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Another cost of being a young black male: Race, weaponry, and lethal outcomes in assaults

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ABSTRACT

We examine the effect of the race, age, and gender of victims of assault on the offenders' use of weapons and lethal intent. Evidence from the National Incident Based Reporting System (NIBRS) suggests that offenders are particularly likely to use guns against young black men—a three-way interaction – and to kill black males and young black adults. Black offenders respond more strongly to the victim's race than do white offenders. As a result of these effects, a violent incident between two young black men is about six times more likely to involve a gun than a violent incident between two young white men. We suggest that adversary effects, i.e., an offender's tactical response to the threat posed by adversaries, help explain why violence in black communities tends to be much more serious than violence in white communities.

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1. Introduction

Violence refers to a broad range of behavior that includes armed assaults resulting in death and actions that produce little or no injury. While some offenders use weapons and do as much damage as they can, most offenders limit themselves, engaging in only minor violence. We argue that it is important to consider variation in the severity of violence when one attempts to understand group differences. There may be considerable variation across communities in violence involving weapons, serious injury, and death, but not much variation in the number of fist fights or shoving incidents. It is, therefore, important to examine the quality as well as the quantity of violence (Baumer et al., 2003).

Cross-nationally, for example, homicide rates are higher in the United States than in European countries, but rates of physical assault are not (Van Dijk, 2008). In the United States rates of gun assaults are higher among southern whites than northern whites, but rates of unarmed violence are similar (Felson and Pare, 2010a). Finally, race differences in offending and victimization are much stronger for serious violence than minor violence (Bureau of Justice Statistics, 2005; Rennison, 2001). Blacks are much more likely to be victims of gun violence, but only slightly more likely to be victims of unarmed violence (Felson and Pare, 2010a). Among youth, race differences in offending are stronger for armed violence than unarmed violence (Felson et al., 2008). Both victimization surveys and official data show race differences in offending, while self-report studies often do not, because the former include more serious acts of violence (Hindelang et al., 1979). These comparisons suggest that it is important to examine group variation in the seriousness of violence as well its frequency.

In this research we address the question of why violent incidents involving black victims and offenders are much more likely to involve weapons than violent incidents involving white victims and offenders and why their assaults are more likely to become homicides. We focus on “adversary effects,” i.e., the threat posed by the person or persons with whom an individual is in conflict (Felson and Pare, 2010a). To study adversary effects we examine the effects of the victim's race,

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gender, and age on the type of weapon the offender uses, and whether the offender kills or seriously injures the victim. We also examine whether offenders treat young black males differently than other groups, and whether black and white offenders respond differently to black victims. We argue that because of adversary effects violence involving blacks tends to be much more serious than violence involving whites.

We begin by discussing adversary effects and their importance for understanding weapon use and lethal intent in violent incidents. We then discuss why the offender might respond to the race, age, and gender of the victim, focusing on the role of stereotypes.

2. Adversary effects

Violent crime is different from other crime in that it usually involves face to face interaction between adversaries and a much greater risk of bodily harm. As a result, individuals contemplating aggression are likely to pay close attention to the threat posed by their adversaries. The threat posed by adversaries is likely to be particularly strong in communities where people are more likely to be quick to retaliate and where they are more likely to use weapons in their altercations. The risk of serious injury or death during a violent confrontation is likely to be much greater in these communities.

Anderson (1999) emphasizes adversary effects in his discussion of the code of the streets in impoverished African-American neighborhoods. The code encourages young people in these communities to adopt an aggressive posture to avoid victimization and to respond with aggression when confronted. Even youth who are not otherwise prone to use violence follow the code of the streets. Their behavior is adaptive and tactical, a consequence of their spatial proximity to potentially dangerous adversaries. They are responding to circumstances, not internalized attitudes toward violence stemming from membership in a violent subculture.

To address the threat in African-American communities, some residents may carry weapons for protection (e.g., Nielsen et al., 2005). Thus, evidence suggests that blacks are generally more likely to carry guns and knives than whites (Felson and Pare, 2010b). Aggressive postures and weapon carrying have important consequences although, according to game theory, those consequences are difficult to predict. Sometimes an aggressive stance and weapons deter adversaries from becoming aggressive and inhibit violence, as suggested by the work of Anderson (1999) (see also Kleck, 1997; Lott, 2000). At other times, toughness elicits toughness and escalation and weapons produce arms races (e.g., Deutsch and Krauss, 1960; McCarty and Meierowitz, 2007; Myerson, 1997; Stewart et al., 2006). They result in *social contagion*, where increases in violence or weapon use are observed across time and space. Thus, an arms race may have developed in African-American neighborhoods where individuals carry guns to protect themselves from others who are also armed (see Blumstein, 1995).¹ At least one study suggests that gun violence tends to spread. Griffiths and Chavez (2004) found a diffusion of gun homicides from the most violent neighborhoods to adjacent neighborhoods in Chicago. This diffusion was not observed for homicides that involved other weapons or no weapons.

Felson and Pare (2010a) offer a middle position regarding the consequences of firearms. They suggest that the presence of firearms is likely to have different effects on armed aggression and unarmed aggression. While large numbers of guns lead to more gun violence, they deter less serious forms of aggressive behavior. Exchanges of insults, shoving matches, and fist fights become too dangerous when many people have firearms. In addition, the presence of firearms may deter violence with less lethal weapons: “don’t bring a knife to a gun fight.” As a result, the spread of firearms may make violence more deadly in a community but not necessarily increase its frequency. When assaults occur, they may be more likely to involve firearms.

At least two studies suggest that offenders are more likely to use guns when they commit violent offenses against black victims, regardless of their own race (Felson and Messner, 1996; Felson and Pare, 2010a; but see Baumer et al., 2003). As a result, gun assault victimization rates are *much* higher for blacks than for whites (see also, Rennison, 2001). At the same time data from the National Crime Victimization Survey (NCVS) shows that blacks are less likely than whites to be victims of unarmed assault and they are at no greater risk of knife assaults (Felson and Pare, 2010a). It is surprising that blacks, who often live in segregated neighborhoods with higher rates of violent crime, report lower rates of unarmed assault victimization, the most common type of assault. Perhaps offenders consider it too dangerous to assault blacks without a weapon.

