Sources of Fear of Crime at School: What Is the Relative Contribution of Disorder, Individual Characteristics, and School Security?

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ABSTRACT. While policymakers have granted a substantial commitment of resources in order to reduce fear of crime among U.S. school students, the research literature on fear of crime at school is in its infancy. This study investigates whether school security techniques reduce or exacerbate fear of crime among students, net of community and school disorder and student characteristics. Ferraro's (1995) theory of incivilities suggests that students might perceive highly visible security as an incivility, which might increase their fear of crime. Using a nationally representative sample of American school children from the 1993 National Household Education Survey: School Safety and Discipline Component

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(NHES-SSD), we found that while school security efforts do not predict student fear as well as school disorder and individual student traits, many types of security correspond with a significantly greater likelihood that a student will be worried about crime while none reduce feelings of worry.

KEYWORDS. School safety, crime, student fear, school violence

The dire predictions concerning victimization at school make it difficult to question the effort committed to prevention strategies. *The Washington Post*, for instance, reported that 70 percent of students' parents believed that a shooting was "likely" at their school (Tucker, 2001; see, also, Juvonen, 2001). Over the years, teachers and administrators have often believed that school crime is a serious problem that is growing worse (Anderson, 1998; Metropolitan Life Insurance Co., 1993; Sheley, McGee, & Wright, 1995; Toby, 1983). The substantial degree of concern extends beyond parents and the education workforce, however. Between 1989 and 1995, there was a significant increase in the percentage of students fearing attack and/or avoiding specific locations in their school (Kaufman et al., 1999). In order to make victimization at school less likely, as well as to calm the fear of students for their own safety, the U.S. government passed legislation in 1994 that made millions of dollars of federal money available to schools. With this assistance, schools have increasingly come to rely on a variety of security programs, like guards and metal detectors.

The paradox of the fear-of-crime phenomenon is that crime at school, like crime elsewhere across the U.S., is an uncommon occurrence (Kaufman et al., 1999; Bureau of Justice Statistics, 1999). Most students do not directly experience victimization during any given school year. Parents' beliefs regarding the likelihood of a school shooting are especially at odds with reality, as the annual risk of death from shooting is less than one in one million (see Regoli & Hewitt, 2000). Nevertheless, research indicates that it is wrong to dismiss fear of crime as a research domain simply because actual victimization chances are relatively low. Those who are afraid of becoming victims are more likely to suffer from numerous psychological and health problems (Hale, 1996; Ross, 1993). Researchers have also posited that fear of victimization handicaps the ability of students to succeed in school (Kenney & Watson,

1998; Office of Juvenile Justice and Delinquency Prevention, 1986). Thus, while the prevalence of fear among students has declined in recent years (see Davoe et al., 2002), substantial percentages of students are afraid. Learning more about the sources of fear is therefore a critical research topic.

Unfortunately, little information exists about the antecedents of fear of crime among children, let alone fear specifically in the school setting (see Hale, 1996). Much scholarly attention has instead centered on risk factors for adult fear of crime (e.g., Donnelly, 1988; Skogan, 1987; Warr, 1984; Warr & Stafford, 1983; Will & McGrath, 1995). In light of the fact that children carry a disproportionate share of victimization risk (Bureau of Justice Statistics, 1999), it appears reasonable to focus more attention on the determinants of fear within this uniquely vulnerable group. Research has lately begun to identify the correlates of student fear (Alvarez & Bachman, 1997; May & Dunaway, 2000; Welsh, 2001). These studies have found that a variety of individual, school, and community characteristics predict feelings of fear at school, including prior victimization, the presence of criminals at school, neighborhood incivility, and various demographic characteristics (e.g., being female). One goal of our research is to further explore how well these variables predict fear at school.

In addition to the risk factors found in the literature, there is a possibility that school security efforts that are either coercive or highly visible to students, like metal detectors, could represent a source of additional fear. The theoretical linkage between school security and fear of crime is discussed below, as well as research on other significant correlates of fear. While we have no reason to hypothesize that visible security is a major determinant of fear, it is nevertheless important for policy purposes to understand whether attempts by schools to control disorder can significantly aggravate fear beyond what one might expect after controlling for established predictors of fear. This study reports analyses based on data from a nationally representative sample of middle and high school students on a variety of risk factors for fear, with a special emphasis on the connection between school security and student fear.

SOURCES OF FEAR OF CRIME

The research literature has found that fear of crime corresponds with the actual experience of victimization, vicarious victimization, and en-

vironmental cues. Fear also seems to relate with membership in particular demographic groups. Fear-promoting environmental cues derive from what one observes in specific school and community settings, while demographic traits and experience of victimization are characteristics of individuals and may influence fear beyond those predictors found within school and community contexts. The fear-of-crime literature addresses each of these general sources of fear.

