other (*text*)

Did you do any of these actions in conflict with opponent(s)?

Verbal Challenge

Insults or degrading remarks *(y/n)*

Demands

Demanded apology *(y/n)*
Demanded person leave scene *(y/n)*
Demanded compliance *(y/n)*
other (*text*)

Threat with a weapon

Demanded apology *(y/n)*
Demanded person leave scene *(y/n)*
Demanded compliance *(y/n)*
other *(text)*
If yes

What type of weapon? *(0)No (1)Revolver (2)Derringer or single-shot (3)Semi-Handgun (4)Fully-Handgun (5)Hunting or target rifle (6)Semi-automatic rifle (7)Fully*

automatic rifle (8)Shotgun (9)Sawed-off shotgun (10)Knife

Was the gun loaded? *(y/n)*

Other sharp object (scissors, ice pick, axe, etc.) *(text)*

Blunt object (rock, club, blackjack, etc.) *(text)*

other *(text)*

Physical Act

Push, shove, grab *(y/n)*

Physical gesture *(y/n)*

Attempt to avoid violence

Attempt to withdraw from situation *(y/n)*

Attempt to mediate a dispute *(y/n)*

Apology/excuse for behavior *(y/n)*

Compliance with demand *(y/n)*

Stayed out of it *(y/n)*

Attempted to Restrain *(y/n)*

Called or threatened to call police *(y/n)*

Other (*text*)

Other (*text*)

Did you intend to seriously injure the opponent(s)? *(y/n)*

Did opponent(s) have a weapon? *(y/n)*

If yes

What kind of weapon did the opponent have? (mark all that apply)

Handgun *(1)Revolver (2)Derringer or Single Shot (3)Both*

Automatic Handgun *(1)Semi-Automatic (2)Fully-Automatic (3)Both*

Shotgun *(1)shot gun (2)Sawed-off (3)Both*

Hunting Rifle *(1)single-shot target or hunting*

Automatic Rifle (*1)Semi-Automatic (2)Fully-Automatic (3)Both*

Knife *(y/n)*

Bottle/Glass *(y/n)*

Other sharp object (scissors, ice pick, axe, etc.) *(text)*

Blunt object (rock, club, blackjack, etc.) *(text)*

other (*text*)

Did you have a weapon with you during this incident, other than those already described? *(0)No (1)Yes*

If no

If you had a gun would you have attacked? *(0)No (1)Yes*

If yes

What kind of weapon did you have with you during this incident?

Handgun *(1)Revolver (2)Derringer or Single-shot (3)Both*
Automatic Handgun *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Shotgun *(1)shot gun (2)Sawed-off (3)Both*
Hunting Rifle *(1)single-shot target or hunting*
Automatic Rifle *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Knife *(y/n)*
Bottle/Glass *(y/n)*
Other sharp object (scissors, ice pick, axe, etc.) *(text)*
Blunt object (rock, club, blackjack, etc.) *(text)*
other *(text)*
If answer yes to any on gun categories:
Was the gun loaded? *(y/n)*

How did you get the weapon *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
other *(text)*

If 1
Did you have a weapon because *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*
Other *(text)*

Would you have gone into this situation without this weapon? *(0)No (1)Yes (2)Yes, with some other weapon*

Did anyone who was with you have a weapon? *(0)No (1)Yes*

If yes

Handgun *(1)Revolver (2)Derringer or Single-shot (3)Both*
Automatic Handgun *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Shotgun *(1)shot gun (2)Sawed-off (3)Both*
Hunting Rifle *(1)single-shot target or hunting*
Automatic Rifle *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Knife *(y/n)*
Bottle/Glass *(y/n)*
Other sharp object (scissors, ice pick, axe, etc.) *(text)*
Blunt object (rock, club, blackjack, etc.) ABLUNT2 *(text)*
other *(text)*

Had you been involved in disputes with this person or persons before this incident?

If yes
How many times have you been involved in disputes with this person? *(1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*

How recently? *(1)In past week (2)In past month (3)In past year (4)More than a year ago*

Have you described a dispute with this person in an incident you have already described?
avoided incident 1 through 10
offender incident 1 through 10

How many people were present at this incident?

with respondent *(0)0 (1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*
with opponent *(0)0 (1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*
with bystander *(0)0 (1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*

If yes

If others were present, did anyone intervene by actively encouraging violence? *(0)No (1)Yes*

If yes

Instigated the incident *(y/n)*
Cheered toward violent actions *(y/n)*
Blocked the encounter from outside interference *(y/n)*
Provided weapons *(y/n)*
Physically attacked one of participants *(y/n)*
other *(text)*

Did anyone intervene by actively discouraging violence? *(0)No (1)Yes*

If yes

Suggested offense unintentional *(y/n)*
Urged backing down *(y/n)*
Attempted to/physically restrained participants *(y/n)*
Called police or threatened to call police *(y/n)*
Other *(text)*

Was this incident related to any other incidents you have already described? *(y/n)*

If yes
avoided incident number
offender incident number

If you could relive this situation, would you do anything different? *(0)No (1)Avoid setting completely (2)Leave situation earlier (3)Talk out the conflict (4)Apologize for actions (5)Ignore offensive behavior/remarks (6)Avoid offensive behavior/act more appropriately (7)Be more cautious (8)Actually hurt someone*
other *(text)*

Why did you not use violence in this situation?