Fear of blacks has another consequence, according to Felson and Messner (1996). They argue that offenders are more likely to have lethal intent when they expect their victims to be armed and willing to retaliate. By killing the victim offenders secure their personal safety since the victim is permanently incapacitated. In other words, in communities where the consequences of violence are severe, adversaries are more likely to have the philosophy of “kill or be killed.” To examine this hypothesis they merged assault data from the NCVS and homicide data from the Supplemental Homicide Reports (SHR). The comparison of homicide and assault revealed that offenders were more likely to kill black victims than white victims, controlling for the type of weapon they used. The fact that offenders were also more likely to kill male victims than female victims provided further support for the idea that offenders are more likely to kill adversaries they perceive as more dangerous. On the other hand, they did not find that offenders were more likely to seriously injure blacks or males. This pattern supported the argument that it was the offenders’ lethal intent that accounted for the results, and that it was a tactical decision based on fear of their adversary.

The tendency to kill black victims is apparently not observed for all types of violent offenses. Felson and Messner (1996) did not find evidence that the victim’s race affected whether a robbery had a lethal outcome. They suggested that tactical

¹ Violent crime may be more contagious than nonviolent crime because it involves adversary effects as well as the effects of third parties (Felson, 2009).

concerns may not be enough to motivate a robber to kill the victim in the absence of a strong grievance. They also argued that robbery offenders target victims who do not pose a threat in the first place. Tactical decisions regarding target selection are likely not as common in physical assaults because victims are typically someone who has provoked them in some way. If the victim is someone that needs to be killed for tactical reasons it is better not to rob them in the first place.

Prior studies have examined the effect of race in violent incidents using the National Incident Based Reporting System (NIBRS), the data set we will be using. Two studies found that victim's race does not affect whether an aggravated assault has a lethal outcome (Weaver et al., 2004; Libby and Corzine, 2007). Both studies included domestic violence, which made up approximately 50% of the cases. D'Alessio and Stolzenberg (2009) studied a sample of interracial aggravated assaults and found that black offenders were more likely to seriously injure white victims than the reverse. Since they did not include incidents of intra-racial violence they could not disentangle the effects of race of offender from race of victim.

3. Stereotyping

The discussion above implies that offenders confronting African-Americans are more likely to use weapons and have lethal intent because they fear their adversaries are armed and dangerous. This fear may be related to the victim's *reputation*. That is, offenders may have specific information about the threat posed by the particular victim they confront and that threat may be related to race. Offenders may also be acting on the basis of *racial stereotypes*. Experimental research has shown that people are more afraid of black strangers than white strangers (St. John and Heald-Moore, 1995). Also, participants in simulation experiments are more likely to mistakenly believe that a target has a gun if the target is black, and they are more likely to shoot the target (Correll et al., 2002; Greenwald et al., 2003). Finally, researchers have consistently found that identical behaviors are judged as more threatening when performed by a black person than by a white person (Duncan, 1976; Sagar and Schofield, 1980).

Research from the field of behavioral economics suggests that perceptions of risk are often overestimated (e.g., Kahneman and Tversky, 1973). People may exaggerate the threat posed by black adversaries because of prejudice, cultural stereotypes, or media effects (see Quillian and Pager, 2010). Thus some evidence suggests that whites, and to a lesser extent blacks, associate race with crime, and experience greater fear of blacks than is justified by actual race differences in crime rates (Quillian and Pager, 2001). In addition, St. John and Heald-Moore's (1995) study, mentioned above, found that whites are more likely than blacks to be afraid of black strangers. *Prejudice* is implicated if whites are more likely than blacks to perceive blacks as dangerous.

Stereotypes are not necessarily inaccurate, however, or based on prejudice (Lee et al., 1995). Fear and misperception of blacks may involve *statistical discrimination*, i.e., a response to stereotypes based on actual group averages (Phelps, 1972). Knowing nothing about the individual, offenders may use the victim's race as a heuristic to judge risk. Statistical discrimination implies that both black and white offenders consider black victims as more dangerous than white victims. If it is operating both races will be more likely to use weapons against blacks and attempt to kill them.

Perhaps the response of offenders to race depends on the victim's age and gender. Offenders may feel threatened when the victim is a young black male, but not when the victim is a black female or an older black. A number of scholars have suggested that people are most likely to stereotype young black males as dangerous (Anderson, 1990; Dunier, 1992; Gibbs, 1988; Lemelle, 1994; Lyman, 1994). Their perspective implies that "young black male" is a social type that elicits a unique response from other citizens, at least in the United States.

No one has examined empirically how offenders respond to young black males but the issue has been examined in other contexts. St. John and Heald-Moore's (1995) experimental study, described above, found that whites were more afraid of younger blacks than older blacks, but did not find evidence that respondents were particularly afraid of young black males. It may be, however, that they did not have the statistical power to demonstrate a three way interaction. Quillian and Pager (2001) found that the percentage of young black males in an area is associated with increases in fear of crime, controlling for actual levels of crime. However, they did not test for a three-way interaction because they did not control for the additive effects and the lower level interactions. There have also been a number of studies of the response of the criminal justice system that look at interactions involving race. They reveal some evidence that the criminal justice system treats young black males more harshly, although none of them actually test for three-way interactions (Steffensmeier et al., 1998; Warren et al., 2012; Kramer and Ulmer, 2009). Two way interactions between race and age have been reported in studies of sentence severity and searches of drivers during traffic stops (Steffensmeier et al., 1998; Rosenfeld et al., 2012). Young blacks are particularly likely to be searched by the police and particularly likely to receive severe sentences.

4. Current research

Our analyses are based on homicide and assault data from NIBRS, a large, semi-national data set based on crimes known to the police. We examine the effects of the victim's race, age, and gender on the offender's use of a gun and whether the victim is killed. We interpret weapon use and killing the victim as, *to some extent*, involving tactical decisions and lethal intent. That decision may have been planned or it may have been made on the spur of the moment. Fear may emerge quickly and have an immediate effect on the offender's decisions. We recognize that offenders may have non-tactical motivations for their lethal intent and that some lethal outcomes are not intended.