One of the more interesting findings to emerge concerns the relation between demographic traits and fear. Females, for instance, tend to have more fear of crime than males, even though their risk of becoming a victim is generally much less. Some researchers have proposed that this odd finding might occur because females are socialized to assume that they are defenseless (e.g., Parker & Ray, 1990). Media representations of women as frequent targets for crime may also spread more fear (Dines, 1992). Fear also varies by racial membership. For instance, Alvarez and Bachman (1997) found that black students have more fear than those in other racial groups. They speculated that this is because blacks are more likely to have to travel through high-risk areas to go to and return from school, and thus the fear of black students might originate with disorder in the community and earlier victimization.

Previous victimization is one of the salient risk factors for fear of crime among adults (Skogan, 1987; Parker & Ray, 1990) as well as school children (Alvarez & Bachman, 1997). This is perhaps because actual victimization can serve as a poignant reminder of vulnerability, although some commentators caution that the empirical relation between victimization and fear of crime is yet inconclusive (e.g., Hale, 1996). Other individual characteristics besides personal victimization may also explain fear. Children with delinquent friends tend to be more afraid (see Welsh, 2001). This may be because one who spends time with delinquent friends is more likely to witness actual crime, to hear about the victimization of their friends (Hale, 1996; Skogan & Maxfield, 1981), and to be threatened with retaliation (see Singer, 1981).[1] Defensive precautions against victimization may influence level of fear as well (Ferraro, 1995). The question remains about whether students carrying weapons experience less worry than they would otherwise, net other relevant individual characteristics and incivilities that might prompt the defensive behavior. Hostility toward the school might also promote more fear (see Welsh, 2001). Students with a dislike for school and who distrust school officials may be isolated from potential sources of protection and support.

Besides personal risk factors for fear, environmental cues may also matter. The presence of physical or social objects in the area which alert people to possible criminal victimization–usually called 'incivilities'–would inform the belief that victimization is likely to happen (e.g., Ferraro, 1995). Incivilities are violations of community standards indicative of the weakening of community norms and values (LaGrange, Ferraro, & Supancic, 1992). For example, boisterous and unsupervised youth idling in plain sight might represent social incivility, while decayed buildings and litter indicate physical incivility. Fear of crime need not necessarily correspond to the actual risk of victimization inherent in the setting, but it is instead an individual's subjective estimate of the certainty of victimization based on an interpretation of the situation.

Much of the research on incivilities and fear of crime has focused on the community setting rather than the school (e.g., Bursik & Grasmick, 1993; Covington & Taylor, 1991; LaGrange et al., 1992; Rountree, 1998; Warr, 1990; Will & McGrath, 1995). At least among community residents, the research has generally supported the claim that the presence of incivilities leads to greater fear of crime (c.f., Miethe, 1995). Some research has found that community incivilities extend to fear of school-related crime (May & Dunaway, 2000). Besides supplying a context for the school campus, many children have to await transportation to school in disordered communities, or else they must walk through them to get to school. Researchers have used this explanation to help make sense of racial differences in level of fear (e.g., Alvarez & Bachman, 1997). In fact, some research has reported that school-related fear of crime is greatest while the student is going to or from school (Lab & Clark, 1997). Community disorder may therefore be a significant source of student fear.

Besides community incivility, the school itself might promote fear of crime. Alvarez and Bachman (1997), for instance, found that public school students tend to have more fear than those who attend private schools, even net of other risk factors. The public/private distinction, while potentially important, is theoretically ambiguous. That is, the average public school might have more disorder than comparable private schools, but the distinction may also reflect other differences (e.g., image). More direct indicators of incivility at school would be desirable. Wayne Welsh and his associates (1999, 2000) have led recent research on school disorder (see also Gottfredson & Gottfredson, 1985). Their indicators of school disorder focused primarily on social incivilities, such as student misconduct and visible criminal activity on school cam-

pus. To the extent that such disorder is plainly visible, one may suppose that they will promote greater fear since they would remind other students of proximity to dangerous people. Alvarez and Bachman (1997) found this to be the case. Campus criminal activity in particular–like visible gang activity and drug dealers–leads to greater fear among students.

