The Effects of Situational Crime Prevention on

Crime and Fear among College Campuses and Students

Katie A. Farina, M.A.

Current Institutional Affiliation: University of Delaware

Email Address: kfarina@udel.edu

Graduation Date: May 17, 2009, Villanova University

Faculty Advisor: Allison Ann Payne, Ph.D.

Villanova University

Abstract

Previous research has suggested that situational crime prevention tactics could be useful on college campuses. College campuses represent a unique environment for their students. By their very nature and population, these institutions may put students at risk for victimization. As such, it is important to examine the effects of situational crime prevention techniques at the student level. The results could prove influential for future prevention and policy endeavors. This study sets out to examine situational crime prevention tactics in relation to crime rates and fear of crime for college students. OLS regression analyses will be conducted using data from ICPSR that contain a sample of 3,472 students from 12 four-year postsecondary institutions in the United States.

Introduction

While college campuses are relatively safe compared to the general population, victimization is a concern for students. According to the *Sourcebook of Criminal Justice Statistics*, in 2002, 5.1% of college students were victims of violence and 9.6% were threatened with violence (Pastore and Maquire, 2003). In 2007, the U.S. Department of Education reported 30,204 burglaries, 2,833 aggravated assaults, and 2,698 forcible sex offenses on college campuses. There were also 4,910 reported motor vehicle thefts and 1,935 robberies (Campus Security, 2007). Campus crime has been found to be less common and severe than crime in the general population, but victimization still occurs (Henson and Stone, 1999). Crime on campus deserves attention and prevention efforts. One such method that could be successful is situational crime prevention (SCP).

SCP emerged based on research focusing on defensible space, environmental design, hot spots, routine activities, and choice structuring (Clarke, 1995, 1997). SCP involves techniques that change an environment or situation to influence a potential offender's choice to commit a crime (Clarke, 1980, 1995, 1997). Since the decision to commit a crime varies by offender and offense, situational tactics must have a crime-specific focus to alter a potential offender's decision to commit a crime in that immediate moment. The focus is on reducing crime opportunities for specific crimes in specific locations by making changes to the specific environment.

College campuses could benefit from such modifications. While campus crime is lower than the surrounding environment, rates on campuses have mirrored trends found in society at large (Pastore and Maquire, 2003; Smith and Fossey, 1995). Research devoted to SCP on campuses shows preliminary success on some basic components of situational techniques (see

Fisher, Sloan, Cullen and Lu, 1997; Henson and Stone, 1999; O'Kane, Fisher and Green, 1994; Poyner, 1991; Tseng, Duane and Hadipriono, 2004). However, these prevention tactics on college campuses should be evaluated to determine their possible effects on not only crime, but also students' fear of crime, which may be related to SCP (Barr and Pease, 1990; Fisher and Nasar, 1992). A further point of interest is the possible interaction between school SCP measures and student SCP behaviors.

This study will conduct secondary data analysis using a dataset made available by the Inter-University Consortium for Political and Social Research (ICPSR) entitled, "Understanding Crime Victimization Among College Students in the United States". The current study will examine relationships between student and school SCP and crime and fear of crime. This research addresses gaps in previous literature by focusing on analyses at the student level and investigating the presence of an interaction effect between school and student SCP. Also, it adds to the little research that focuses on SCP on college campuses. A new connection is examined between SCP and fear of crime components.

Literature Review

As a crime prevention model, SCP has found itself a niche among environmental criminological theories for two key reasons: (1) It has presented and expanded novel reasons for the causal nature of crime and (2) it has expanded prevention techniques from focusing on the offender to focusing on the environment where an offense takes place. Clarke (1980) believed that focusing on situational factors was important for three reasons: (1) explanation for crime is focused on the criminal event, (2) a greater need to develop separate categories of crime and (3) the individual's current circumstances are used to explain the decision to offend. Clarke (1980)

claimed that SCP offered a more practical prevention application by its very nature and theoretical framework.

Defining Situational Crime Prevention

SCP consists of techniques that aim to block criminal opportunities (Clarke, 1995, 1997; Clarke and Homel, 1997). This perspective implies that making changes to places will prevent criminal events by affecting an offender's decision to commit crime in that specific time and location. In particular, SCP tries to diminish a criminal opportunity; it predicts that changes to the environment will alter an offender's analysis of the costs and benefits associated with committing an offense and crime will be prevented (Clarke, 1995, 1997; Clarke and Homel, 1997). Eck (2002) suggests that such place-based policies may have a greater effect upon the offender, because they target an offender's final immediate decision to commit a crime.