Opponent(s): left or backed down *(y/n)*
had weapons *(y/n)*
outnumbered or outsized you *(y/n)*
didn't want to hurt anyone *(y/n)*
law enforcement prevented it *(y/n)*
calmed down *(y/n)*
Situation not what you thought *(y/n)*
none of my business *(y/n)*

situation didn't arise *(y/n)*
Too much to lose if hurt someone *(y/n)*
other *(text)*
other *(text)*

Was there any law enforcement involvement in this incident? *(0)No (1)Contacted by respondent (2)Contacted by other participant (3)Contacted by bystander (4)Happened on scene*

Was anyone arrested? *(0)No (1)yes*

If yes
respondent *(y/n)*
someone with respondent *(y/n)*
opponent *(y/n)*

Was there any money or property taken during this incident?
approximate value: *(#)*

VIOLENT INCIDENT REPORT

Please enter the study number: *(#)*

Please enter the incident number: *(#)*

What month (1-36) did this incident occur in: *(#)*

Offender/Victim Narrative: *(text)*

Where did this incident occur?

At a home or lodging *(1)Respondent's home (2)Opponent's home (3)Known third party's home (4)Unknown third party's home*

Commercial place *(5)Bar/pub/tavern (6)Nightclub (7)Restaurant (8)Bank (9)Gas station/convenience store (10)Office/factory/warehouse (11)Mall (12)Hotel/Motel*
other *(text)*

Workplace *(13)Respondent's workplace (14)Opponent's workplace (15)Known third party's workplace*

Parking lot/garage *(16)Commercial parking lot/garage (17)Non-commercial parking lot/garage (18)Apartment/townhouse parking lot/garage*

School *(19)Inside school building (20)On school property, outside school building*

Open area, on street or public transportation *(21) On the street (other than immediately adjacent to respondent, opponent, or third party's home (22)City or state park (23)On public transportation or in a station (bus, train, plane, airport, depot)*
other (*text*)

In a private car, or just outside after stopping car *(24)In private car, or just outside after stopping car*

In prison/ jail (25)In the yard (26)Inside

other *(text)*

If 2, 3, 5, 6 or 7
Was this a place you had been before? *(0)No (1)Once (2)A few times (3)Many times*

About what time did this incident happen?

During Day *(1)After 6am-12noon (2)After 12noon-6pm (3)Don't know the time*
At Night *(4)After 6pm-12AM (5)After 12AM-6am (6)Don't know the time of night*

Did this incident involve?

racial/ethnic animosity *(y/n)*
animosity towards homosexuals *(y/n)*
religious animosity *(y/n)*
domestic violence *(y/n)*
drugs *(y/n)*

What was this incident primarily about? *(1)Dispute over a woman (2)Dispute about money (3)Dispute about drugs (4)Dispute over property (5)Dispute over alcohol (6)Dispute over sex (7)A physical affront (8)Verbal insult(s)/Physical gesture(s) (9)Challenge over territory/turf (10)Other behavior judged unjust/inappropriate (11)Challenge to Authority (12)Retaliation for a physical attack (13)Predatory Attack (14)Respondent's Criminal Behavior (15)Respondent's Substance Abuse (16)Other*
other *(text)*

Did this incident involve retaliation for a prior physical attack? *(y/n)*

If yes

Was the previous attack by? *(1)Respondent (2)Opponent(s) (3)Someone else*
Was the previous attack against? *(1)Respondent (2)Opponent(s) (3)Someone else*

Did this incident involve retaliation for something other than a physical attack? *(y/n)*

Did this incident involve gang issues? *(y/n)*

Was there only one opponent or was there more than one? (how many)

If one

How was the opponent of this attack related to you?
(1)Stranger (2)Acquaintance: knew by sight (3)Acquaintance: knew by name (4)Friend (5)Girlfriend/Boyfriend (6)Ex-Girlfriend Boyfriend (7)Live-in Partner (8)Ex-Live In Partner (9)Mom (10)Dad (11)Son (12) Daughter (13)Stepson (14)Stepdaughter (15)Brother (16)Sister (17)Spouse (18)Ex-spouse

Other non-relative (*text*)
Other relative (*text*)

What was the opponent's gender? *(Male, Female)*

Age? *(1)Under 12 (2)12-14 (3)15-17 (4)18-20 (5)21-29 (6)30-39 (7)40-49 (8)50-59 (9)60 or over*