The relation between school security efforts and student fear of crime is unclear, however. An obvious rationale for school security is to allay vocal public concerns that schools do something about on-campus violence (Juvonen, 2001). Thus, visible security presumably serves a beneficial symbolic purpose, which is to be a reminder that the campus is a safe place. Whether or not security efforts actually improve student safety (see Schreck, Wright, Miller, & Gibson, forthcoming), the harmful consequences of simply being afraid mean that these programs might be worthwhile even if they only lessened fear. At the same time, however, one may argue that many school security measures serve to reinforce the perception that victimization could happen. Metal detectors, for instance, might remind students that some of their peers might be carrying weapons. Coercive security might also alienate students and foment greater lack of confidence in school and, potentially, more worry. Ferraro's (1995) framework might therefore interpret visible security as a form of incivility that might increase students' fear of crime, rather than reduce it.

This study thus investigates community and school incivilities, as well as the role of individual correlates of fear of crime. This research also focuses on the impact of school security on student fear. Although it appears to be "common sense" to believe that security ought to relieve student fear, it is possible that visible security could be an incivility that might worsen fear beyond what other effective predictors of fear would explain. In view of the psychological and health problems associated with having fear of crime (e.g., Hale, 1996), it is important to investigate whether various approaches to school security can further undermine school effectiveness by stimulating feelings of fear.

METHODS

The National Household Education Survey (NHES) is a survey begun in 1991 and conducted every two years by the National Center for Education Statistics. The 1993 version of the NHES is presently the only one that included the school safety and discipline component,

which measures fear of crime and a variety of potential correlates of fear. While these data are nearly a decade old, they are interesting in that the 1992-93 school year represented a near-peak year for victimization and fear among students in American schools.

Survey respondents were selected via random digit dialing, in order to collect a representative sample of households from all 50 states and the District of Columbia (Brick, Collins, & Chandler, 1997). Those in the household who were eligible to participate in the survey received detailed interviews. The data include a sample of 12,680 parents of children in grades 3 through 12, and 6,427 children in grades 6 through 12. The present analysis uses only the data supplied by the school children in grades 6 through 12, although student information is supplemented with parent-provided and census data.[2] Students attending trade or vocational schools are omitted, which leaves a final sample size of 6,418. The SSD component response rate is 68%, with very few missing cases among the individual items (Brick et al., 1997). Nonresponse appeared to be most concentrated among black and economically disadvantaged respondents, but bias tended to be minimal for most other demographic characteristics (Brick, Keeter, Waksberg, & Bell, 1996). In light of data indicating that those who are black or have low economic status have relatively high victimization risk (Bureau of Justice Statistics, 1999), one might expect that people with the highest risk of victimization would be underrepresented. While this means that frequency estimates would be somewhat biased, the focus of this research is on strengths of relationships between variables; as far as we know, there is no theoretical justification for believing that statistical associations among the variables we investigate depends on race. The NCES imputed any missing data for individual items, so the NHES-SSD data set contains no missing data (for additional details on imputation, see Brick, Tubbs, Collins, & Nolin, 1997).

DEPENDENT VARIABLE–WORRYING ABOUT CRIME AT SCHOOL

What fear of crime exactly is, is a matter still under debate (e.g., Warr, 2000). In common usage, however, fear refers to an emotional state. The NHES-SSD has several items appropriate for measuring *worry about victimization.*[3] This study uses five dependent measures, which capture worry coming from specific types of crime and more generally. The specific forms measure worry about thefts, robberies,

and assaults. The general measures are indexes for fear of *multiple* (two or more) specific forms of victimization and an index for worry about *any* form of victimization (theft, robbery, and/or beating). The specific/general distinction is intended to allow for the identification of domain-specific risk factors for fear (see Warr, 2000). The worry measures make no distinction between worry about victimization at school and fear while going to and from school. Each index is coded dichotomously in order to allow logistic regression analysis: 1 = yes, 0 = no. Worry about theft victimization is the most common form of worry, and more than a third of the sample reported being worried about at least one form of victimization (see Appendix A for more detailed descriptive information). Worry thus occurs among many, though not most, students, and worry about victimization is more than twice as widespread as actual victimization at school (see Kaufman et al., 1999).

Independent Variables

The predictor variables include student demographic characteristics, a community disorder measure, school-related variables, and individual student exposure and attitudinal measures. Demographic items include *sex* (1 = male), *grade level*, *family income*, and *race* (with whites as the reference category). The community measure is perception of the respondent of *the safety of the community compared to other communities*. As Ferraro (1995) suggests, it is the perception that a community is unsafe that matters most, rather than the real risk in the community, which one could measure with a variable for area crime rate. Moreover, perceptions of community safety are not analogous with the emotional response of fear (see Warr, 2000). Presumably, students indicating that their community is relatively unsafe compared to other communities would have witnessed a greater proportion of incivilities in their neighborhood, which might lead to worry.