In our first set of equations we examine the additive effects of the race, gender, and age of victims and offenders on weapon use and level of injury. We examine whether offenders who assault blacks are more likely to use guns and knives (vs. no weapon) than those who assault whites, and whether they are more likely to kill or severely injure the victim. We also examine whether controlling for weapon use reduces the effects of race on injury outcomes. If offenders are more likely to kill black victims it suggests that offenders are more likely to have lethal intent when they confront blacks. This interpretation is strengthened if the effect is stronger for lethal outcomes than non-lethal injuries.

We then examine statistical interactions. We hypothesize that offenders are more likely to use guns against and kill *young black males*—a three-way statistical interaction. These analyses, of course, also involve an examination of two-way interactions. It may be, for example, that guns are more likely to be used against black males regardless of age or young blacks regardless of gender.

As suggested earlier, the effects of the victim's race and other demographic characteristics are not necessarily a consequence of the offender's stereotypes. It may be that offenders are responding to the prior behavior of the individuals they victimize and that behavior is associated with race, age, and gender. For instance, black victims may actually be more likely to fight back in violent incidents. To address this possibility we excluded cases in which the police considered both parties in the incident to be offenders. One can, therefore, assume that in most of these incidents the police determined that the victim either did not use a gun or engage in violence or else did so in self-defense. In addition, even if the victim's behavior affected the type of weapon the offender uses, it may not be related to race or other demographic characteristics. Baumer et al. (2003) found that black victims are no more likely than white victims to engage in either forceful or non-forceful resistance during an assault. In most of our incidents it is unlikely that the offenders' use of a weapon is a response to the victims' violence during the incident. However, even if the victim's violence during the incident had an impact, it is still an adversary effect.

It may also be that an offender is affected by the victim's reputation for violence or weapon use or violent behavior toward the offender prior to the incident. For example, since blacks have higher rates of gun violence than whites, it is more likely that a black victim has a history of gun violence than a white victim. If there are race differences in the victim's reputation or prior behavior, it could affect the offenders' choice of weapon and their lethal intent. We can address this issue in two ways. First we examine whether the effects of race are just as strong for strangers, since reputation and prior behavior should not affect these confrontations. If we observe race effects in assaults involving strangers, it suggests that stereotyping is helping to explain the effects of victims' race. In fact, stereotyping may have a stronger effect when offenders confront strangers since they do not have specific information about the individual. Second, we examine whether the effects of race of offenders mirrors race of victim effects. If, for example, offenders are particularly likely to use guns against young black males because they are particularly likely to be armed, we should find that young black male offenders are more likely to use guns.

We also examine whether the effects of race on injury levels are reduced when we introduce controls for weapon use. This comparison will reveal the extent to which weapon use mediates race effects on injury outcomes. If race affects lethal outcomes, controlling for weapon use, it will provide specific evidence that offenders are more likely to have lethal intent when they assault blacks. This conclusion is strengthened if race affects lethal outcomes but not seriousness of injury. If race effects disappear when weapon use is controlled, it suggests that violence targeting African-Americans has more serious consequences because offenders use weapons or more lethal weapons when they target blacks. This may occur because offenders who use weapons have lethal intent or because weapons produce more lethal outcomes regardless of intent (Cook, 1991).

We shall also examine the effects of the offender's characteristics. Previous research shows that males and older offenders are more likely to use guns but it is mixed as to whether black offenders are more likely than white offenders to use firearms during assaults (Baumer et al., 2003; Felson and Messner, 1996; Felson and Pare, 2010a). Note that the main effects of the offender's race can be interpreted in a variety of ways. Blacks may be more likely to carry and use weapons because of their contact with other blacks who they view as more dangerous than whites. Alternatively, it may reflect the importance of honor or some other cultural difference. Finally, the common knowledge assumption of game theory implies that offenders anticipate how their behavior and characteristics are likely to affect the tactical behavior of their victims (Aumann, 1976). Black offenders may be more likely to think that their victims expect them to be armed, and that victims will arm themselves in response. Black offenders may then arm themselves in anticipation of victims arming themselves, resulting in a self-fulfilling prophecy.

We are particularly interested in whether black and white offenders behave differently toward black victims. Race of the victim may have only main effects if both blacks and whites anticipate greater threat when they confront blacks. Such a pattern is consistent with the process of statistical discrimination, i.e., responding to stereotypes based on actual group differences. Research suggests that individuals often hold similar stereotypes of their own group that outsiders do (e.g., Sagar and Schofield, 1980). Alternatively, we may find that white offenders are more likely than black offenders to use guns against and kill blacks. This statistical interaction would occur if whites are more likely than blacks to stereotype blacks. Prejudice or irrational fear may lead whites to arm themselves when they attack blacks and finish them off if they can.

In sum, we examine additive effects and statistical interactions involving the race, age, and gender of victims. We hypothesize that offenders are more likely to use guns against and kill black victims, particularly young black males. We also examine whether the aggressive reaction toward black adversaries reflects the reputations of individual victims, stereotyping, statistical discrimination, or prejudice. *Stereotyping* is suggested if we find that offenders respond just as strongly to the victims' race when they do not know them. Offenders are responding to stereotypes related to group membership rather than

individual reputation. Stereotyping is also suggested if the effects of the victim's demographic characteristics are stronger than the effect of the offender's characteristics. Their perceptions do not reflect the reality of group differences in behavior. Finally, *statistical discrimination* is suggested if black and white offenders have similar responses to the victim's race while *prejudice* is suggested if whites are more likely than blacks to use guns against and kill blacks.

5. Data and methods

The current study is based on 4 years (2005–2008) of data from the National Incident-Based Reporting System (NIBRS) (for reviews see [Addington, 2010](#) and [Akiyama and Nolan, 1999](#)). Once a state becomes NIBRS-certified, individual police agencies report detailed incident level information on crimes reported to the police to the Federal Bureau of Investigation. At the beginning of 2008, 31 states were certified to submit NIBRS data to the FBI. In addition, three other states and the District of Columbia have individual agencies which contribute NIBRS data ([JRSA, 2012](#)). The police agencies which submit data to NIBRS cover approximately 26% of the US population.