SCP tactics can be described within four categories of opportunity-reducing strategies (Clarke, 1997; Clarke and Homel, 1997). Such tactics aim to increase the perceived effort of a crime (target hardening, access control, deflecting offenders, and controlling facilitators), increase the perceived risks of a crime (entry/exit screening, formal surveillance, surveillance by employees, and natural surveillance), decrease the anticipated rewards of a crime (target removal, identifying property, reducing temptation, and denying benefits) or induce shame or guilt (rule strengthening, moral condemnation, controlling disinhibitors, and facilitating compliance) (Clarke, 1997; Clarke and Homel, 1997).

A small percentage of offenders and places are habitually involved in crime (Spelman and Eck, 1989). Recent evidence suggests that situations are more predictable than individuals (Weisburd, 1997). A clustering effect of crime at places, also termed "hot spots" has been found (Sherman, Gartin and Buerger, 1989). This suggests that a large amount of crime occurs

routinely in a small number of places. Research has found support for this concentration effect among convenience stores, residences, drinking establishments, fast food restaurants and perhaps most importantly such clustering is stable over time (Farrell, 1995; Sherman, et al., 1989; Spelman, 1995).

Routine activities theory, suggests that offenders and targets habitually meet in the same place with few capable guardians (Cohen and Felson, 1979). Crime and victimization continues to occur in these condensed areas. Repeat victimization in places is largely the work of offenders—who are likely to be career criminals—returning to the same victims in the same places (Farrell, 1995). SCP circumvents the problem of identifying offenders by highlighting the importance of places in relation to crime. The associated correlates of hot spots, a clustering effect of crime, and the predictability of places support the use of SCP.

Situational Crime Prevention, Schools, and Colleges

SCP techniques have produced significant results in a variety of different spheres. These tactics are widely used in schools at the elementary and high school levels; however, relatively few studies have been done on the topic. Recent reviews suggest that SCP models may have some success in schools (Cheurprakobkit and Bartsch, 2005; O'Neill and McGloin, 2007). Cheruprakobkit and Bartsch (2005) found that the use of school uniforms, intra-sport activities, criminal justice courses and rewards for attendance were effective at reducing drug crime. The use of metal detectors and closing campuses during lunch hours was also significant for interpersonal crime (Cheuprakobkit and Bartsch, 2005). O'Neill and McGloin (2007) confirmed Cheurprakobkit and Bartsch's findings (2005), with statistical support for the use of closed campuses during lunch to prevent property crimes.

Due to the size and population of campuses, colleges allow for motivated offenders, suitable targets, and the absence of capable guardians to easily converge (Henson and Stone, 1999). Research has identified the presence of hot spots on college campuses (O'Kane et al., 1994), and found that SCP tactics such as closed circuit television (CCTV) and improved lighting can reduce property crimes (O'Kane et al., 1994; Poyner, 1991; Tseng et al., 2004). Fisher et al., (1997) found that students were likely to use target hardening strategies to protect their belongings.

College campuses are unique environments that tend to consist of students who reside on the campus and faculty and staff who continually traverse the grounds. Campuses are typically composed of numerous residence halls, office buildings, classrooms, and libraries, which lead to a large degree of pedestrian activity at all times throughout the day. Many have viewed college campuses as insulated communities resistant to the larger pressures of society and crime (Smith and Fossey, 1995). As violent criminal victimization rates grew during the 1980s and early 1990s, these fears began to reach college campuses as well (Kelly and Torres, 2006; Sloan and Fisher, 1995).

Since there has been limited research at the school level, research of places with similar characteristics—open spaces and residences—deserves attention. SCP techniques have been applied to various places such as convenience stores, banks, airports, and the like with successful results. Research has found that improved street lighting has resulted in a reduction of crime among both adult and juvenile delinquency along with a decreased fear of crime after dark (Ditton and Nair, 1994; Painter, 1994; Painter and Farrington, 1997, 2001). SCP strategies have been effective at reducing burglaries in residential areas through the use of target hardening and property marking (Allatt, 1984; Laycock, 1991; Popkin et al., 1995; Tilley and Webb, 1994).