Several items measure student characteristics. One indicator measures whether the *respondent had attended school for less than a year*. It appears reasonable to expect that students who have attended a particular school for a brief period are more likely to be afraid because of their relative unfamiliarity with their present school. The index measuring belief that there is *unfair rule enforcement* is a proxy suggesting isolation from school employees.[4] The assumption is that students who believe that school rules are administered fairly will tend to be closer to teachers and administrators, and trust them for protection. *Alienation from school* is a two-item index asking the respondent if he or she en-

joyed school and whether the student felt that students and teachers respected each other. Students who dislike school and report a climate of disrespect should also be less likely to trust teachers for protection. The sole item for defensive precautions asks the respondent about having ever *carried a weapon to school.* We measure individual *exposure to delinquent friends* with an index consisting of items asking the respondent if any friends smoke cigarettes, drink, smoke marijuana, or take any other illegal drugs. The *victimization experience* items ask about victimization experiences specifically at the school, like theft, beatings, and robbery.

The NHES-SSD asks questions of parents about the characteristics of the school their child attends. Among these is the approximate *size of the student body.* Presumably, larger schools will have greater disorder and fear; however, readers should be aware that a smaller student/teacher ratio (something the NHES-SSD does not measure) might offset the problems posed by a large number of students. We also control for whether the student attends a *public school,* which is a risk factor for fear (Alvarez & Bachman, 1997). The survey also asks respondents if their *school is located in the neighborhood* in which they live. Additionally, schools where the *student is a member of a racial minority* might suggest the student is isolated (but note: A higher score indicates that the student is not in minority). School-related exposure variables include: *Presence of weapons* among other students, and the *presence of fighting gangs at school. School guardianship* consists of a variety of measures, including an indicator for drug education training and a series of items reporting the presence of metal detectors, security guards, locked doors, visitor sign-in, locker checks, and adult supervision of hallways.

RESULTS

Table 1 presents the Spearman rank-order correlations between all of the variables and the different measures for worry.[5] Of greatest interest is the positive relationship between nearly all of the school guardianship measures and the probability that a student will be worried about crime. That is, students attending schools using any of these target-hardening programs were significantly more likely to be worried. Bivariate analysis, however, can be misleading because it does not take into account other relevant causal influences. In particular, one may plausibly argue that fear of crime is high at schools employing target

TABLE 1. Spearman Correlation Matrix

	Worry About Crime				
	Theft Only	Robbery Only	Assault Only	Multiple Types	Any Type
Worry (Theft)	1.00				
Worry (Robbery)	.22**	1.00			
Worry (Assault)	.22**	.17**	1.00		
Worry (Multiple)	.46**	.59**	.63**	1.00	
Worry (Any)	.88**	.35**	.46**	.44**	1.00
Black	.01	.08**	.00	.03*	.03*
Hispanic	.07**	.05**	.07**	.07**	.08**
Other Race	−.01	.00	.00	−.01	.00
Male	−.08**	−.02	−.01	−.04**	−.07**
Family Income	−.05**	−.07**	−.06**	−.06**	−.07**
Grade Level	−.05**	−.04**	−.07**	−.06**	−.07**
Unsafe Community	.05**	.06**	.08**	.08**	.06**
Public School	.07**	.04**	.08**	.07**	.09**
Local School	.00	.01	.01	.00	.01
Student Population Size	.03*	.02	.05**	.04**	.04**
Student Is Not Minority	−.05**	−.06**	−.05**	−.05**	−.07**
Drug Dealers	.10**	.10**	.09**	.11**	.10**
Others with Weapons	.19**	.11**	.14**	.16**	.20**
Gangs at School	.14**	.14**	.14**	.16**	.17**
Guards	.04**	.07**	.07**	.07**	.06**
Metal Detectors	.03*	.05**	.04**	.04**	.04**
Locked Doors	.05**	.01	.05**	.05**	.06**
Visitor Sign-In	.04**	.01	.03*	.03*	.05**
Restricted Restrooms	.07**	.03**	.06**	.06**	.08**
Hall Monitors	.05**	−.01	.05**	.03*	.06**
Locker Checks	.04**	.03*	.01	.03*	.03**
Hall Passes	.03*	.02	.04**	.03**	.04**
Drug Education	.05**	.03*	.02	.04**	.04**
First Year at School	.03*	.01	.06**	.03*	.05**
Brought Weapon	.04**	.07**	.05**	.06**	.06**
Rules Are Unfair	.09**	.09**	.07**	.10**	.10**
Delinquent Friends	.09**	.06**	.07**	.08**	.09**
Alienated from School	.10**	.06**	.08**	.09**	.11**
Victimization Experience	.37**	.17**	.17**	.23**	.37**

*($p < .05$), **($p < .01$)

hardening because they already have higher levels of disorder and criminal activity. This could plausibly be the true source of fear, which means that students' fear might be even higher in schools failing to implement some form of target hardening.

