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Predicting Perceptions of Fear at School and Going to and From School for African American and White Students: The Effects of School Security Measures

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Abstract

This article uses the School Crime Supplement of the National Crime Victimization Survey to investigate the factors related to White and African American students' perceived levels of fear of harm, while at school and while commuting to and from school. Of particular interest were the effects of school security measures, including metal detectors, security guards, locked doors, and surveillance cameras. After controlling for the effects of previous victimizations, security measures, and other contextual and demographic variables, there were no differences in levels of fear across gender and race groups. However, certain predictors of fear differentially affected White and African American students. Previous victimization experiences, including bullying, and the presence of metal detectors increased levels of fear for

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all groups. Security guards in schools increased levels of fear for White students but not for African American students. African American students attending school in suburban and rural areas were more fearful compared to their central city counterparts, whereas White students were more fearful if they attended school in urban areas. Implications for policy are discussed.

Keywords

fear of crime, school security, race

Introduction

The horrific acts of random violence that have occurred across our nation's schools along with pressure from community groups and parents have placed school safety as one of the main issues confronting school administrators. As a result, schools across the country have implemented a wide range of policies and technical innovations to improve their security systems. In fact, one survey of school administrators found that 94% of schools had reviewed or updated their security preparedness in the past year and 37% planned to install at least one new type of security equipment in the following year (Agron & Anderson, 2000). The U.S. Department of Education and the Bureau of Justice Statistics (National Center for Education Statistics & the Bureau of Justice Statistics, 2009) also report that the percentage of schools using security measures has increased steadily since 1999.

Simultaneous to these mobilization efforts has been decreasing rates of victimization among adolescent populations in general, and in the school setting in particular. In fact, from 1992 to 2007, rates of nonfatal violence and theft occurring in schools have steadily declined and the percentage of all youth homicides occurring at school has remained at less than 2% of the total number of youth homicides (National Center for Educational Statistics and the Bureau of Justice Statistics, 2009). Unfortunately, other indicators of school climate have not improved. For example, the percentage of students who were threatened with a weapon or who had been in a physical fight in the past 12 months while on school grounds has remained relatively constant over this time period (National Center for Educational Statistics and the Bureau of Justice Statistics, 2009). Moreover, although students' fear of crime at school has decreased since the highs observed in 1995, the percentage of students being fearful of harm at school has remained relatively constant since 2001, even though rates of victimization have continued to decrease.

Being fearful of victimization at school can obviously affect the receptiveness and capacity for student learning. In addition, being fearful has other negative psychological effects such as causing psychological distress, anxiety, and posttraumatic stress disorder (Dao et al., 2006; Springer & Padgett, 2000). Fear also affects other quality-of-life indicators such as students restricting their activities to avoid fearful situations. Despite the importance of understanding the etiology of adolescents' fear of crime, we still know very little about it, particularly how the factors related to fear vary by race. Moreover, we know very little about the impact that security measures implemented by schools, such as metal detectors and surveillance cameras, has had on students' perceptions of fear. Understanding the emotional impact of security measures is important since some contend that intrusive security measures may actually "cause more harm by creating a social climate that interferes with the educational process" (Beger, 2003, p. 338) or that these measures may "articulate larger mechanisms of social control" that differentially affect students of color (Kupchik & Monahan, 2006, p. 617).

Although recent research is beginning to unravel the factors related to the fear of victimization in adolescent populations, the majority of this research relies on local samples (May & Dunaway, 2000; Wallace & May, 2005; Wilcox, Augustine, Bryan, & Roberts, 2005) or fails to control for important contextual characteristics of the school environment such as security measures (for exception, see Schreck & Miller, 2003). Moreover, the majority of these studies simply control for race in multivariate models predicting fear but fail to perform race-sensitive analyses. As there is a strong relationship between race and the probability of victimization (Rand & Catalano, 2007) and because most research finds a strong relationship between objective victimization and subjective perceptions of fear (Wallace & May, 2005; Wilcox et al., 2005), investigating the factors that may differentially predict fear across race/ethnic identities is important. In this article, we use a nationally representative sample of 6th through 12th graders to determine the factors, including school security measures, which are most significant in predicting perceived fear of victimization for White and African American students. We limit our analysis to a comparison of Black and White students' fear for several reasons. Our focus conforms to norms of the educational literature, which often use Blacks as the comparison group for Whites. Because of this customary emphasis, the literature on Black and White differences in school is much more extensive than literature on other racial/ethnic comparisons. Given the preliminary nature of our research on racial differences in fear of victimization at school, we wanted to ground our study in the literature that has the most precedent. Moreover, the longevity and significance of differences between

Blacks and Whites on other educational measures including achievement suggest the importance of continuing to compare these groups. Overall, our focus on Blacks and Whites was motivated by a desire to examine racial groups who have previously been shown to have significant and long-lasting differences in their experiences at school.