Fear of Crime

Fear of crime has been a prevalent topic in criminological research (Hale, 1996). Numerous correlates of fear of crime have been uncovered, sometimes with conflicting results. These include: vulnerability to criminal victimization, prior victimizations, the social environment, neighborhood constructs, gender, age, and race (Chadee and Ditton, 2003; Hale, 1996; Jennings, Gover, and Pudrzynska 2007; Schafer, Huebner, and Bynum, 2006; Sutton and Farrall, 2005). Traditionally, research finds that women, nonwhites, the elderly, the lower class, and prior victims are found to have higher levels of fear of crime.

Fear of crime has also been examined at the college level. Women perceived their risk of campus victimization to be higher than men and were more likely to fear becoming victims of sexual assaults (Fisher, 1995; Jennings et al., 2007). They were more fearful of campus victimization (Fisher, 1995) and perceived themselves as more likely to become victims (Ferraro, 1995). Fisher and Nasar (1992) found that fear of crime on college campuses was highest among areas that offered hiding places for potential offenders. Due to their design, Fisher and Nasar (1992) claim that these areas also have diminished chances of escape for the victim. In this vein, SCP tactics on college campuses would decrease students' fear of crime. Painter and Farrington (2001) found that increased street lighting decreased individuals' fear of crime.

Interaction between Macro- and Micro-level Situational Crime Prevention

Since the emphasis of SCP is on changing structures and the environment, few studies (Fisher, et al., 1997; Wilcox, Madensen and Tillyer, 2007) have acknowledged any effects of SCP at the individual level. Further, no studies have examined the interaction of school SCP on individual student SCP. Research does suggest a possible link between SCP measures and perceptions of crime and safety (Ditton and Nair, 1994; Robinson, 1998; Painter and Farrington,

2001; Tewksbury and Mustaine, 2003; Tseng, et al., 2004; Wilcox, et al., 2007). Particularly, according to a routine activities framework of SCP, changes in the perception of crime due to environmental measures could affect individual SCP behaviors.

Tewksbury and Mustaine (2003) found that specific lifestyles and characteristics were predictive of self-protective behaviors among college students. Such lifestyle behaviors included, but are not limited to: employment, living in a neighborhood with unsupervised youth, frequently travels by foot, and perception of residence as safe. Each of these predictors was significantly related to the use of self-protective behaviors such as the presence of a guardian or carrying mace, knives, or body alarms (Tewksbury and Mustaine, 2003). These findings suggest that changing the environment can alter individual level SCP behaviors or that they may even work in tandem with one another.

Research has uncovered that city-level changes in SCP have resulted in altered behaviors and fear of its residents. Improved lighting has been found to change women's walking routes after dark and decreased their perception of fear (Ditton and Nair, 1994; Painter and Farrington, 2001; Tseng et al., 2004). Robinson (1998) asserts that city areas with improved aesthetics resulted in a decreased perceived risk of victimization. Significant interaction effects have been found between neighborhood level SCP and individual level behaviors (Wilcox, et al., 2007). As the SCP measures at the neighborhood level increased, personal SCP behaviors decreased. Based on previous research, it is then expected that school level SCP will be significantly related to student level SCP such that student level SCP will be less influential on crime and fear among college campuses with high levels of SCP. This research sets out to further investigate the relationships between crime, fear and SCP on college campuses.

Hypotheses

This study seeks to further SCP literature by adding an analysis of its application techniques on college campuses at the student level. It will look at several key factors related to SCP measures and their effects on crime and fear among college students.

Hypothesis 1: College students and campuses that use SCP tactics will experience less victimization (less property crime, violent crime, and overall crime).

Hypothesis 2: College students and campuses that use SCP tactics will be less fearful of crime (less risk of victimization, fear of victimization, and less use of constrained behaviors).

Hypothesis 3: The interaction between school SCP and student SCP will be significant, such that the level of student SCP will have less of an impact on victimization (less property crime, violent crime, and overall crime) for students who attend schools with high levels of SCP.

Hypothesis 4: The interaction between school SCP and student SCP will be significant, such that the level of student SCP will have less of an impact on fear of crime (less risk of victimization, fear of victimization, and use of constrained behaviors) for students who attend schools with high levels of SCP.