It may thus be useful to see whether disorder actually predicts whether schools use security. Table 2 presents the results of this analysis. In general, the independent measures as a group best predict the presence of security guards and the use of hall passes. There is a smaller range of variables successfully predicting whether there are metal detectors and hall monitors, and the independent variables were not particularly successful explaining the existence of other modes of target hardening. Variables measuring school disorder in many cases significantly explain the presence of a security method, but disorder has no relationship with many types of security and even seems to relate in opposite directions across types of security. Schools with drug dealers, for instance, have a greater chance of using security guards, but they are also significantly less likely to employ hall monitors. These patterns may reflect organizational preferences: Officials at schools where drug dealers are a problem may see greater advantage in using guards as a replacement for hall monitors. The only consistently successful predictor across types of security is whether a school is a public school; except for locking doors, public schools are significantly more likely to use any of the security methods. In short, this test indicates that disorder is not confounding the positive bivariate relationship between school security and worry. The results also suggest that controlling for security might account for some of the effect of the association between public school attendance and worry noted in Alvarez and Bachman (1997).

Table 3 reveals the predictors for each of the measures for worry. The first three columns of odds-ratios are for worry about specific forms of victimization (theft, robbery, and assault). Most forms of target hardening do not much affect students' worry about robbery victimization. Only locked doors and drug education programs appeared to significantly predict worry, in the direction of making worry more likely.[6] On the other hand, many forms of guardianship (e.g., hall monitors, locked doors, and restroom limits) correspond to greater worry about theft and assault. The positive association between many of the security variables and student worry is clearly not an artifact of higher levels of crime and disorder at the school. The controls for gangs, drug dealers, and other students with weapons–two of which independently relate to each type of worry–should have accounted for greater exposure to crime. In short, the use of some security stratagems is associated with an increased

TABLE 2. Coefficients for Regression of School Security Measures on Assorted Community- and School-Related Predictors (Odds-Ratios)

	School Security Measures								
Independent Variables	Security Guards	Metal Detectors	Locked Doors	Visitor Sign-In	Restroom Limits	Hall Monitors	Locker Checks	Hall Passes	Drug Education
Unsafe Neighborhood	1.40***	1.70***	1.10**	.87**	1.13**	.94	1.00	.94	.90*
Public School	1.72***	3.83***	.73***	1.36***	1.75***	2.79***	2.32***	6.19***	1.22*
Number of Students	1.73***	1.32***	1.06*	1.21***	.98	1.21***	.97	1.41***	.97
Drug Dealers	1.31***	1.07	.75***	1.09	.70***	.87*	.73***	.65***	.74***
Others Bring Weapons	1.11*	.93	1.07	1.06	1.02	1.10	.98	1.25**	1.17*
Gangs at School	2.03***	1.66***	1.16**	1.18**	1.14*	1.03	1.21***	1.46***	.96
Chi-Square	844.07	135.60	34.20	98.11	67.15	237.73	84.49	603.81	23.40
d.f.	6	6	6	6	6	6	6	6	6
Signf.	.00	.00	.00	.00	.00	.00	.00	.00	.00
Nagelkerke R^2	.17	.06	.01	.02	.01	.05	.02	.16	.01

*(p < .05), **(p < .01), ***(p < .001); "Drug Education" dichotomized for this analysis (1 = drug educ., 0 = no drug educ.)

TABLE 3. Coefficients for Regression of Worry About Crime on Independent Variables (Odds-Ratios)