Race/ethnicity? *(1)African American (2)Hispanic/Mexican or Spanish-American (3)Caucasian (4)Native American (5)Asian (6)Other*

If more than one

How were the opponents in this incident related to you? Check all that apply

Stranger *(y/n)*
Acquaintance *(1)Knew by sight (2)Knew by name (3)Both*
Friend *(y/n)*
Girlfriend/Boyfriend *(1)Current (2)Ex (3)Both*
Live-in Partner *(1)Current (2)Ex (3)Both*
Other non-relative (*text*)
Parent *(1)Mom (2)Dad (3)Both*
Children *(1)Son (2)Daughter (3)Both*
Step-children *(1)Step-son (2)Step-daughter (3)Both*
Sibling *(1)Brother (2)Sister (3)Both*

Spouse *(1)Current (2)Ex (3)Both*
Other relative *(text)*

Were they male or female?
(1)All Male (2)All Female (3)Both male and female)

How old would you say the youngest was?
(1)Under 12 (2)12-14 (3)15-17 (4)18-20 (5)21-29 (6)30-39 (7)40-49 (8)50-59 (9)60 or over

How old would you say the oldest was?
(1)Under 12 (2)12-14 (3)15-17 (4)18-20 (5)21-29 (6)30-39 (7)40-49 (8)50-59 (9)60 or over)

What was the race/ethnicity of the opponents? Mark all that apply.

White *(y/n)*
African American *(y/n)*
Hispanic *(y/n)*
Native American *(y/n)*
Asian *(y/n)*
Other *(text)*

Had you been involved in disputes with this person(s) before this incident? *(y/n)*

If yes
How many times have you been involved in disputes with this person?
(1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10

How recently? *(1)In past week (2)In past month (3)In past year (4)More than a year*

Have you described a dispute with this person in an incident you have already described? *(y/n)*

If yes

Which past incidents also involved a dispute with this person?
Offender/Victim 1 through **Offender/Victim 10** *(y/n)*

Were the opponent(s) drinking or on drugs? *(0)No or don't know (1)Drinking (2)Drugs (3)Both (4)Couldn't tell which*

Had you been drinking before the incident? How many drinks? *(0)No (1)1-3 (2)4-6 (3)7-12 (4)13-20 (6)21 +*

Had you been using drugs before the incident? *(y/n)*

If yes

Marijuana *(y/n)*
Crack *(y/n)*
Cocaine *(y/n)*
Heroin *(y/n)*
Speed *(y/n)*
Acid *(y/n)*
Other *(text)*

What was your initial action in conflict with opponent(s)?

Verbal Challenge *(1)Insults or degrading remarks (18)Verbal Confrontation*

Demand *(2)Demanded an apology (3)Demanded person leave scene (4)Demanded Compliance (5)Other*

Threat with a weapon *(6)Demanded an apology w/weapon (7)Demanded person leave scene w/weapon (8)Demanded Compliance (9)Other w/weapon*

Physical Act *(10)Physical attack described above (11)Push, shove, grab (12)Physical gesture*

Attempt to avoid violence *(13)Attempt to withdraw from situation (14)Attempt to mediate a dispute (15)Apology/excuse for behavior (16)Compliance with demand (17)Attempt to Ignore*

other *(text)*

Other *(text)*

If 1 through 12
Did you make any attempts to avoid violence during this

incident? *(0)No (1)Attempt to withdraw from situation (2)Attempt to mediate a dispute (3)Apology/excuse for behavior (4)Compliance with demand*

other *(text)*

Who made the first physical attack or attempted physical attack?

(1)Respondent (2)Someone with respondent (3)An opponent (4)Someone with an opponent

Other *(text)*

Did the opponent(s) attack you? *(y/n)*

If yes

What did you do immediately before the attack? *(0)Nothing (1)Directed verbal expression at or about opponent (2)Directed verbal expression at or about someone else (3)Refused to cooperate or comply with opponent (4)Refused to cooperate or comply with someone else (5)Made physical or nonverbal gesture (6)Made physical contact with opponent (7)Made physical contact with someone else (8)Physically attacked/attempted to attack opponent (9)Physically attacked/attempted to attack someone else (10)Other*

other *(text)*

How did the opponent(s) attack you? (check all that apply)

Hit or slapped with hands *(y/n)*

Kicked with knees or feet *(y/n)*

Scratched or bit *(y/n)*

Choked or strangled with hands *(y/n)*

Shot *(y/n)*

If yes: What kind of gun was used? *(1)Revolver (2)Derringer or single-shot (3)Semi-Automatic Handgun (4)Fully-automatic handgun (5)Single-shot target or hunting (6)Fully-automatic rifle (7)Semi-automatic rifle (8)shotgun (9)sawed-off shotgun*