Crime Prevention in Schools

Research shows that most schools practice a wide variety of crime prevention strategies (Gottfredson et al., 2004; Gottfredson & Gottfredson, 2001). For example, Gottfredson and his colleagues (2004) identified three categories of prevention strategies employed by schools: direct services, organizational and environmental arrangements, and discipline or safety management activities. Direct services include distributing instructional materials about risky behavior, interventions to prevent problem behavior and promote orderliness, and counseling services provided to students or families. Gottfredson et al. found that schools generally only use a narrow range of direct services. Perhaps more importantly, they also found that schools seldom used interventions that reinforced positive behaviors, such as a rewards system.

Organizational or environmental arrangements include restructuring classes and schedules to prevent problem behavior, the use of external personnel (security and police), and the use of barriers and surveillance measures (security cameras). Gottfredson et al. (2004) found that a majority of schools used these techniques including the reorganization of students and classes, architectural features (building gates, use of security cameras, etc.), and external personnel (security, police, etc.) to increase safety. Use of this category of prevention strategy varied somewhat by school characteristics with urban schools being more likely than schools in other areas to use structural barriers such as fences and barricades.

Discipline or safety management activities involve the establishment, communication, and enforcement of school rules and policies regarding discipline and safety. Almost all schools sampled by Gottfredson and his colleagues (2004) had strict rules about substance abuse and possession of weapons that were widely communicated to teachers, students, and families. In addition, most schools reported applying severe consequences for breaking these rules. For example, nearly all schools reported automatically suspending or expelling students for possession of illegal substances or weapons. However, schools were also likely to have these same penalties for minor infractions, such as use of profane language.

As noted earlier, schools are increasingly using law enforcement efforts and technological surveillance in their schools to prevent crime (Kupchik & Monahan, 2006; National Center for Educational Statistics and the Bureau of Justice Statistics, 2009). Unfortunately, the efficacy of these measures in reducing disorder and victimization, along with the unintended consequences of such measures, including increases in anxiety and fear, remain largely unknown.

Explaining Fear

The catalyst for the more recent literature investigating subjective fear of crime probably has its origins in Garofalo's (1979) study that used the early National Crime Survey (NCS) to unpack the relationship between victimization experiences and fear. The NCS, now called the National Crime Victimization Survey (NCVS), used a global question to measure fear that asked "How safe do you feel or would you feel being out alone in your neighborhood at night?" (Garofalo, 1979, p. 82). In this classic study, Garofalo found that previous victimization experiences were linked with perceptions of fear for all age and gender groups, but both older persons and females were more fearful of crime despite their lower rates of victimization.

Within just a few years, research began refining both the conceptualization and the operationalization of fear. When research examined more refined measures of fear that were operationalized to be crime and context specific, findings indicated that younger individuals were more fearful compared to the elderly (LaGrange & Ferraro, 1989; LaGrange, Ferraro, & Supancic, 1992). Regarding gender, some research has found that the general fear of crime perceived by females may actually be attributable to the more specific fear women have to the crime of rape. As Ferraro (1996) explains, "sexual assault may 'shadow' other types of victimization among women" (p. 669). Rape may operate like a "master offense" among women, especially younger women who have the highest rate of rape, heightening fear reactions for other offenses. Research has generally supported this contention (Ferraro, 1996; Warr, 1985). For example, Warr (1985) found that the fear of rape significantly increased fear of other offenses such as robbery and burglary. In fact, when fear of rape was controlled in models predicting fear of other offenses, gender differences were either eliminated or completely reversed, with boys becoming more fearful than girls (Warr, 1985). Research that does not control for the specific fear of rape has generally found that girls are still more fearful of victimization compared to boys.