	Worry About Crime				
Demographic	Theft Only	Robbery Only	Assault Only	Multiple Types	Any Type
Black	.91	1.87***	.78*	1.01	1.04
Hispanic	1.35***	1.36*	1.27*	1.38**	1.42***
Other Race	.99	1.31	1.12	1.01	1.20
Male	.57***	.70***	.85*	.62***	.62***
Family Income	.98	.96*	.98	.98	.97**
Grade Level	.93***	.85***	.83***	.83***	.90***
Community Context					
Unsafe Neighborhood	1.00	1.00	1.19**	1.17*	1.00
School (Guardianship)					
Guards	.93	1.15	1.16	1.13	.97
Metal Detectors	1.21	1.24	1.31*	1.21	1.20
Locked Doors	1.18*	1.42**	1.18*	1.25*	1.18**
Visitor Sign-In	1.08	.95	1.14	1.05	1.12
Restroom Limits	1.26***	1.14	1.16*	1.32**	1.23***
Supervise Hallways	1.19**	.94	1.37***	1.15	1.24***
Locker Checks	1.02	1.16	.87	1.03	.96
Hall Passes	1.00	1.01	1.07	1.01	1.01
Drug Education	1.09***	1.08*	1.04	1.10**	1.07**
School (Exposure)					
Public School	1.21	1.06	2.32***	1.58*	1.28*
Local School	.99	1.11	1.06	.96	1.04
Sch. Population Size	.99	1.01	1.11*	1.08	1.01
Student Is Not Minority	.95	.90	.98	.99	.95
Drug Dealers on Campus	1.06	1.27*	1.13	1.26*	1.05
Others Bring Weapons	1.74***	1.43**	1.69***	1.91***	1.74***
Gangs at School	1.26***	1.94***	1.50***	1.71***	1.40***
Individual					
First Year at School	.92	.80*	1.08	.96	.97
Brings Weapon	.98	1.44*	1.29	1.31	1.10
Rules Are Unfair	1.04*	1.13***	1.02	1.09**	1.03
Delinquent Friends	1.06*	1.09*	1.10**	1.09**	1.07**
Alienation Toward School	1.07*	1.00	1.13**	1.06	1.10**
Victimization	6.42***	2.85***	2.28***	3.42***	6.63***
Chi-Square	1143.27	378.46	447.52	602.07	1285.02
d.f.	29	29	29	29	29
Signf.	.00	.00	.00	.00	.00
Nagelkerke R^2	.23	.15	.14	.19	.25

Note: *p < .05; **p < .01; ***p < .001

probability that a student will be worried beyond what one might expect given disorder and other important predictors, with the remaining security not relating to a greater probability of worry, but also not corresponding to lower odds of worry either.

Of the remaining predictor variables, the most salient is victimization experience. Victims of school crime are more likely to worry about victimization, regardless of type. The same is true to a lesser degree for students with delinquent friends, and who feel rules are unfair or have hostile attitudes toward school. These results are supportive of the notion that vicarious victimization and isolation from school authorities heighten feelings of fear. Several of the demographic variables consistently predict victimization regardless of type of victimization. Males are less worried about victimization than females. Students in higher grades also tend to be less worried. Of the racial groups, only Hispanics consistently have a significantly greater chance of being worried than whites. Black students, in contrast, tend to have an inconsistent relationship with worry. Blacks are significantly more worried about robbery, but are significantly less worried about assault.

The last two columns show which factors predict the likelihood of worry about multiple forms of victimization and worry about at least one type of victimization. The index for multiple sources of worry crudely reflects an intensity scale. The assumption is that students worried about more types of victimization are more intensely worried. The results indicate the same pattern noted for specific worry also holds for multiple sources of worry. That is, most of the target-hardening policies have no significant relationship with worry about becoming the victim of two or more types of crime, while several significantly increase the probability that students will be afraid. In contrast to the results observed among the predictors of multiple sources of worry, security appears more salient when considering worry about at least one form of victimization. In particular, locked doors, restroom limits, hall monitors, and drug education are associated with significantly higher probabilities of worry.

Apart from the familiar demographic patterns in fear (males being less worried, Hispanics being more worried), earlier victimization is again an important predictor of both worry about multiple types of victimization and worry about at least one type of victimization. School disorder (i.e., students with weapons, fighting gangs), as expected, is an important concomitant of worry. Additionally, students of public schools tend to be significantly more worried. Why this is so is not clear, unless there are other dimensions of disorder uniquely associated with public

schools that the NHES could not adequately measure (e.g., physical incivility). Perceptions of community safety only appear to matter for predicting likelihood of worry about multiple types of victimization, with unsafe communities being a significant predictor of such worry.

CONCLUSION

Other researchers have noted that "it is obvious that schools are often fear-inducing locations for many students" (Alvarez & Bachman, 1997:81). Schools have recognized this problem, and have employed a variety of strategies to reduce fear (see, for instance, Gottfredson, 1997; Kenney & Watson, 1998). Schools have also invested in many programs intended to reduce fear-causing disorder. While research has begun to focus on sources of fear among school students, there has been little attention given to whether school security in fact makes students less likely to worry about crime. This research, besides adding to existing knowledge about fear-of-crime correlates, sought to test whether school security lessened fear.

Theories explaining fear of crime, although not explicitly opposed to security at school, suggest that visible and potentially coercive forms of security should be implemented with care. To the extent that security reminds students of the possibility that victimization can occur, security may then represent a form of "incivility" that might generate fear. The literature already reports many significant risk factors for fear. Perceptions that the community is unsafe can affect fear of becoming a victim. Fear-inducing incivility can also originate at the school. In particular, visible criminal activity in the form of gangs, drug dealers, and fellow students with weapons should make fear more likely to occur. The experience of victimization at school can promote fear, as well. Since research has linked fear to so many sources as well as to a number of negative consequences for students, schools are in the position where they must do something to ease feelings of fear; however, in so doing, schools must not do anything that would make students more afraid.