Shot at but missed *(y/n)*

If yes: What kind of gun was used? *(1)Revolver (2)Derringer or single-shot (3)Semi-Automatic Handgun (4)Fully-automatic handgun (5)Single-shot target or hunting (6)Fully-automatic rifle (7)Semi-automatic rifle (8)shotgun (9)sawed -off shotgun*

Hit with gun held in hand *(y/n)*

If yes: What kind of gun was used? *(1)Revolver (2)Derringer or single-shot (3)Semi-Automatic Handgun (4)Fully-automatic handgun (5)Single-shot target or hunting (6)Fully-automatic rifle (7)Semi-automatic rifle (8)shotgun (9)sawed -off shotgun*

Stabbed/cut with knife/sharp weapon *(y/n)*

If yes: What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*

other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

Attempted attack with knife/sharp weapon *(y/n)*

If yes: What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*

other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

Hit with object (other than gun) held in hand *(y/n)*

If yes: What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*

other sharp object *(text)*

type of blunt object *(text)*
Other *(text)*

Hit with thrown object *(y/n)*

If yes: What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

Attempted attack with weapon other than gun/knife/sharp weapon *(y/n)*
If yes: What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

Choked or strangled with something other than hands *(y/n)*
If yes: What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

Threw against wall/to ground, etc. *(y/n)*

Other *(text)*

Were you injured by the opponent? *(y/n)*

What kind of injury (check all that apply)?
Knife or stab wounds *(y/n)*
Gun shot, bullet wounds *(y/n)*
Broken bones or teeth knocked out *(y/n)*
Internal injuries *(y/n)*
Knocked unconscious *(y/n)*

Bruises, black eye, cuts, scratches, swelling, chipped teeth *(y/n)*
Other *(text)*

What resulted from the injuries? *(1)Respondent Hospitalized (2)Respondent received other medical attention (3)Respondent received no medical attention (4)Other*
Other *(text)*

Did opponent(s) have a weapon other than those already described? *(y/n)*

What kind of weapon did the opponent have? (mark all that apply)

Handgun *(1)Revolver (2)Derringer or Single-shot (3)Both*
Automatic Handgun *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Shotgun *(1)shot gun (2)Sawed-off (3)Both*
Hunting Rifle *(1)single-shot target or hunting*
Automatic Rifle *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Knife *(y/n)*
Bottle/glass *(y/n)*
Other sharp object (scissors, ice pick, axe, etc.): *(text)*
Blunt object (rock, club, blackjack, etc.) *(text)*
Other *(text)*

Did you attack the opponent(s)? *(y/n)*

If yes
How many opponent(s) did you attack? *(1)1 (2)2 (3)3 (4)More than 3*

What did the opponent(s) do just before your attack? *(0)Nothing (1)Directed verbal expression at or about respondent (2)Directed verbal expression at or about someone else (3)Refused to cooperate or comply with respondent (4)Refused to cooperate or comply with someone else (5)Made physical or nonverbal gesture (6)Made physical contact with respondent (7)Made physical contact with someone else (8)Physically attacked/attempted to attack respondent (9)Physically attacked/attempted to attack someone else (10)Complied with demand*
other *(text)*

How did you attack the opponent(s)? (check all that apply)

Hit or slapped with hands *(y/n)*

Kicked with knees or feet *(y/n)*

Scratched or bit *(y/n)*

Choked or strangled with hands *(y/n)*

Shot person *(y/n)*

What kind of gun was used? *(1)Revolver (2)Derringer or single-shot (3)Semi-automatic handgun (4)Fully-automatic handgun (5)Single-shot target or hunting (6)Fully-automatic rifle (7)Semi-automatic rifle (8)shotgun (9)sawed-off shotgun*

Was the gun loaded? *(y/n)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Would you have attacked the person if you did not have a gun? *(y/n)*

Shot at but missed *(y/n)*

What kind of gun was used? *(1)Revolver (2)Derringer or single-shot (3)Semi-automatic handgun (4)Fully-automatic handgun (5)Single-shot target or hunting (6)Fully-automatic rifle (7)Semi-automatic rifle (8)shotgun (9)sawed-off shotgun*

Was the gun loaded? *(y/n)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Would you have attacked the person if you did not have a gun? *(y/n)*

Hit with gun held in hand *(y/n)*

What kind of gun was used? *(1)Revolver (2)Derringer or single-shot (3)Semi-automatic handgun (4)Fully-automatic handgun (5)Single-shot target or hunting (6)Fully-automatic rifle (7)Semi-automatic rifle (8)shotgun (9)sawed-off shotgun*

Was the gun loaded? *(y/n)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon*

(3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Would you have attacked the person if you did not have a gun? *(y/n)*

Stabbed/cut with knife/sharp weapon *(y/n)*

What kind of other weapon was it?*(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Attempted attack with knife/sharp weapon *(y/n)*