NIBRS is well suited for the current study. First, it provides information on victim and offender demographics, victim-offender relationship, weapon use, and injury severity. This information is necessary for examining how offender and victim characteristic's influence weapon use and lethal intent.² Second, NIBRS allows us to identify the police agency that covers the jurisdiction where the crime occurred. This allows us to link crime incidents to Census data and to control for contextual variables that might be related to weapon use and lethal intent. Third, NIBRS provides a huge sample that gives us the statistical power to examine three-way interactions.

NIBRS has limitations, of course. First, NIBRS covers only a portion of the United States and over-represents law enforcement agencies that cover smaller population areas. Second, as with all official sources of crime data, NIBRS only includes incidents reported to and recorded by law enforcement agencies. According to the National Crime Victimization Survey, approximately 38% of simple assaults and 55% of aggravated assaults are reported to the police ([Hart and Rennison, 2003](#)). Homicides are more reliably recorded ([O'Brien 1999](#)), although data on offender characteristics is missing for some cases. We consider the implications of underreporting for our analysis in the discussion section.

Our analysis is limited to homicides and assaults (simple and aggravated) that did not involve other offenses. We did not include incidents involving robbery and rape because their interpersonal dynamics are usually different. [Felson and Messner \(1996\)](#) found no effects of victim's race in robbery incidents. They argued that robbers can select weak victims from groups they view as more dangerous. "(T)actical decisions prior to the robbery remove the need for tactical decisions during the robbery" (p. 541). In pure assaults, offenders typically have not selected the victim based on vulnerability; their victims are usually people with whom they have a dispute.

We also eliminated incidents involving: (1) multiple victims or offenders to simplify the coding of offenders' and victims' demographic characteristics; (2) incidents involving children under 12; and (3) domestic violence because it is difficult to distinguish effects of race of offender and victim when family members are typically of the same race. In addition, we thought that offenders were unlikely to stereotype family members since they know them so well as individuals. Indeed, we did not observe effects of race of victim in analyses of domestic violence incidents (not presented).

5.1. Measurement

Two dependent variables were used in the analysis: weaponry and injury level. Categories for weaponry include firearm, knife, other weapon, and no weapon (the reference category). For incidents where offenders used multiple weapons (<1% of the cases) we coded the most lethal weapon (firearm > knife > other). Incidents in which data on weapon type was missing were excluded from the analysis (3.56% of cases). Note that some offenders only used weapons to threaten victims. Injury level included death, serious injury, minor injury and no injury (the reference category). Serious injuries include apparent broken bone(s), possible internal injury, severe laceration, unconsciousness, loss of teeth, and other severe injuries.

Our key independent variables are the race, gender, and age, of the offenders and victims. Incidents with missing data on the victim or offender's race (victim = 3.51%; offender = 15.17%) or gender (victim = 1.39%; offender = 12.73%) were excluded from the analysis. We also excluded cases involving Asians or American Indians because they were involved in only 2.15% of the incidents and because our interest was in comparing blacks and whites. Note that NIBRS does not record the ethnicity of the offender. Age was coded into four categories: juveniles (12–17); young adults (18–30); older adults (31 and older); and age missing, where older adults are the reference category. We used a missing data category for offender's age because it had a considerable amount of missing data (offender = 19.17%; victim = 3.09%).

Our equations included controls for victim-offender relationship, region, urban residence, and an index of community disadvantage. Victim-offender relationship is coded as stranger, known offender (reference category), or as missing data. Region was coded as West, South, North, and Midwest (the reference category) based on Census definitions. Research has shown

² Before NIBRS, researchers were forced to study the correlates of lethal intent by merging NCVS self-reported assault data and Supplemental Homicide Reports official data on homicides ([Felson and Messner, 1996](#)). The use of merged data could be problematic if incidents reported on victimization surveys are different from incidents reported to the police.

Table 1
Descriptive statistics ($N = 618,731$).

	Percent		Percent
Weapon type		Offender characteristics	
Gun	4.98	Black	46.18
Knife	5.09	Male	73.74
Other weapon	11.86	Age	
No weapon	78.06	Juvenile (12–17)	17.68
Injury level		Young adult (18–30)	39.38
Death	0.36	Older adult (31 and above)	36.18
Serious	6.71	Missing	6.76
Minor	47.37	Victim offender relationship	
No injury	45.56	Stranger	15.69
Victim characteristics		Acquaintance	68.39
Black	36.83	Missing	15.92
Male	53.31	Region	
Age		South	40.5
Juvenile (12–17)	18.35	West	8.88
Young adult (18–30)	40.13	Midwest	44.4
Older adult (31 and above)	39.87	North	6.22
Missing	1.65	Urban	45.10
		Disadvantage	$X = 0, SD = 1$

that violence tends to be more likely to involve guns in the South and West than in the North, at least among whites. An incident was coded as taking place in an urban location if it occurred in a community with a population over 100,000.

An index of community disadvantage was constructed using census place data from the American Community Survey's 5 year-estimates (2005–2009). The disadvantage index was assigned to each incident based on the jurisdiction in which the incident occurred. Incorporated census places are concentrations of populations that are recognized by state law as towns, cities, or boroughs. They range in size from small towns to large cities. They are smaller and come closer to approximating communities than counties or metropolitan statistical areas (MSAs). Following previous research we based the index on a principal component analysis of the following variables: (1) the percent of households headed by a single female with children; (2) the percent of the population over the age of 25 without a high school degree; (3) the percent of the population with income below the poverty level; and (4) the percent of the population who are in the labor market but unemployed.