The NHES-SSD data did not permit exhaustive coverage of every technique schools use to reduce disorder, but there were many variables measuring the presence of typical programs: Guards, metal detectors, locked doors, visitor sign-ins, restroom restrictions, hall monitors, locker checks, hall pass requirements, and drug education. The results show that some forms of security do have a statistical relationship with fear of crime: They correspond with *higher* levels of student fear. As

noted earlier, these variables do not relate to fear as strongly as is the case with other predictors in the analysis, but the effect coefficients are nevertheless statistically significant. The other forms of security measured in the NHES-SSD had little relationship with fear, either better or worse. Our data thus indicate that, on average, many forms of security aggravate fear beyond what one might expect given major predictors gleaned from the fear-of-crime literature, and that other protective methods fail to make students feel safer. Readers should be aware that these results do not conclusively show why security either relates to more fear or is ineffective at alleviating fear. These results, however, suggest that the relation between security and fear deserves more scrutiny and that schools should be careful about how security is perceived among students and how such programs are implemented.

Although validating the other risk factors for fear of crime was not the central focus of this study, the results are comparable with those reported in the literature. Community risk factors appear to increase some types of fear, partially supporting May and Dunaway's (2000) findings. School disorder is clearly important for determining levels of fear, as is previous victimization at school (see Alvarez & Backman, 1997; Welsh, 2001). Hostility toward school, and having friends who participate in delinquent activity, appears to make fear more likely (see Welsh, 2001). Familiar demographic patterns also are present in this study. Males are consistently less worried about crime, while minority students often tend to have more fear. This study corroborates much of what earlier research has found. Incivilities in the community as well as school, and individual characteristics, remain important risk factors.

Tentative Policy Recommendations

While the results of this study question familiar crime prevention approaches in schools, it would be wrong to suggest that schools should do nothing about disorder. The literature describes many alternatives that are both effective and unobtrusive. Henig and Maxfield (1978), for instance, proposed environmental design ideas that can promote safety without reminding people of crime. Using related ideas, Felson (1998) recommended designing school buildings and grounds with surveillance in mind. One can also enhance surveillance in the school by having fewer doors with which students may enter or leave, placing the principal's office next to main entrance, having a smaller campus, fewer stairwells, and fewer trees and landscaping (see also Hope, 1982). None of these strategies would remind students of crime, but they make

fear-inducing crime less likely because improved visibility promotes effective guardianship. Although the findings of this research did not show a relationship between school population size and fear of crime, Felson (1998) also advised having schools with smaller numbers of students. None of the policies listed here direct the attention of observers to the possibility of crime, but they promote security by allowing school employees to more easily monitor student activity and control their movement around campus.

Limitations

This study shares many of the limitations of other investigations of fear of crime. First, the data are cross-sectional, which means that it is impossible to explore the long-term effect of incivilities on student fear. Ralph Taylor (1999) observed that incivilities might influence feelings of fear over a period of time. In the case of schools, visible security could cause students to grow progressively more fearful, but one could also claim that students might eventually accustom themselves to having visible security around and consequently become less fearful. Second, and more specific to this study, readers should be aware that the available indicators of guardianship are somewhat crude, as there is considerable variation in how effectively schools implement each method of target hardening. McDaniel (2001), for instance, noted that there is no consistent definition as to what a school resource officer (SRO) exactly is or does. Her summary of existing knowledge about SROs also indicates that the function of SROs is continually evolving. Consequently, readers should remember that SROs in 1993 might differ qualitatively from those in 2003, with a concomitantly different effect on student fear. This variation may also be the case with the other guardianship strategies analyzed here. This possibility, however, does not argue against the fact that attempts by schools to deal with disorder can further aggravate levels of fear, as our data show. Finally, the data do not include measures for programs intended to reduce fear, like the Charlotte School Safety Program (see Kenney & Watson, 1998). Gottfredson (1997) indicates that many schools have programs designed to promote student safety and alleviate fear, although not all of them work. The ability of these programs to successfully reduce fear among students, net of existing disorder, incivilities, and individual student characteristics requires greater attention. Limitations such as these, however, indicate that the topic of fear of crime at school remains one in which still more discoveries are possible.

NOTES

1. Participation in delinquency is a risk factor for victimization (see Lauritsen, Sampson, and Laub, 1991; Schreck, 1999), so students who engage in delinquent activity will have a greater probability of becoming a victim themselves and, consequently, will likely talk about such experiences with their friends.