What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Hit with object (other than gun) held in hand *(y/n)*

What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into*

the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Hit with thrown object *(y/n)*

What kind of other weapon was it? *(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without

this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Attempted attack with weapon other than gun/knife/sharp weapon *(y/n)*

What kind of other weapon was it?*(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Choked or strangled with something other than hands *(y/n)*

What kind of other weapon was it?*(1)knife (2)Other sharp object (scissors, ice pick, axe, etc.) (3)Blunt object (rock club, blackjack, etc) (4)Bottle/Glass*
other sharp object *(text)*
type of blunt object *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into*

the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon
Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*

Would you have gone into this situation without this weapon *(0)No (1)Yes (2)Yes, with some other type of weapon*

Threw against wall/to ground, etc. *(y/n)*
Other *(text)*

Did you cause injury to your opponent? *(y/n)*

What kind of injury (check all that apply)?

Knife or stab wounds *(y/n)*
Gun shot, bullet wounds *(y/n)*
Broken bones or teeth knocked out *(y/n)*
Internal injuries *(y/n)*
Knocked unconscious *(y/n)*
Bruises, black eye, cuts, scratches, swelling, chipped teeth *(y/n)*
Other *(text)*

What resulted from the injuries?
(1)Opponent died (2)Opponent hospitalized (3)Opponent received other medical attention (4)Opponent received no medical attention (5)Opponent lived, but don't know about medical attention (6)Respondent believes medical attention was necessary (7)Respondent does not know

Other *(text)*

Did you intend to seriously injure the opponent(s)? *(0)No (1)Yes*

If no (to this question: did you attack opponents?)

Why Not? *(1)Opponent(s) left or backed down (2)Opponent(s) had weapons (3)Opponent(s) outnumbered or outsized you (4)Law enforcement intervention prevented it (5)Someone else's intervention prevented it (6)Did not want to hurt anyone (7)Calmed down (8)Situation not what you thought (9)Too much to lose if hurt someone (10)No opportunity (11)Situation didn't arise (12)Fear of Retribution (13)Opponent intimidating for other reasons*

other *(text)*

If you had a gun, would you have attacked *(y/n)*

Did you have a weapon during this incident, other than those already described? *(y/n)*

If yes

What kind of weapon did you have? (mark all that apply)

Handgun *(1)Revolver (2)Derringer or Single-shot (3)Both*
Automatic Handgun *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Shotgun *(1)shot gun (2)Sawed-off (3)Both*
Hunting Rifle *(1)single-shot target or hunting*
Automatic Rifle *(1)Semi-Automatic (2)Fully-Automatic (3)Both*
Knife *(y/n)*
Bottle/glass *(y/n)*
Other sharp object (scissors, ice pick, axe, etc.) *(text)*
Blunt object (rock, club, blackjack, etc.) *(text)*
Other *(text)*

How did you get the weapon? *(1)Bring the weapon into the situation (2)Leave the scene to obtain the weapon (3)Obtain the weapon from a third party (4)Use weapon belonging to opponent (5)Transform an object present in situation to weapon*

Other *(text)*

If 1

Did you have a weapon because: *(1)Matter of everyday routine (2)Carried weapon due to nature of situation (for protection) (3)Assumed it would be needed if you confronted the opponent*
Other *(text)*

Would you have gone into this situation without a gun *(0)No (1)Yes (2)Yes, with some other type of weapon*

Did explicit threats precede the physical attack? *(y/n)*

If yes

Who made the first threat of physical attack? *(1)Respondent (2)Someone with respondent (3)An opponent (4)Someone with opponent*
Other *(text)*

Did the threat involve a weapon? *(0)No (1)Same weapon used in attack (2)Other weapon*

If 2

Type of weapon *(0)No (1)Revolver (2)Derringer or single-shot (3)Semi-Automatic Handgun (4)Fully-Automatic Handgun (5)Hunting or target rifle (6)Semi-automatic rifle (7)Fully automatic rifle (8)Shotgun (9)Sawed-off shotgun (10)Knife*

Other sharp object (scissors, ice pick, axe, etc.) *(text)*
Blunt object (rock, club, blackjack, etc.) *(text)*
Other *(text)*

How many people were present at this incident?