Methods

Sample

The data for this study were extracted from surveys conducted by Bonnie S. Fisher, John J. Sloan III, and Francis T. Cullen entitled "Understanding Crime Victimization Among College Students in the United States," which was retrieved from ICPSR. The dataset was obtained from a stratified random sample of 12 four-year postsecondary institutions with an enrollment greater than 1,000 during the 1993-1994 school year. The researchers employed a two-stage sampling design method. In the first stage, all four-year postsecondary institutions in the United States with enrollments of at least 1,000 students were stratified by location (urban, suburban, and

small town/rural) and size (1,000 to 2,499; 2,500 to 9,999; 10,000 to 19,999; and 20,000 or

more). From this stratification, one institution was randomly selected from each stratum.

The demographics of 3,472 students (a 71% response rate) and data regarding

victimization incidents were collected from a random sample using a structured telephone

interview modeled after the National Crime Victimization Survey (NCVS). For the purposes of

this study, only those students who answered questions regarding the variable of individual SCP

will be used (n = 753). A second survey, concerning school-level data, was also collected from

these 12 institutions with a 100% response rate. The researchers questioned directors of campus

security or campus police using mail-back surveys to discover aspects of campus security, crime

prevention programs, and crime prevention services used on campus. Also, mail-back surveys

were used to garner information from directors of campus planning and facilities management

regarding the type of planning and design used for crime prevention. Although the data were

originally collected in 1993-1994, it was chosen for this study based upon the specific items

included. These variables allowed for the inclusion of a variety of SCP factors for both students

and campuses, as well as the inclusion of fear of crime constructs.

Student Demographics

Among the sample, 90.4% (n = 680) of the students were taking classes full-time while

9.6% (n = 72) were part-time. Of the respondents, 14.6% identified as freshmen (n = 109),

16.2% (n = 121) were sophomores, 20.1% (n = 150) were juniors, and 32.1% (n = 240) were

seniors. Further classification identified 15.9% (n = 119) as graduate students and 1.2% (n = 9)

claimed other status, which included certification programs. Of the student respondents, 66.2%

(n = 495) lived off campus while 33.8% (n = 253) resided in campus facilities.

Measures

Student SCP

The operationalization of student SCP behaviors was based on a scale formed by four variables. Each of the variables was based on a four-point Likert scale and reverse coded where "1" represented low use of individual SCP behaviors and "4" indicated high use of SCP behaviors. Example questions included "Since school began, how often have you carried your keys in your hand in a defensive manner?" and "How often have you asked someone to walk you to your destination after dark?" A scale of student SCP behavior was created using factor scores. The scale ranges from -0.88 to 3.57, with a mean of 0.00 and a standard deviation of 1.00 (see Table 1 for a complete breakdown of descriptive statistics). The factor analysis produced a one-factor solution with high factor loadings from 0.609 to 0.771 and accounts for 52.13% of the variance.

Property Crime

Two variables were used to form a scale for property crime using factor scores. The variables were binary and included questions such as "Has something been stolen?" and "Has your vehicle been stolen/broken into?" The questions were coded such that "0" represented no and "1" yes. The property crime scale had a range of -0.55 to 3.39, a mean of 0.00 and a standard deviation of 1.00 (Table 1). The factor scores of the three variables produced a one-factor solution with strong loadings of 0.744. This one-factor solution accounts for 55.43% of the variance.

Violent Crime

Violent crime has been operationalized using a scale of three variables. Questions included: "Have you been assaulted?" and "Have you been robbed?" The questions were coded such that "0" represented no and "1" yes. The variables formed a scale using factor scores. The

scale had a range of -0.29 to 6.14, a mean of 0.00 and a standard deviation of 1.00 (Table 1). A factor analysis of the three variables produced a one-factor solution that accounts for 55.20% of the variance with high factor loadings of 0.743.

Overall Crime

The amount of overall crime was operationalized using the above two created scales of property and violent crime. The scales were created using factor scores with a range of -0.56 to 4.89, a mean of 0.00, and a standard deviation of 1.00 (Table 1). A factor analysis of the two scales (property and violent) produced a second order factor solution with high factor loadings of 0.757. The analysis explained 57.37% of the variance.