Research examining perceived fear across race and ethnic groups remains mixed as well, with some research finding minorities to be more fearful compared to Whites (Chiricos, Hogan, & Gertz, 1997), some finding no difference (LaGrange et al., 1992; Wilcox Rountree, 1998), and still others finding minorities to be more fearful of violence but not of property crime (Ferraro, 1996). These equivocal findings also extend to the relationship between individuals' socioeconomic status and perceived levels of fear.

Another refinement in the fear of crime literature has been the conceptual advancements regarding the distinction between the emotional reactions to crime and cognitive perceptions of "risk" (Ferraro & LaGrange, 1992). Wilcox Rountree (1998) summarizes, "scholars have emphasized the value in distinguishing a cognitive dimension of fear tapping perception of victimization risk from an emotional dimension of fear more closely tapping psychological or physiological reactions to the threat of victimization" (p. 345). Research that has examined both individuals' perceptions of fear and assessments of risk have generally found that these two constructs are significantly related but that the correlates of each are somewhat different with risk assessments often mediating the effects of other variables on perceptions of fear (LaGrange et al., 1992; Warr & Stafford, 1983; Wilcox Rountree, 1998).

Research has also underscored the importance of controlling for indicators of incivility when predicting the fear of crime. LaGrange et al. (1992) defined incivilities as "low level breaches of community standards that signal an erosion of conventionally accepted norms and values" (p. 312), which includes both disorderly physical surroundings and disruptive social behaviors. The concept of incivility is also related to Wilson and Kelling's (1985) concept of "broken windows," and Warr's (1990) concept of "cues to danger" among others. Most of the early work examining the relationship between incivilities and fear used perceived measures such as asking respondents about the neighborhood presence of such things as abandoned buildings, gangs or unsupervised youth, litter, graffiti, drunks, or people using illegal drugs (Box, Hale, & Andrews, 1988; LaGrange et al., 1992; Lewis & Maxfield, 1980). In general, most research using perceptual measures has found that higher levels of incivility are related to higher levels of fear, even after controlling for the effects of previous victimization and other demographic variables. Recent work has begun to incorporate objective measures of incivility by having trained observers rate the extent of incivilities present in neighborhoods (Covington & Taylor, 1991; Sampson & Raudenbush, 1999; Taylor & Hale, 1986) or control for the objective rates of crime within neighborhoods (Wilcox Rountree, 1998; Wilcox Rountree & Land, 1996). The effects of these objective measures of incivility on perceived levels of fear have been inconsistent.

Predicting Fear Among Adolescents

The brief review above has highlighted the important advancements made by research examining levels of fear in the general population, but research examining perceived levels of fear among adolescents, particularly within the context of schools, remains in its infancy. Moreover, only a few of the published studies have actually assessed the relationship between school security efforts and students' perceived levels of fear.

Several of the studies that have examined fear of crime at school have used the National Crime Victimization Surveys (NCVS) School Crime Supplement (SCS), which is administered to 12- through 18-year-olds who had attended school at any time during the preceding 6 months. The earliest study to use the SCS was done by Frank and Jackson (1991). Unfortunately, this research did not present multivariate analyses with more than two variables. From this study, we do know that the presence of gangs at school increased levels of fear for students both while at school and going to and from school.

Alvarez and Bachman (1997) also used the SCS to examine the fear of being attacked both at school and while going to and from school. They found that experiencing both a theft and violent victimization increased the likelihood of being fearful at school. Indicators of a subculture of violence at school, which others have conceptualized as incivilities, including gang presence, attacks on teachers, and easy alcohol and drug availability also increased levels of fear among students. Alvarez and Bachman (1997) found no differences in fear levels while at school across race, ethnicity, or gender groups; however, younger students and students from low-income families did experience more fear compared to older students and those with higher family incomes. Findings were somewhat different when perceptions of fear while commuting to and from school were examined. In this context, Black and Hispanic students were more fearful than Whites as were females of all races. This study did not examine the relationship between school security measures and fear.

Others have collected data from local samples. For example, May and Dunaway (2000) surveyed public high school students in Mississippi about their perceptions of fear within different school contexts including being afraid to go to school because "I might become a victim of crime," being afraid to go to school events "because of fights," being afraid to stay late after school, and being afraid to go certain places at school. Using an index of fear created from these items, May and Dunaway found that the only significant predictors of student fear were perceived neighborhood incivilities and their

perceived safety at school. They also found that Black boys were more fearful than their White counterparts, but there were no differences in perceived fear by socioeconomic status or for previous victimization experience.