With Respondent *(0)0 (1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*
With Opponent(s) *(0)0 (1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*
Bystanders *(0)0 (1)1 (2)2 (3)3 (4)4 (5)5-10 (6)More than 10*

If any present

If others were present, did anyone intervene by actively encouraging violence? *(y/n)*

If yes
Instigated the incident *(y/n)*
Cheered toward violent actions *(y/n)*
Blocked the encounter from outside interference *(y/n)*
Provided weapons *(y/n)*
Physically attacked one of participants *(y/n)*
other *(text)*

Did anyone intervene by actively discouraging violence *(y/n)*

If yes
Mediated
Suggested offense unintentional *(y/n)*
Urged backing down *(y/n)*
Attempted to/physically restrained participants *(y/n)*
Called police or threatened to call police *(y/n)*
other *(text)*

What terminated the violence? *(1)Respondent left scene (2)Opponent(s) left scene (3)Law enforcement intervention (4)Bystander intervention (5)Serious injury or death (6)Law enforcement on the way (7)Fight was over*
other *(text)*

Was this incident related to any other incidents you have already described? *(y/n)*

If yes
Which incident is it linked to?
Offender/Victim 1 to **Offender/Victim 10** *(y/n)*

If you could relive this situation, would you do anything different? *(0)No (1)Avoid setting completely (2)Leave situation before violence occurs (3)Talk out the conflict (4)Apologize for actions (5)Ignore offensive behavior/remarks (6)Hurt someone more or quicker (8)Would avoid offensive behavior/act more appropriately (9)Be more cautious (10)Other*
Other *(text)*

Was there any law enforcement involvement in this incident? How did they become involved? *(0)No (1)Contacted by respondent (2)Contacted by other participant (3)Contacted by bystander (4)Happened on scene (5)Other*

Was anyone arrested or issued a citation? *(0)No (1)Respondent arrested (2)Opponent arrested (3)Both arrested (4)Respondent cited (5)Opponent cited (6)Both cited*

Was there any money or property taken during this incident?

Approximate value: *(#)*

Appendix B

Sample Incident Narratives

A guy owed us money and he wasn't going to pay us and told us to get lost so we went to his house and shot him. Him and his girlfriend both got hit by shot gun pellets. We kicked in the door and he came running toward the door and got shot. this was over a drug deal. one was unconscious and in ICU for awhile but no one died. Several of the homeboys had guns and fired but I was blamed. There were two shot guns and a 22.

I hit a guy cause he owed me $50 bucks he said he had money but he actually didn't so I punched him in the jaw. not a very pretty sight I might add. he was alright he wasn't bleeding just got knocked down I think I hit him a little too hard and knocked some sense into him and he said he'd pay me next week. and he did pay me next week. I almost broke my hand.

A guy pulled in the parking lot, he owed me money for so long and I was mad, so I went and hit him. went up to him and tell him where was my money, he didn't have it, so I got mad at him

I caught this dude that ripped me off on some money and clubbed him over the head with a mag-light, was out in the country at friends house, was a set up deal, one of my friends brought him out there, as soon as he came in the door he seen me and I clubbed him over the head.

She bought me a new I-roc, I was at work and she came and took it, I went home and it wasn't there, I went to a friends house & the car wasn't there, I looked in and she was in there; I said I want my car and she said no I owed her 50 some thousand from since I got out, so I broke the door down, and told her I wanted my car, they were on the phone w/911. I grabbed her and told her she was going to take me to my car, shoved her down to the ground

Didn't have the money, they said I'd have to wait, I said no I ain't waiting for shit, and they started to get mouthy, then we wrestled around and then his girlfriend broke it up said she was going to call the police and I took off. I hit him & he tried to hit me back, that's when started wrestling around

A business partner of mine owed me money - $350 for drugs and couldn't pay me back. I saw him at the mall and went up to him and started talking to him and asked him if he had the money. He said he didn't. I asked him how he could buy clothes from Dillards if he didn't have any money and he punched me. I punched him back. He fell against the railing and sat there. I told him he better get my money. I tried to leave the mall but security stopped me. Security took me to their office and took my picture and banned me from the mall for 3 months.

I fronted this guy 2 pounds of weed and we gave it to him but he didn't give us the

money and he tried to dodge us. A friend of mine who worked at Shopko and saw this guy there and she called us and told us and we went down there and we hit him with a bat and kicked him and I told him not to take something that you can't pay for and we got in the car and left.

I had loaned a friend some money and when I inquired about my money they refused to pay me back. We started arguing about the money and when it became physical it was pushing and shoving. We started wrestling and we were broke up by other friends. The situation was never resolved because I never got my money.

A guy owed me 2500 dollars for drugs and I was in jail and his debt was from July. He didn't want to pay me so after I got out I went to his house to get his money and he didn't have it so punched him and kicked him and then I left.

He had some dope of mine and I tried to reach him to collect my money. he was supposed to sell it. I went o his house and his roommate let me in. I saw Him try to hide and I went there and asked him where my money was. he came up with excuses. he said he fronted it out and would have my money in a few days. I said 'look mutherfucker, you ain't got anything worth taking so let's get this over with'. so I hit him and we got into a fight. he fought back. I beat him and left

He owed me about $600 and he was always doing drugs. he owed my cash for work done and that is what pissed me off because it was hard earned money. I went to collect on several occasions and saw he was under the influence of drugs. I asked how he was supporting his habit if he could not pay me.. he gave many excuses. so I smacked him and took his truck. he handed me the keys. I told him I would not bring it back until tomorrow. I took off and felt bad and took it back about an hour later.