5.2. Analytic strategy

We estimated our equations using a multinomial logit model via hierarchical linear models (Raudenbush and Bryk, 2002). Multi-level models allow us to control for contextual factors that may be associated with both our independent and dependent variables and to address issues of dependence that might arise because incidents that occur in the same census place are likely to be more similar to one another than incidents that occur in different census places. All independent variables were grand mean centered, so that the mean of each variable was zero across all cases. Centering reduces the collinearity that naturally arises when examining statistical interactions (Jaccard and Turrisi, 2003).³

6. Results

In Table 1 we present the descriptive statistics. The results show that most incidents are minor: about 5% involve a gun and less than 8% result in death or serious injury. Blacks make up 46% of offenders and 37% of victims. About 75% of the offenders and half of the victims in these non-domestic incidents are male. Approximately 40% of offenders and victims are young adults.

6.1. Additive effects on weapon use

In Table 2 we present additive models for determinants of weapon use and injury level. To simplify the table, we do not present the results for use of other weapons and minor injury or the effects of the variables representing missing data codes. Note that the results for assaults that ended in minor injury were quite similar to those that involved no injury.⁴ Given the sample size, nearly all of the coefficients are statistically significant. Therefore, we focus on the strength of the coefficients and

³ We found no evidence of collinearity: all variance inflation factors (VIF's) were below 1.89 in our additive models and below 2.51 in models that included interactions (Allison 1999).

⁴ The only exception was a statistical interaction between race of offender and race of victim. Incidents involving two blacks were more likely to produce a minor injury (vs. no injury) than incidents involving other racial combinations. This is consistent with what we find for serious injury.

Table 2
Additive model of determinants of weapon use and injury level (N = 618,731).^a

	Weapon use		Injury level		Injury level	
	Gun	Knife	Death	Serious injury	Death	Serious injury
Victim characteristics						
Black	0.98	0.69	0.81	0.22	0.21	0.03*
Male	1.21	1.22	2.09	1.36	1.25	1.06
Juvenile	-0.42	-0.52	-0.98	-0.22	-0.80	-0.04
Young adult	0.23	0.03	0.10	0.15	-0.15	0.16
Offender characteristics						
Black	0.50	0.14	0.53	0.24	0.23	0.24
Male	1.26	-0.40	1.23	0.18	0.81	0.34
Juvenile	-0.27	-0.52	-0.65	-0.19	-0.47	-0.04*
Young Adult	0.42	-0.25	0.43	0.31	0.20	0.39
Stranger	0.48	-0.04	-0.32	-0.13	-0.44	-0.15
Region						
South	0.82	0.37	0.09*	0.10*	-0.15*	-0.04*
West	0.62	0.46	0.63	0.65	0.23*	0.50
North	0.16*	0.66	0.41	0.24	0.12*	-0.05*
Urban	0.66	0.38	0.58*	-0.02*	0.2	-0.19
Disadvantage index	0.05	0.03	0.03	* 0.02	-0.03*	0.01*
Weapon use						
Gun	-	-	-	-	4.16	0.88
Knife	-	-	-	-	3.62	2.44

^a Logistic regression coefficients are displayed from a multinomial logistic regression model via HLM. No weapon and no injury are the reference categories for the dependent variables. White, female, older adult, acquaintance, Midwest are the reference categories for the independent variables. Equation also includes dummy variables for missing age, missing relationships, and other weapons.

* Coefficients are not statistically significant at $p \leq .05$.

only identify coefficients that are not statistically significant in the table. The coefficients that we emphasize and treat as real effects are highly significant.

The effects of victim characteristics in Table 2 for weapon use support our hypothesis about adversary effects. The effects of the victim's race are substantial. Offenders are more likely to use guns and knives when the victim is black than when the victim is white. For example, the odds that an offender uses a gun (vs. no weapon) are 166% higher (odds ratio = $\exp .98 = 2.66$) when the victim is black. We also observe effects of the victim's gender and age. Offenders are much more likely to use weapons against male victims. For example, the odds that an offender uses a gun (vs. no weapon) are 235% higher (odds ratio = $\exp .1.21 = 3.35$) when the victim is male. In addition, offenders are less likely to use weapons against juveniles than against adults. On the other hand, there is only a weak tendency for offenders to use guns against young adults (vs. older adults).

The offender's race, gender, and age also have effects. Black offenders are more likely than white offenders to use guns. It is interesting to note that this effect is weaker than the effect of the victim's race. This suggests that offenders have stereotypes that lead them to overreact to victim characteristics. Male offenders are more likely than female offenders to use guns but less likely to use knives. Young adult offenders are more likely than older adults to use guns but less likely to use knives. Finally, we observe some effects of the broader social context. Offenders who live in disadvantaged communities and urban areas are more likely to use guns, and to a lesser extent, knives.^{5,6} Offenders are more likely to use guns, and to a lesser extent, knives, in the South and West than in the Midwest.⁷

6.2. Additive effects on level of injury

In the remaining columns of Table 2 we present the results for level of injury, with and without controls for weapon use. The evidence shows that blacks are much more likely than whites to be killed (vs. no injury). The odds that the incident results in death are 124% higher (odds ratio = $\exp .81 = 2.24$) when the victim is black. The mediation analysis reveals that most of this effect results from offenders using weapons against blacks. Weapons, particularly guns, are extremely strong predictors of death and serious injury, and when weapon use is controlled, the effect of victim's race is fairly weak. The effect of victim's race on serious injury is also weak and it is completely mediated by weapon use.

When controlling for weapon use the effect of race of victim on lethal outcomes are no stronger than the effect of race of offender. We therefore cannot attribute the tendency to kill blacks to stereotyping. Black offenders are more likely to kill

⁵ In analyses not presented we substituted a measure of percent black for our disadvantage index in the additive model. Percent black was not significantly related to gun use or injury and was only slightly related to knife use ($b = -.004$).

⁶ It could be argued that the involvement of blacks in the drug trade is related to their use of guns. However, less than 1% (.06) of aggravated assaults and homicides were reported as involving a dispute over drugs. This information was not available for simple assaults.

⁷ We did not find evidence that southern whites were particularly likely to use guns, as reported by Felson and Pare (2010a).

their victims, in large part, because of their tendency to use guns. Blacks are also slightly more likely to seriously injure their victims, controlling for weapon use.