Fear of Crime

A main problem of fear of crime research is the operationalization of fear of crime. This study uses an operationalization schema developed by Rader (2004) wherein fear of crime falls under a larger construct called "the threat of victimization." In this model, there are three constructs: (1) cognitive component—perceived risk of victimization, (2) emotive component—fear of victimization, and (3) behavioral component—constrained behaviors. Together, the cognitive, emotive and behavioral components represent a well-rounded measure of fear of crime and will be used to operationalize fear of crime in the following analyses.

To operationalize the student's perceived risk of victimization, a scale was created utilizing five variables. Questions included: "How likely do you think it is that you will be raped or sexually assaulted?" and "How likely do you think it is that your vehicle will be stolen?" A scale was formed using factor scores. Each of the variables in the scale was based on a Likert ten-point scale where "1" indicated not at all likely and "10" very likely. The scale ranges from -0.76 to 7.34, with a standard deviation of 1.00, and a mean of 0.00 (Table 1). A factor analysis

of the five variables produced a one-factor solution with high loadings ranging from 0.585 to

0.885. This one-factor solution accounts for 62.30% of the variance.

Six variables were included in the scale used to operationalize the emotive component of

fear of crime. All of the variables were based on a ten-point Likert scale where "1" represented

not at all afraid and "10" indicated very afraid. Questions included "During the day/night while

you were on campus, how afraid were you about having your property stolen?" and "During the

day/night while you were on campus, how afraid were you about being raped or sexually

assaulted?" An index for fear of victimization was created using the variables and their factor

scores. The scale has a range of -7.44 to 6.16, a mean of 0.00 and a standard deviation of 1.00

(Table 1). A factor analysis of the six variables produced a one-factor solution with high

loadings ranging from 0.670 to 0.931. This one-factor solution accounts for 68.05% of the

variance.

Constrained behaviors have been defined as behaviors individuals avoid to protect

themselves from the threat of victimization; the use of such behaviors is considered to be a

reflection of fear of crime (Rader, 2002). Five variables have been used to operationalize

constrained behaviors. Each of the variables were based on a ten-point Likert scale where "1"

represented definitely not likely and "10" indicated definitely likely. Questions included

"Anytime during the next year, how likely is it that you will engage in the following behaviors:

Regularly drinking 3 or more alcoholic beverages?" and "How likely is it that you will engage in

damaging property that does not belong to you?" Due to the nature of this study, the answers

were recoded in the reverse where "1" represented not likely to avoid behaviors and "10"

indicated a likelihood of avoiding behaviors and will be stated as such in all figures and tables

present. The variables formed an index of constrained behaviors based on factor scores. The

scale ranges from -9.79 to 0.63, has a mean of 0.00 and a standard deviation of 1.00 (Table 1). A

factor analysis of the five variables produced a one-factor solution with loadings ranging from

0.585 to 0.701. This one-factor solution accounts for 43.95% of the variance.

A two-factor solution was produced when a factor analysis was conducted on all 16

items. This two-factor solution accounts for 51.80% of the variance of the factors. The

behavioral items load onto one scale; however, the cognitive (perceived risk of victimization)

and emotive (fear of victimization) items load onto one scale. This should not present a problem,

because research indicates that these components of fear of crime are often multi-dimensional

and overlapping (Hall, 1996; Rader, 2002).

School SCP

According to Clarke's (1997) analysis, there are four categories of SCP tactics. Due to

the scope of this thesis, school level SCP is operationalized using two of Clarke's (1997)

constructs: perceived effort and perceived risk. The first concept, increasing the perceived effort

of crime, was measured using five variables questioning security practices by the college. The

variables were binary questions that included queries such as: "Were campus roads closed to

limit auto access?" and "Was bicycle patrol in use?" Responses to the questions were coded so

that "0" indicated no and "1" indicated yes. These items formed a scale using factor scores. The

index has a range of -1.57 to 1.14, a mean of 0.357 and a standard deviation of 0.873 (see Table

1 for a complete descriptives breakdown). A factor analysis of the scale produced a one-factor

solution with strong factor loadings ranging from 0.717 to 0.836. This solution accounts for

57.00% of the variance.

The second category, perceived risk, was operationalized using three variables

questioning the security practices of the college. The variables consisted of binary questions

where "0" indicated no and "1" represented a yes response. These items formed an index of perceived risk using factor scores. The scale ranges from -2.64 to 0.597, has a mean of 0.139 and a standard deviation of 0.921 (Table 1). A factor analysis of the scale produced a one-factor solution with strong factor loadings ranging from 0.737 to 0.904. This solution explains 68.36% of the variance.