We were playing pool and I ended up winning an he did not want to pay up so I went toward him and I provoked him into swinging first and then I hit him with a pool stick. then I kicked him in the knee and snapped his knee and I left. I was avoiding the police on that

This guy came over to the house and pulled a gun on me and I was drinking and it really made me mad. the cops came over and caught him in front of my house. I went to my homeboys house and was telling them what had happened I calmed down and was drinking and this white dude and this Mexican chick just barged in the house and I said who invited these guys? no one knew and I was just sitting there and my cousin said I have some coke and do you want to buy some and my cousin said let me see your money. he pulled out his wallet with a big wad of money and my cousin said look at that money and he put the wallet away. I wasn't thinking about robbing the dude then and we kept drinking and talking. he brought a 12 pack and he grabbed our beer and his when they

went to leave and he said that he thought they brought two and the girl said I told you we shouldn't come here. he threw the beer at me and Christine and his girl were fighting and I jumped up and started to fight him. I was fighting him and then my cousins and brothers jumped up and started hitting him with pipes and stuff. I made everyone stopped and I drug him out and was going to put him in the garbage but he was too big. I went back in and Christine was out front and the cops were there and they took Christine to jail. my cousin took the wallet and we split up the money and the cops couldn't come in. we took off walking toward our house.

Dude hit my car and I asked him if he had insurance. I asked if he was going to pay me cash. he aid no and then he got smart. I said it was his fault. I told him he was gonna give me money. I kicked his ass and my boy hit him with a brick. then my boy grabbed the other dude out of the truck. then we started their truck and sent it rolling down the hill and smashed into a wall.

It had to do with some stolen clothes, I had drove into town to find him (my brother)and I drove by my girlfriend's parents house. he and my girlfriend sister were driving off on his motorcycle, I barricaded him in on the street with my car. I told him I was missing some clothes and he said he did not know anything about it and I took a swing at him and I hit his motorcycle helmet and I hit it with my hands and it almost knocked him off the cycle. he told kimmy to call the cops. she spit on me and called me an ass and took her helmet and swung it at me. I blocked with a cast on my left arm. she hit it with her helmet. she left to call the cops so I kicked her in the ass and told her to call the cops. I took off.

I gave him some dope and he was supposed to go sell. I drove him there and waited and he went and came back and said he got ripped off. I did not believe him so I jumped out and leaned in the car and put the knife to his throat and cut him and told him to tell me the truth. my wife told me people were watching. I told him to get the money or I would kill him. I drug him out of the car and we took off.

One of the little homies had taken some drugs from me and hadn't given me any money. I confronted him and told him he had to give me something to make up for that. I hit him

That was over a pool game. there was like 4 people in the bar. he said something happened during the game that wasn't valid and he tried to leave. then I hit him in his knee with the pool cue. I stepped over him and said the bet's valid now. he ended up paying me and that ended the fight.

Me and my friend got into to it over some money. He felt he didn't owe me any money. I gave him some money he was supposed to pay me back in payments. he

thought that he had paid up, but he wasn't paid up and he wasn't going to pay up. We were arguing out on the street. so we both had our say. We starting hitting and kicking each other. People broke the fight up. He ended up paying me.

This argument involved money. Me and friend got into an argument about money. You had loaned him some money and he agreed to pay it back in payments. He thought that he had you back, but he hadn't. So you got into this argument and started fighting about it. He got mad and hit me first. Then I hit him back. This happened on the street. It was cold outside and so after fighting so long we stopped due to the cold weather. It just got too cold to fight. After the fight we went our separate ways and he never paid me back.

I go to collect drug money from somebody and they start a confrontation because they didn't want to pay or I would get in their face because it was taking too long to pay and if we got into an argument about it I would hit them. I took people with me to collect the money they got involved sometimes. a guard would be coming so we would break up the fight.

A friend had owed me some money and kept putting me off so I just hit him. I asked him for the money before I hit him. he was being mouthy and just kept giving me the run around.

This was over the orange bowl on a big bet. I bet on the Nebraska game and he bet on the other team and we stomped them and he didn't want tot pay the 800 dollars we bet and I said you better pay up boy and the guy said no it was a bogus bet you guys cheated and I said you are gonna pay and I popped him one time and he was knocked out. he came too and I said you want anymore and he said no here's your money.

I got a phone call from his ex-girlfriend. he owed me money. he got in an argument with his girl and she calls me. she told me where he was and where he was going. she told me he was walking home and where he lived. we drove over there and caught him on the block of his house. 5 of us pulled up as well as 2 other cars with about 6 people. only about 5 of us got out and I ran at him with a knife and a pipe. I asked him where my $25 was and when he turned to run I hit him on the side of the head with the pipe. my other dude hit him a couple more times. I continue to hit him in the back with the pipe and he got over a fence but I tripped and grabbed his leg and I was hitting him and he got home. I found out later he had to go the hospital.