One of the most sophisticated explorations of fear in an adolescent sample was conducted by Wilcox and her colleagues (2005) who examined both perceptions of risk and perceptions of fear using crime specific questions. Using data collected in Kentucky, they found that the factor related most strongly to perceived fear across crime types (fear of physical attack, fear of theft, and fear of unwelcome sexual remarks) was previous victimization experiences and students' assessments of their own risks of victimization. Students who were previously victims of these offenses and who had higher risk assessments of being victimized were more likely to perceive an emotional fear. Girls did have an increased likelihood of experiencing a fear of sexual harassment, which appeared to spillover to a general fear of a physical attack. However, there were no clear relationships found between race or socioeconomic status and fear. Unfortunately, other than the location of the respondent as metro, suburban, or rural, there were no other contextual factors examined in this study.

While some have examined the effects of security measures on social disorder within schools, which included actual victimizations (Mayer & Leone, 1999), we could find only one study that examined the effects of school security measures on perceptions of fear at school. Schreck and Miller (2003) used the School Safety and Discipline Component of the National Household Education Survey, which measured fear by asking students how they were about victimization from thefts, robberies, and assaults. Unfortunately, the questions did not distinguish between worry about victimizations at school or going to and from school. Importantly, however, they did examine the relationship between fear and school security measures including the presence of metal detectors, security guards, locked doors, visitor sign-in, locker checks, restroom limits, and adult supervision of hallways. Many of their findings are consistent with those of Alvarez and Bachman (1997). For example, they found that the strongest and most consistent predictor of student's "worrying about victimization" was related to previous victimization. Girls in higher grades were each more likely to worry about multiple types of crime, but African Americans and those from families with higher incomes were only more likely to worry about becoming the victims of robbery. Students bringing weapons to school and the presence of gangs at school also increased the likelihood of students worrying about multiple types of victimization. The more troubling findings of Schreck and Miller (2003) related to the positive

relationship between virtually all of the security measures and student worries about victimization. Schools with locked doors, restroom limits, metal detectors, and adult supervision in the hallway each increased at least one form of worry in student perceptions. These relationships held even after controlling for previous victimizations, the other contextual factors of the school, and student demographic characteristics.

Clearly, more research is needed to determine the unintended consequences of school security measures. Moreover, because research has found that these security measures may differentially affect African American students (Kupchik & Ellis, 2008), more refined race-specific analyses predicting fear separately across race subgroups is needed. In this article, we will examine the extent to which previous victimizations, indicators of incivility such as gun and gang presence at school, specific school security measures, and other social and demographic controls affect African American and White students' perceptions of fear of an attack at school and going to and from school.

Method

The sample used for this article was obtained from the School Crime Supplement (SCS) of the National Crime Victimization Survey (NCVS) for 2005, which was sponsored by the Bureau of Justice Statistics and the National Center for Educational Statistics. The NCVS is a nationally representative sample of households; those eligible for inclusion in the sample include individuals aged 12 or older living in the United States, including persons living in group quarters such as dormitories, rooming houses, and religious dwellings. The survey does not interview members of any type of institutionalized population including juvenile detention centers.

To be eligible for participation in the SCS, respondents had to meet the following criteria: (a) be 12 to 18 years of age, (b) be in a primary or secondary educational program leading to a high school diploma, and (c) be enrolled sometime during the 6 months prior to the interview. Students who were home schooled were not included as it was determined that many of the questions in the SCS were not relevant to their situation. The SCS was administered at the end of the NCVS interview for each eligible respondent. The primary purpose of the SCS was to obtain additional information about school-related victimizations including bullying as well as other contextual characteristics of school such as gang presence, violence prevention measures, and attitudinal questions related to the fear of victimization at school.