We also observe adversary effects when we examine other victim characteristics. Offenders are much more likely to kill and seriously injure male victims than female victims. For example, the odds that the offender kills the victim are 708% higher (odds ratio = $\exp 2.09 = 8.08$) when the victim is a male. These effects are reduced but still substantial when weapon use is controlled. In addition, the effects on serious injury are much weaker (although still substantial) suggesting that offenders are more likely to have lethal intent when they confront males. Finally, we find that juveniles are much less likely to be killed. Most of this effect remains when weapon use is controlled.

We also find that offenders are more likely to kill people they know (vs. strangers). The tendency for offenders to kill people they know may represent another type of adversary effect (see Felson and Messner, 1996). Killing the witness is an attempt to avoid the victim's use of the criminal justice system to punish the offender. The fact that offenders are only slightly more likely to seriously injure people they know is further evidence that they are killing someone who can identify them.

The offender's gender and age also have effects. Male offenders and young adult offenders are more likely than their counterparts to kill their victims. The effects are, in large part, due to their tendency to use guns. Juveniles are less likely than adults to kill their victims, in part, because they are less likely to use guns. We also see evidence that males and young adults are slightly more likely than their counterparts to seriously injure their victims.

Incidents occurring in the western and northern regions are more likely than incidents in the Midwest to result in death and serious injury. Weapon use mediates some of the regional differences. Incidents occurring in the South are no more likely to result in death and serious injury than incidents in the Midwest even though they are much more likely to involve guns. Finally, incidents occurring in urban areas are more likely to result in death largely because of the use of weapons.

6.3. Statistical interactions involving weapon use

In Table 3 we examine statistical interactions. The results in the first column show that offenders are particularly likely to use guns against black males ($b = .66$) and young black men ($b = .67$). The tendency to use guns against black victims does not depend on whether the offender and victim know each other. That is, we do not see evidence of an interaction between race of victim and the victim-offender relationship. The fact that offenders are responding just as strongly to the race of strangers as to the race of people they know is consistent with the idea that offenders are stereotyping. However, the effects are no stronger when the victim is a stranger. One could argue that stereotyping should be stronger when offenders confront strangers since they do not have specific information about the individual.

We find no support for the idea that the response to black victims reflects white prejudice. We observe a statistical interaction between the race of the offender and the race of the victim, but it is in the opposite direction: black offenders are more likely than white offenders to use guns against black victims. It is unclear why blacks respond more strongly to race but the fact that whites do not respond more strongly than blacks points to statistical discrimination rather than prejudice.

Table 3
Determinants of weapon use and injury level, including interaction effects ($N = 618,731$).^a

	Weapon use		Injury level		Injury level	
	Gun	Knife	Death	Serious Injury	Death	Serious Injury
Victim characteristics						
Black	0.74	0.69	0.11*	-0.01*	-0.20	-0.19
Male	0.87	1.27	1.76	1.32	1.15	1.03
Juvenile	-0.40	-0.54	-0.98	-0.28	-0.81	-0.10
Young Adult	0.07	-0.00	-0.51	0.05	-0.48	0.09
Offender characteristics						
Black	0.51	0.16	0.59	0.35	0.29	0.35
Male	1.35	-0.41	1.36	0.24	0.97	0.43
Juvenile	-0.28	-0.54	-0.68	-0.23	-0.51	-0.08
Young adult	0.44	-0.24	0.45	0.30	0.21	0.39
Stranger	0.47	-0.05	-0.37	-0.13	-0.48	-0.15
Black victim by						
Male victim	0.66	0.02*	1.09	0.27	0.68	0.28
Young adult victim	0.30	0.02*	0.70	-0.03*	0.37	-0.07
Young adult male victim	0.67	0.24	-	-	-	-
Black offender	0.31	0.14	0.76	0.75	0.44	0.76
Stranger	0.04*	0.10	0.33	0.33	0.30	0.33
Other interactions						
Young male victim	0.60	0.38	1.21	0.46	0.73	0.39
Male on male	0.46	0.48	0.28*	1.40	-0.04*	1.42
Weapon use						
Gun	-	-	-	-	4.09	0.78
Knife	-	-	-	-	3.63	2.43

^a Logistic regression coefficients are displayed from a multinomial logistic regression model via HLM; see Table 2 for additional information.

* Coefficients are not statistically significant at $p \leq .05$.

Table 4
Predicted probabilities of type of weapon for different racial combinations (young adult males only).

Weapon	Black offender		White offender	
	Black victim	White victim	Black victim	White victim
Gun	0.29	0.08	0.15	0.05
Knife	0.10	0.07	0.10	0.06
No weapon	0.49	0.74	0.60	0.77

^aRegion and relationship status held at their means.

To further explore the interactions and to give a better idea of the pattern and strength of race differences in gun use we computed predicted probabilities of gun use for incidents involving two young males (ages 18–30) in different victim-offender racial dyads (Table 4). If we compare incidents involving two blacks to incidents involving two whites, we can get an idea of the difference in the nature of violence between black and white communities. This comparison reveals that guns are used in almost 30% of incidents involving young black men and in only about 5% of incidents involving young white men. It is remarkable that gun use in incidents involving young black males is so high, and that it is nearly six times higher than gun use among young white males. The difference is due to the effects of both the victim's race—the adversary effect – and the offender's race. The adversary effect is much stronger, however. The table shows, for example, that a black offender is 3.7 times more likely to use a gun if the victim is black than if the victim is white. A black offender is 1.6 times more likely than a white offender to use a gun against a white victim.

The results in the second column of Table 3 show a weak three-way interaction: offenders are more likely to use knives against young black males ($b = .24$). The tendency to use weapons when confronting young black males does not just apply to firearms. Finally, we observe two statistical interactions involving the effects of gender. First, offenders who assault young male victims are particularly likely to use guns and knives. These effects are consistent with the idea of adversary effects. Second, incidents involving two males are particularly likely to involve guns and knives.