2. The Appendix contains a listing of all variables, and parent-provided items are denoted with a *.

3. Mark Warr (2000) suggests that a more accurate way to term emotional reactions to anticipated threats of crime, as opposed to an immediate threat (which our data do not measure), as "anxiety" rather than "fear." There is amazingly little consensus, however, so we follow the bulk of research and describe the dependent variable as "fear."

4. This index contains the following question items: The school rules are fair; punishment for breaking school rules is the same no matter who you are; school rules are strictly enforced; if a rule is broken, students know what kind of punishment will follow.

5. The complete correlation matrix is available on request from the lead author. The full table might be useful for readers interested in the relationship among the predictors. Since our purposes are more restricted, we are mainly concerned that too high a correlation among the predictors might cause unstable regression coefficients. Regression diagnostics (i.e., tolerance statistics), however, indicated no multicollinearity among any of the predictor variables.

6. Several security measures qualified as "borderline" significant (i.e., $p < .10$). Note items in Table 3 with odds-ratios that seem relatively high–e.g., metal detectors. In no case did a security technique significantly reduce worry about victimization, even by the relaxed standards of borderline significance.

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APPENDIX A. Description of Measures and Simple Statistics

Variable	Description (Type of Variable and Coding)	Mean	S.D.
Fear of Crime			
Worry (Theft)	Dichotomous Variable: 1 = worried	.29	.45
Worry (Robbery)		.06	.24
Worry (Assault)		.10	.30
Worry (Multiple)		.09	.29
Worry (Any Type)		.35	.48
Demographic			
Male	Dichotomous Variable: 1 = Male	.50	.50
Grade Level	Discrete Variable: Range 6-12	8.76	1.97
Black	Dichotomous Variable: 1 = Black	.15	.35
Hispanic	Dichotomous Variable: 1 = Hispanic	.14	.35
Other Racial Group	Dichotomous Variable: 1 = Other Race	.03	.18
Family Income*	Discrete Variable: 1 = < $5000, 2 = $5001-10,000, 3 = $10,001-15,000, 4 = $15,001-20,000, 5 = $20,001-25,000, 6 = $25,001-30,000, 7 = $30,001-35,000, 8 = $35,001-40,000, 9 = $40,001-50,000, 10 = $50,001-75,000, 11 = > 75,000	7.24	2.94
School Characteristics			
Does the school have . . . ?			
Security guards	Dichotomous Variables: 1 = yes	.34	.47
Metal detectors		.06	.23
Locked doors during the day		.31	.46
A requirement that visitors sign in		.75	.43
Limits on going to the restroom		.37	.48
Teachers assigned to supervise the hallway		.67	.47
Regular locker checks		.30	.46
Hall passes required to leave class		.86	.35
Victimization			
Overall	Dichotomous Variable: 1 = victim	.17	.38

Variable	Description (Type of Variable and Coding)	Mean	S.D.
Community Characteristics			
Would you say your neighborhood is:	Discrete Variable: 1 = safer than neighborhood, 2 = about as safe, 3 = not as safe as my neighborhood	1.68	0.64
Approximately how many students enrolled at the school?*	Discrete Variable: 1 = less than 300, 2 = 301-599, 3 = 600-999, 4 = 1000+	2.80	1.02
Does your child go to a public or private school?*	Dichotomous Variable: 1 = public	.91	.29
Approximately what percent of the students are of the same race or ethnic background as your child?*	Discrete Variable: 1 = less than 25%, 2 = between 25% and 75%, 3 = more than 75%	2.33	.68
Is the school located in the neighborhood where you live?	Dichotomous Variable: 1 = yes	.64	.48
Index: extensiveness of drug education	Discrete Variable: 0 (no drug education) through 4 (extensive drug education)	1.74	1.23
Do you know of any other students bringing weapons to school this year?	Dichotomous Variable: 1 = yes	.43	.50
Do any students at your school belong to fighting gangs?	Dichotomous Variable: 1 = yes	.36	.48
Individual Characteristics			
Is this the first year your child attended the school?*	Dichotomous Variable: 1 = yes	.32	.47
During the school year, did you ever bring something to school to protect yourself from being attacked or harmed?	Dichotomous Variable: 1 = yes	.03	.17
Index: perception that rules are not enforced fairly	Discrete Variable: 1 (most fairness) through 7 (least fairness)	3.75	1.82
Index: do friends smoke, drink, use marijuana or other drugs?	Discrete Variable: 1 = friends do none of these, 4 = friends do all four of these	1.20	1.38
Index: alienation toward school	Discrete Variable: 2 = least alienation, 6 = most alienation	4.26	1.05

*Denotes information provided by parents.