Table 1. Percent Distribution of Variables and Mean Levels of Fear by Race, School Crime Supplement of the NCVS, 2005

	Total sample	White students	African American students
Fearful at school	19%	18%	20%
Fearful going to and from school	12	11	18
School safety measures			
Guards	69	66	84
Metal detectors	11	8	26
Security cameras	57	32	62
Locked doors	53	54	61
Other school factors			
Rules strictly enforced	85	85	83
Gun presence	6	6	8
Gang presence	13	12	18
Takes private car to school	30	32	16
Public school	51	51	48
Previous victimization			
Violent victimization (anywhere)	1	1	1
Property/theft victimization (anywhere)	4	4	3
Bullied at school	28	28	28
Demographic controls			
Central city	29	24	52
% female	49	49	50
% White	78		
Mean age	14.9	14.9	14.9

Dependent Variables

To measure perceived levels of fear students were asked two questions: "How often are you afraid that someone will attack or harm you at school?" and "How often are you afraid that someone will attack or harm you on the way to and from school?" Response choices for both questions was a Likert-type format ranging from 1 (*never*) to 4 (*most of the time*). Because of the extreme skewness for each distribution, response choices were dichotomized and coded 1 for students who had ever experienced fear and 0 for students who had not. Table 1 presents the distribution of this variable along with the independent variables for the total sample along with the race-specific distributions. Although similar percentages of students had been fearful at school regardless of race, a higher percentage of African American students were fearful while going to and from school compared to their White counterparts.

Independent Variables

School prevention measures. We examined 4 different types of security within schools including the presence of guards, metal detectors, security cameras, and whether the doors were locked at all times. Specifically, to ascertain guard presence, students were asked, "Does your school take any measures to make sure students are safe? For example, does the school have: Security Guards and/or assigned police officers? Metal Detectors? One or more security cameras to monitor the school? Are the doors and exits locked during school hours?" Four dichotomous variables were created to indicate the presence of each of these measures (coded 1) or their absence (coded 0). As can be seen in Table 1, 69% of students reported guards, 11% reported metal detectors, 57% reported security cameras, and 53% reported locked doors. It is important to note that a higher percentage of African American students reported these security measures being present in their schools compared to Whites.

Previous victimization. As previous victimization experiences have been found to be significantly related to perceptions of fear in both adult and adolescent populations, we controlled for several types of victimization. The first variable measured the extent of bullying students experienced while at school. Students were asked about a number of bullying behaviors they may have experienced during the past 6 months including "made fun of you, called you names, or insulted you," "spread rumors about you," "threatened you with harm," "pushed you, shoved you, tripped you, or spit on you," "tried to make you do things you did not want to do, for example, give them money or other things," "excluded you from activities on purpose," and "destroyed your property on purpose." Students experiencing one or more of these victimizations were coded 1; students who experienced none of them were coded 0. Approximately 85% of White students and 83% of African American students experienced at least one type of bullying.

Two other victimization variables measured student's experiences of violence and of larceny, regardless of where the victimization occurred. We included these measures because it is logical to assume that victimizations occurring somewhere other than school may be generalized to students' perceptions of fear in all contexts including the school environment. As the SCS respondents were also asked the general NCVS screening questions about previous attacks and thefts, it was possible to include these victimizations into models predicting fear. If respondents experienced a crime of violence or the threat of violence including a rape, robbery, or assault, a dichotomous variable called "violence" was coded 1; this variable was coded 0 if no

violent victimization occurred. Only about 1% of respondents experienced a violent crime. A second variable called "property" was coded 1 if respondents or their households experienced any type of theft and 0 otherwise. Four percent of White students and 3% of African American students experienced some type of property crime.

School contextual variables. We used 4 variables to capture the context of the school environment: whether the school was public or private, whether the school was located in a central city, the presence of gangs in the school, and the presence of guns in the school. If students reported that their school was public, a dichotomous variable was coded 1; this variable was coded 0 for those students who reported their school to be private. Just more than half of all students attended public school (51%). Schools located in the central city of a Standard Metropolitan Statistical Area (SMSA) were coded 1 and others were coded 0. African American students (52%) were much more likely than the population in general (29%) and the White student population (24%) in particular to attend schools in central cities. We also examined the effects of other gang variables on levels of fear including the frequency of gang fights and gang violence, and whether gangs sold drugs. However, because the gang presence variable was the strongest predictor of fear across all models, it was retained for all analyses.