6.4. Statistical interactions involving level of injury

In the remaining columns of Table 3 we present the results for level of injury, with and without controls for weapon use. For the injury level outcome, we were unable to test for a three-way interaction because the cell sizes for homicide are too small for some of the race-age-gender groupings. For example, there were only three white juvenile female homicide victims in our dataset. We did, however, find support for adversary effects when we examined two-way interactions. Offenders are particularly likely to kill black males ($b = 1.09$) and young (adult) blacks ($b = .70$). These interaction effects are reduced somewhat when weapons are included in the equation. At the same time, these interactions are either weaker or unassociated with serious injury. The results suggest that offenders are particularly likely to kill black males and young blacks because they are more likely to use guns and because they are more likely to have lethal intent.

We also observe statistical interactions between the race of offender and victim. They show that black offenders are more likely than white offenders to kill ($b = .76$) and seriously injure black victims ($b = .75$). The pattern is more consistent with an explanation in terms of statistical discrimination than prejudice. The mediation analysis suggests that the tendency to kill is due in part to the use of guns. To show the strength of race differences in the likelihood of a lethal outcome we calculated predicted probabilities for incidents involving two young men and the use of a gun. The results show, for example, that gun incidents involving blacks are 1.73 times more likely to result in death than gun incidents involving whites (.057 vs. .033).

We also see evidence of race by relationship status interactions: the tendency to kill and seriously injure blacks is stronger if the victim is a stranger ($b = .33$). The pattern is consistent with the idea that offender's strong reaction is based on stereotyping rather than individual reputation. Offenders may respond with more serious violence against black strangers than black acquaintances because they do not have specific information on the victim and instead rely on stereotypes of blacks as dangerous. The effects on injury and lethal outcomes are similar, suggesting that lethal intent may not be a factor.

Finally, we observe some interactions not involving race. First, offenders show a tendency to kill and injure young males that is partially explained by the offender's use of weapons against them. The effect is stronger for lethal outcomes than for injury, suggesting that lethal intent is involved. Second, we observe a strong tendency for males to seriously injure other males.

6.5. Statistical interactions involving race of offender

If the offender's response to young black males reflects an accurate assessment of the risk posed by young black males, we should observe statistical interactions involving the race of the offender as well. For example, young black male offenders should be particularly likely to use guns, and black males and young blacks should be particularly likely to kill their victims. We did not observe evidence for these interactions (analyses not presented), suggesting that offenders exaggerate the danger posed by young black males (in combination). For gun use, we observed a couple of two-way interactions, but one was in the opposite direction. Specifically, the coefficient for young black offenders was positive ($b = .43$) and the coefficient for black males was negative ($b = -.27$).

7. Discussion

We suggested that offenders are attuned to the characteristics of their adversaries because they face substantial risks. Their concern may even lead them to consider how their own characteristics impact their adversary, according to game theory. The threat of adversaries may deter people from engaging assaults or from assaulting someone without a weapon. Our analysis, however, focuses on situations where deterrence has failed, and an assault has occurred. We argue that the threat posed by adversaries is likely to lead to more serious incidents. When offenders think their victims are dangerous or threatening, they are more likely to use lethal weapons. When they expect their adversaries to be armed, they arm themselves, and they choose weapons that are adequate to the task. If they believe their adversaries pose an existential threat, they are more likely to have lethal intent—to think that it is “kill or be killed.” However, the use of guns and knives increases the likelihood of a lethal outcome regardless of the offender's intent.

We find strong support for the idea that the race, gender, and age of adversaries affect the violent behavior of offenders. Offenders are much more likely to use firearms, and to a lesser extent knives, when they confront blacks, particularly young black men. As a result they are more likely to kill black males and young adult blacks. The adversary effect on lethal outcomes, however, is still apparent when weapon use is controlled. This pattern suggests that offenders are more likely to “finish off” black male victims and young black victims. We argued that their lethal intent reflects their attempt to protect themselves. The effects of race, gender, and age on serious injury tend to be much weaker providing further evidence that lethal intent is involved. This pattern is inconsistent with the idea that males and young blacks are more likely to be killed because their behavior provokes greater anger. Note also that lethal intent may be involved in incidents involving serious injury since victims sometimes survive homicide attempts.

We also see strong evidence for adversary effects when we look at the additive effects of gender and age. Offenders are much more likely to use weapons against and kill male victims. When they confront juveniles (vs. adults) they are less likely to use weapons and commit homicide, possibly because juveniles are less likely to be armed with guns. Weapon use mediates some of the effects of gender and age on homicide, but substantial effects are still observed when weapon use is controlled. These results suggest that offenders are much more likely to have lethal intent when they assault males and adults. Note that gender effects may reflect the offender's reluctance to seriously harm or kill women rather than tactical considerations (e.g., Felson, 2002). Perhaps both processes are at play.

The adversary effects of race are difficult to explain without a consideration of tactical concerns. We are not, however, able to show the exact process or processes that explain the adversary effects. It is possible that offenders are responding to the victim's behavior during the event, although we excluded cases in which the police considered the victim an offender as well, and although evidence indicates that blacks are no more likely to engage in resistance during violent crime than whites (Baumer et al., 2003). Future research should examine the role of victim's behavior during the incident.

We attempted to determine whether offenders were stereotyping or responding to an individual victim's reputation. Evidence suggested that stereotyping played a role. First, offenders were particularly likely to kill or seriously injure black victims when they were strangers. We suggested that offenders are more likely to rely on stereotypes when they do not know the victim. Second, we found that the additive and interactive effects of race of victim are generally stronger than the effects of race of offender. For example, young black male victims are more likely to be assaulted with guns, but young black male offenders are not particularly likely to use guns. This pattern suggests that stereotypes are leading offenders to overreact to the victim's race, age and gender.

We also attempted to determine whether the stereotyping of black victims reflected statistical discrimination or racial prejudice. We found that blacks are more, not less likely than whites to react to the victim's race. The pattern is more easily explained in terms of statistical discrimination than the offender's racial prejudice. Offenders are responding based on their beliefs about actual group differences. It may be, however, that offenders exaggerate group differences because of some cognitive bias.