This was not much of anything. I confronted this dude about a drug rip off and I told he better pay off or I would hurt him. he swung at me and kicked at me and so I knocked him on his ass.

I got into a fight because he bought a quarter pound of marijuana form me and told me he would pay me the next day. I told him to be honest with me or I would be in a bind if he did not pay. he did not so I went to his house and slapped him around a bit and he payed me.

I was up for like a full month and I fell asleep, I was overamped basically. I fell asleep and when I woke up all the dope I had was fucked with. one of the girls who was there said she did not do so I had one of my cousins rough her up and she told me who did it. I went to him and he had a bunch of stuff that he did not have before. he must have taken my stuff and sold it and bought this stuff. we kicked in his door, me and my cousins, then, my cousins are rowdy, my cousin hit him with a bicycle handlebar. we beat him up and there was 2 of his friends there and we roughed them up and then took whatever we wanted from his apartment. we took his play station, living room stuff like his radio, CD's and stuff like that. eh tried to stop us but we beat him up again. one of his friends went to the hospital. we was just gonna beat him up, but the way my cousins are I figure something would get stolen.

Me and my girlfriend went to Grand Island and we were on a date. we went back to central city afterwards and I was good friend with her brother and we saw him. he said her ex was in town driving around and then disappeared. I wanted to go home and see what was going on. the TV was gone and nothing else. that made me mad so we tried to find him. my cousin got out of prison the next day. we picked him up and were cruising around and we saw him. we followed him and then I said we should pull over and wait for them. we couldn't so we caught up to them and they saw us and took off. we chased and lost them and then we went to where he hung out. we did not see Hama and continued to drive. we did find him and they were in this abandoned lot. we all got out. I just asked where the fuck my TV was at. then I hit him with the intention of getting him to get out and fight. he did not do anything so I hit him again. the guy who was driving put the car in reverse and the mirror caught me and I fell and the front tires ended up running over my legs. I was still holding onto the car and I hit him one more time and then I let go because my ankle gave out we got back in the car and went after them. my cousin loaded the gun he had and I told him to put it away. we chased them for a while and then hit the back of their car and they jumped the curb but we could not. we cut around the other way but they ran into the apartments. we ran around the place a while but could not find them my ankle started to hurt real bad so we left and I checked my ankle and it was covered with blood. I had a big scar and my knees were bleeding and shit.

This dude came to me a couple time s day and would get at least a gram. I told him okay and it was okay. he wanted an 8 ball one day and he said he did not have the money. I gave it to him and asked about how long he would be getting the money back to me. he said it would take about an hour or so. the dude never came back and I did not see him for a while. I called my cousin and my cousin said he was waiting on the dude to

come over and buy some shit. it turned out tp be the guy who ripped me off. I told him to keep the dude there and I would be right over. I got there and he was not there. so I waited and when he showed up I grabbed his money. he said I was not going to take his money. as soon as we went outside we started boxing and he hit me in the nose and he hit me a couple of more times. I got pissed and kicked him in the chest and then kneed him. I started pounding on him. my cousin jumped in and started beating him. my cousin went in his car and started breaking shit and taking shit. we told him to get the fuck out. he took off.

This guy had stole some money from me and I asked him for my money back and he told me he didn't have it. I told him he had until the end of the day to get my money back. he didn't have it so when I saw him at the end of the day we fought.

It was just getting light about 6am and I had just came home and this girl had been staying at the house for about a week. she was gone nobody home. I went to the safe to put what I had on me in the safe. she was the only one there who knew it was there. I made a few phone calls and had some partners go pick her up and bring her to me. I was screaming and shouting slapped her around told her id blow her head off if she didn't get me the money and the shit. I pulled the gun out. she made a couple phone calls before she left and got most of the money back for me. I told the kids to go take care of her and they took her and left.

We came home it must have been after the bars closed and it was late. we pulled into the driveway and the lights were on and we had left in the day and they shouldn't have been on. we came in the house and the place was ransacked. we heard something upstairs somebody jumped out the window and we caught him. we beat him. we continued to beat him and then beat him some more drug him back in the house and beat him some more. we beat him really good and then we told him that if he didn't get back all the shit that he took we were gonna kill his family. and we let him go. I got my shit back....3/4 of it anyway.

This guy had stole some money from me and I asked him for my money back and he told me he didn't have it. I told him he had until the end of the day to get my money back. he didn't have it so when I saw him at the end of the day we fought.

I saw a guy that owed me money, I pulled him over in his car, he got out and started talking, telling me the drugs weren't no good, I told him he was full of shit, he said he wasn't going to pay me I said he was he said fuck you and then we were yelling back and forth and then it was a fist fight. he was laying on the ground outside his car so I left.

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