In addition, a final variable measured students' perceptions of discipline at school as the result of rule violations. Students were asked, "Thinking about your school over the last 6 months, would you strongly agree, agree, disagree, or strongly disagree with the following . . . . The school rules are strictly enforced." All those who agreed or strongly agreed with that school rules were strictly enforced were coded 1 and all those who disagreed or strongly disagreed were coded 0. A majority of all students (85%) believed rules were strictly enforced in their schools.

Other controls. As one of the dependent variables captures fear while going to and from school, it was important to control students' mode of transportation to and from school. Taking a private car is undoubtedly the most protected mode of transportation compared to other modes lacking adequate guardianship such as school buses and other public forms of transportation. Accordingly, a dichotomous variable was coded 1 if students reported their mode of transportation to be a private car and 0 for any other form of transportation. A higher percentage of White students reported taking a private car to school (32%) compared to African American students (16%). This is undoubtedly related to the higher percentage of African American students attending schools in central cities where public transportation is more readily available.

In the regression models predicting fear for the total sample, both gender (1 = *male*, 0 = *female*) and race (0 = *White*, 1 = *African American*) were controlled. About 78% of the total sample was White, and 49% were female. Age in years was also included in the models; the mean age for all groups was around 15.

Analysis plan. Logistic regression models predicting fear of crime at school and going to and from school were first performed using the total sample. These full models determined whether differences in fear existed between gender and race groups after controlling for the other independent variables. Next, race-specific models predicting fear separately for Whites and African Americans were estimated. These models determined the extent to which the independent variables differentially predicted fear for White and African American students.

Results

The first dependent variable examined was students' perceptions of fear while at school. Table 2 presents the results of the logistic regression predicting this fear for the total sample along with the race-specific models predicting fear for Whites and African Americans. The coefficient for race indicates that African American students were not more likely to be fearful while at school compared to their White counterparts. Gender was also insignificant in the total sample model, indicating there were no differences in perceptions of fear between male and female students after controlling for the other independent variables.

Our key variables of interest in the race-specific models are the effects of the school security measures. As can be seen, the presence of metal detectors increased the likelihood of students being fearful across all groups, whereas the presence of guards did so for Whites only. Importantly, each of the security measures at school except for locked doors was positive, which indicates that they each were associated with increased probabilities of students perceiving fear.

When White students perceived rules to be strictly enforced at school, they had a decreased probability of perceiving fear while at school, but this was not significant for African American students. Gang presence at schools also increased perceived levels of fear for Whites only. Although approaching significance, students at public schools were not more fearful compared to their private school counterparts once the other variables were controlled.

Residing in a central city affected levels of fear for both groups but in different ways. For White students, residing in a central city increased their fear

Table 2. Results of Logistic Regression Predicting Levels of Fear While at School, NCVS School Crime Supplement, 2005

	Total		White		African American	
	B	*SE*	*B*	*SE*	*B*	*SE*
Security measures						
Guards	0.242	.082**	0.225	.090**	0.298	.298
Cameras	0.126	.076	0.095	.082	0.358	.202
Metal detectors	0.350	.1117**	0.268	.134*	0.600	.207**
Locked doors	–0.083	.073	–0.044	.079	–0.295	.192
Other school factors						
Rules enforced	–0.216	.095*	–0.208	.105*	–0.260	.233
Gun presence	0.006	.107	0.051	.118	0.193	.258
Gang presence	0.667	.082**	0.768	.090**	0.219	.198
Private car to school	–0.109	.075	–0.097	.081	–0.133	.203
Public school	0.293	.164	0.280	.173	0.449	.589
Previous victimization						
Victim of violence	0.812	.202**	0.718	.221**	1.709	.533**
Victim of property	0.298	.036*	0.360	.153**	0.126	.417
Bullied	1.245	.074**	1.335	.082**	0.846	.191**
Demographic controls						
Central city	0.278	.082**	0.442	.091**	–0.385	.188*
Male student	0.041	.072	0.012	.079	0.141	.180
Age	–0.097	.022**	–0.113	.024**	–0.057	.055
Black student	–0.197	.106				
	N = 5,829 –2 LL = 5,023, *p* < .001		*N* = 4,985 2 LL = 4,185, *p* < .001		*N* = 845 2 LL = 794, *p* < .001	

Note: LL = log likelihood.
*$p < .05$. **$p < .01$.

levels both at school and while commuting. However, living in a central city actually decreased levels of fear for African American students while they were at school.