We found that black on black incidents are more likely than other racial combinations to involve guns, death, and serious injury. The finding parallels the gender interactions observed: violence between males is more likely to involve weapons and serious injury than violence involving other gender combinations. Apparently violence tends to be more serious when both adversaries are perceived as threatening. The interaction implies some sort of contextual effect, some effect over and above the effects of individual characteristics. It could be due to a cultural effect: e.g., the code of the streets or status competition between black males. It may also be that when both adversaries are black they anticipate more future contact since neighborhoods are racially segregated.

We suspect that more than one process is producing the strong adversary effects we observe. Whatever produces the adversary effects, it seems clear that the process results in dramatic differences between violence in black communities and violence in white communities. In segregated black communities gun violence spreads, resulting in extremely high homicide rates but not necessarily high rates of simple assault. Homicide victimization rates are particularly high among young black men. In contrast, the violence in white communities is more likely to involve limited violence. Young white men get into fist fights, but they are not as likely to use weapons. Fist fights may be common among young males in any community, but gun fights are not.⁸

⁸ In spite of adversary effects most violence, even between young black males, does not involve weapons or lead to death. This is because there are many other variables that inhibit gun use and homicide. Most offenders are limited in the seriousness of the crimes they will commit; this is one of the most prominent patterns of crime (Felson and Osgood, 2008). Presumably, fear of punishment and moral concerns inhibit them. Also, offenders may not own guns or have guns available to them at the time of the offense. Finally, most people, even in the most dangerous communities, do not have a criminal lifestyle.

The spread of gun violence among young black males is consistent with studies showing unique temporal changes in the pattern of gun violence among this group. Two studies have found that the increase in homicides in the late 1980s and early 1990s and the subsequent decline later in the decade were only observed for offenses involving gun violence among young men, particularly young black men (Blumstein et al., 2000; VanEseltine, unpublished). Our results can help explain the increase but not the decline. We can only say that processes involving contagion do not go on forever. At some point, arms races end or level off, either due to exogenous environmental factors (e.g., increased law enforcement; decline in certain drug markets) or some endogenous process (e.g., a ceiling effect).

Finally, our analysis of neighborhood and urban effects are consistent with the idea of adversary effects. Incidents that occur in disadvantaged communities and urban areas were more likely to involve guns, and to a lesser extent, knives. The contextual effect of disadvantage on gun use in assaults is consistent with evidence from earlier research based on the NCVS (Baumer et al., 2003). Because of weapons, assaults in disadvantaged urban communities are more likely to result in death and serious injury. We suspect that adversary effects help explain these spatial patterns.⁹

7.1. Limitations

One obvious limitation of our analyses is that they are based on official data. These data are likely to oversample serious incidents and they may be affected by race, gender, or age discrimination by police. In addition, as indicated earlier, there is an undersampling of urban area in NIBRS data. The biggest concern when one is using official data is underreporting. If race, gender, or age is related to reporting *and* to weapon use or injury level, our coefficients may be biased. For example, perhaps the relationship between race and the seriousness of the assault is observed because minor assaults on blacks are less likely to be reported to the police than minor assaults on whites while serious assaults and homicides are equally likely to be reported. Evidence from the NCVS, however, suggests the opposite: violence against blacks is slightly more likely to be reported to the police, controlling for weapon use and injury (Baumer, 2002; Felson et al., 1999, 2002; Rennison, 1999). In addition, violence in disadvantaged neighborhoods is more likely to be reported than violence in middle-class neighborhoods (Baumer, 2002). If these biases are operating they would increase the strength of the effects we find for race.

Another possible problem is our inability to control for the socioeconomic status of the victim. It could be argued that offenders are responding to socioeconomic status rather than race. Perhaps they have stereotypes about poor people rather than black people. However, if they were responding to socioeconomic status, we would find weaker effects for incidents involving strangers since their SES is usually unknown. In addition, this interpretation cannot easily explain the statistical interactions involving race.

Another limitation of the research is that we do not have a measure of the offender's perception of the threat posed by the victim. It was necessary to assume that the effects of the victim's characteristics on gun use and injury were the result of perceived threat. In future research offenders might be asked how the victim's characteristics influenced their decisions.

A bias producing an alternative explanation of our findings is more likely in the case of gender. Violence against females is more likely than violence against males to be reported to the police (Felson et al., 2002; Rennison, 1999; Skogan, 1984). Perhaps some of our gender effects occur because minor violence against males is less likely to be reported than minor violence against females. Our gender effects, however, are so strong that we think it is unlikely that underreporting can completely explain them.

We recognize that adversary effects can only be a partial explanation of race differences in violent behavior. A starting mechanism is required to explain why rates of violence in black and white communities diverged in the first place. Other theories of violent crime are therefore necessary. In addition, adversary effects cannot easily explain the effects of the offender's race. One could argue that offenders anticipate their own impact on adversaries and react more extremely. However, we suspect that structural factors and perhaps cultural differences will provide better explanations of race differences among offenders.

8. Conclusions

Our analyses deal with race but they may apply to other social contexts as well. Adversary effects may help explain why the United States has a much higher homicide rate than European countries but similar rates of assault (Van Dijk, 2008; Zimring and Gordon, 1997). The direct effects of firearms do not fully explain the pattern since Americans have somewhat higher rates of homicides committed without guns. It may be that the presence of guns results in higher levels of lethal intent in the US where offenders think it is prudent to finish off their adversaries.

In sum, we have focused on the seriousness of violent incidents rather than their frequency. Our results suggest that the race, gender, and age of victims have strong effects on whether these incidents end in a death or serious injury. A three-way interaction indicates that offenders have a special reaction to young black males. The threat of these adversaries increases the likelihood that offenders will use weapons and kill their victim. Adversary effects play an important role in making homicide the leading cause of death among young black males.

⁹ Our contextual effect was moderate in size. Perhaps it would have been stronger if we had a contextual measure that better captured the offender or victim's specific neighborhood. We think that it is unlikely a better contextual measure would have reduced the effects of race of victim. Evidence not presented suggested that controlling for community disadvantage did not affect the race coefficients.

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