Having been the victim of any type of offense including bullying served to increase levels of fear for all students. In fact, compared to the other variables in the model, significance levels revealed that being bullied was the strongest predictor of fearfulness at school. Regarding gender, there were no significant differences between boys and girls in levels of fear at school for either White or African American students. And finally, getting

Table 3. Results of Logistic Regression Predicting Levels of Fear Going to and From School, NCVS School Crime Supplement, 2005

	Total		White		African American	
	B	*SE*	*B*	*SE*	*B*	*SE*
Security measures						
Guards	0.241	.106*	0.242	.113*	0.014	.297
Cameras	0.071	.088	0.015	.097	0.341	.208
Metal detectors	0.495	.117**	0.552	.141**	0.363	.211*
Locked doors	0.158	.085	0.086	.094	0.569	.211**
Other school factors						
Rules enforced	–0.159	.110	–0.149	.124	–0.254	.249
Gun presence	0.053	.123	0.081	.139	0.041	.270
Gang presence	0.541	.094**	0.625	.105**	0.186	.208
Private car to school	–0.650	.088**	–0.666	.096**	–0.603	.226**
Public school	0.131	.197	0.181	.216	–0.011	.515
Previous victimization						
Victim of violence	0.876	.212**	0.798	.237**	1.437	.521**
Victim of property	0.421	.158*	0.519	.168**	–0.051	.451
Bullied	0.682	.088**	0.733	.098**	0.535	.201**
Demographic controls						
Central city	0.361	.092**	0.494	.104**	–0.110	.193
Male student	–0.020	.020	–0.115	.093	–0.027	.188
Age	–0.036	.025**	–0.031	.028	–0.057	.055
Black student	0.049	.112				
	N = 5,829 –2 LL = 4,015, *p* < .001		*N* = 4,984 2 LL = 3,237, *p* < .001		*N* = 845 2 LL = 751, *p* < .001	

Note: LL = log likelihood.
*$p < .05$. **$p < .01$.

older decreased levels of fear while at school for both groups but was significant for White students only.

Table 3 presents the results of the logistic regression predicting fear while going to and from school. Again, there were no significant differences across race in perceptions of fear while commuting once the other independent variables were controlled. Interestingly, the effects of school security measures still affected student levels of fear even while going to and from school. The presence of guards at school increased fear while commuting for Whites only, but the presence of metal detectors increased levels of fear for all

students. Interestingly, doors being locked at school became positively related to fear while commuting for all groups but significant only for African Americans. This may be related to the fact that a locked door prevents a student from using the school as a safe haven if needed after school. The effects of gangs also increased levels of fear while commuting for White students but not for African American students.

Not surprisingly, commuting to school in a private car compared to walking, taking a school bus, or other public transportation served to decrease the probability of fear while commuting for all students. Previous victimizations significantly increased fear while commuting for all students with the exception of theft victimizations, which did not increase levels of fear for African American students.

Location of residence also differentially affected levels of commuting fear for White and African American students. Going to school in a central city increased the probability of being fearful while commuting for Whites. However, similar to the finding for fear at school, living in a central city actually decreased levels of fear while commuting for African American students. Finally, once these contextual and experiential factors were controlled, there were no differences in the likelihood of African American or White boys and girls experiencing fear while going to and from school.

Discussion

This research has illuminated the importance of conducting race-sensitive analyses to determine the factors related to perceived levels of fear in the school context. After controlling for the effects of previous victimization and other important contextual characteristics of the school, there were no significant differences in perceptions of fear while at school or while commuting to and from school across gender and racial groups. However, while certain factors similarly affected both White and African American students' perceptions of fear, there were differential effects for others. Of particular interest in this article were the effects of school security measures in predicting students' perceived fear.

Consistent with Schreck and Miller (2003), our results indicate that the effect of school security measures generally serves to increase levels of fear both at school and while commuting to and from school. The presence of guards and metal detectors both significantly increased overall perceptions of fear, even after controlling for other important variables such as previous victimizations. In addition, having a "locked door" also significantly increased African American students' fear while commuting to and from school. As

locked doors may prevent students from seeking safety inside the school building either before or after school, this findings makes intuitive sense. The rationale for the relationship between fear and the other surveillance mechanisms is not so intuitive. However, like the presence of gangs and other disorder within schools, security cameras, and guards may also be translated in the minds of students as indicative of "incivilities" (LaGrange et al., 1992) or "cues to danger" (Warr, 1990) that need interventions.

Clearly, if there was empirical evidence demonstrating that these coercive measures actually served to decrease rates of victimization in schools, the costs of increasing student fear may be balanced. However, evidence suggests that these strategies are routinely implemented in school districts where no discernable threats to safety exist (Kupchik & Monahan, 2006). We could find no published research that empirically examined the effects of these security measures on rates of school victimizations using an experimental design. However, using a cross-sectional design, Mayer and Leone (1999) found that "secure building" measures such as metal detectors, surveillance cameras, and security guards actually increased levels of disorder present in schools, including personal thefts and drug use and availability. A vivid illustration of the equivocal efficacy of these measures is also illustrated in the Columbine High School mass shooting, where surveillance cameras and a security guard were present. As such, the fact that coercive surveillance measures appear to aggravate fear, even after controlling for experiences with victimization and other important factors, indicates a need for administrators to reevaluate these policies. In fact, others have suggested that coercive security measures may interfere with learning and result in an atmosphere of mistrust that serves to decrease a sense of community (Mayer & Leone, 1999).

Our results indicate that there are less intrusive measures school administrators can perform that serve to decrease levels of fear. When students believed that the school rules were "strictly enforced" in their schools, they were less likely to be fearful while at school. Importantly, these measures have also been found to reduce school disorder (Mayer & Leone, 1999). Together, these findings would seem to indicate that well-defined and communicated school discipline codes are very important in producing safety in schools, at both the subjective and objective levels. Importantly, it takes relatively few resources to communicate school rules and the consequences for rule breaking compared to the "secure building" methods of surveillance cameras and metal detectors.

Importantly, previous victimizations in general, and bullying in particular, were the strongest predictors of fear across all groups. In fact, being bullied was the only variable that was consistently related to fear both in school and

going to and from school for both Whites and African Americans. Clearly, security measures meant to eliminate threats from the outside have no capacity to limit the threats and taunts from the inside. As previous research indicates that bullying has other deleterious consequences for students including depression (Seals, 2003) and other health issues such as headaches and gastric distress (Nansel et al., 2001; Salmon & West, 2000) along with scholastic competence (Mouttapa, Valent, Gallaher, Rohrback, & Unger, 2004), efforts to reduce bullying in schools would appear to be urgent. Although model policies for reducing bullying in schools have been developed (Dounay, 2005), it is important to determine the efficacy of such interventions with diverse populations.

Several contextual factors had differential effects on perceptions of fear for White and African American students. Although the presence of gangs at school increased the probability that all students would be fearful both at school and while commuting to and from school, it was significant only for White students. In addition, living in a central city significantly increased the likelihood that White students would be fearful but served to decrease levels of fear for African American students. One explanation for this may be related to the racial heterogeneity that exists in the city compared to suburbs and rural locations, which tend to be more densely populated by Whites. There is a great deal of research documenting both the positive and negative effects of school segregation (Goldsmith, 2004). However, even a diverse student population does not ensure a high level of interracial friendliness (Stearns, 2004). Clearly, more research is needed to understand the factors that may inhibit minority group members from feeling safe and prohibiting their achievement in suburban schools that may be predominately White.

In the educational landscape of "no child left behind," school administrators undoubtedly face a number of hurdles. Fostering an environment that encourages and promotes learning and creativity is obviously a challenge. Making the school premises safe and secure is inextricably related to achieving this goal. Feeling pressure from parents and marketing, administrators may fall prey to a huge private industry emerging that promises quick fixes to security needs. For example, a perusal of periodicals marketed to school administrators reveals frequent commentaries by industry executives with calls to action such as

> Districts must realize that school violence can happen anywhere at any time . . . . and even in kindergarten classrooms and elementary schools, preparations must be taken. A preemptive approach to security enables districts to keep unwanted and unfamiliar visitors at bay,

while keeping an eye on what goes on within each school. (Jensen & Fletcher, 2007, p. S3)

Our findings coupled with those of others (Mayer & Leone, 1999; Schreck & Miller, 2003) suggest that administrators should use caution when implementing coercive methods of control.

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