A two-factor solution was produced when a factor analysis was conducted on all 8 items. The solution, representing school SCP, has high factor loadings ranging from 0.691 to 0.866. The two-factor solution accounts for 69.54% of the variance of the factors. All items load onto their assigned scale.

Control Variables

Previous research suggests that certain factors can influence property, violent, and overall crime. As such, variables are included in this study to control for their possible effects. Age, gender, and race have been found to predict property and violent crime and are thus controlled in this study (Stolzenberg and D'Alessio, 2008; Simpson, 2008). Age, gender, race, and prior victimization are factors related to fear of crime and are controlled (Chadee and Ditton, 2003; Jennings, et al., 2007; Schafer et al., 2006; Sutton and Farrall, 2005). According to the student-level data, 57.2% of the sample was male (n = 431). Of the sample, 83.0% (n = 614) of the sample identified as white. The student respondents' ages ranged from 17-53 with a mean age of 23 years and a mode of 21 years. Prior victimization is measured by the question, "How many times has a victimization incident occurred [to you] since August 1993 [beginning of school year]?" The majority of victims, 72.2% (n = 356) only had one prior victimization.

Descriptive Statistics

The following table presents the overall information for each variable of interest. At the student level the descriptives table shows that for most of the variables, the majority of the sample responded to the question. The table shows that the majority of variables are either scale or binary in nature. While each variable of the descriptives table has already been discussed, the all-encompassing nature of the chart helps to view and compare all variables of interest at a single glance. See Table 1 for a complete descriptives breakdown of each variable of interest for this study including control variables.

Table 1: Descriptive Statistics

Variable	N	Mean	Median	Mode	Range	Standard Deviation
Perceived Effort	753	.356	.634	1.14	-1.57-1.14	.873
Perceived Risk	753	.139	.600	.60	-2.64-.597	.921
Student SCP	753	.00	-.393	-.877	-.877-3.57	1.00
Property Crime	655	.00	-.553	-.553	-.553-3.40	1.00
Violent Crime	753	.00	-.295	-.295	-.295-6.14	1.00
Overall Crime	655	.00	-.563	-.563	-.563-4.79	1.00
Perceived Risk of Victimization	731	.00	-.340	-.757	-.757-7.34	1.00
Fear of Victimization	727	.00	-.422	-.422	-7.44-6.16	1.00
Constrained Behaviors	746	.00	.333	.633	-9.79-.633	1.00
Age	747	23	21	21	17-53	5.82
Gender	753	.428	--	Male	0-1	.495
Race	740	.170	--	White	0-1	.376
Prior Victimization	493	1.66	1	1	1-6	1.34

Interaction Term

The potential effect of school SCP with student SCP will also be investigated. To examine this possibility, school SCP was multiplied by student SCP. The dependent variables of property, violent, and overall crime as well as risk of victimization, fear of victimization, and constrained behaviors will then be regressed on this interaction term to reveal any significant effect. The variables that make up the interaction term, as well as the control variables, will be included in these equations. If any of the interaction terms are significant, the relationship will be investigated further by splitting school SCP at the 50th percentile and regressing each

dependent variable on student SCP and control variables for each school SCP subsample. T-tests ($t = (b_1 - b_2)/(SE_1^2 + SE_2^2)^{\frac{1}{2}}$) will then be used to check the significance of any differences between the student SCP coefficients.

Plans for Analysis

As previously outlined, this study sets out to test the relationship between SCP on college campuses and its effect upon crime and personal behaviors and attitudes. This will be done through Ordinary Least Square (OLS) regressions. For all models used, multicollinearity was assessed for using tolerance values and Variance Influence Factors (VIF). In each equation, no tolerance values were smaller than 0.1 and no VIFs were larger than 2.5. As such, multicollinearity does not appear to present a problem (Freund and Littell, 2008).

In the individual analyses, the predictors will be: student SCP, perceived effort and perceived risk (school SCP measures). The outcomes of these analyses will be: property crime, violent crime, overall crime, perceived fear of victimization, perceived risk of victimization, and constrained behaviors. Gender, race, and age will be controlled for in the crime models. Gender, race, age, and prior victimization will be controlled for in the fear of crime models. The following equations illustrate these models:

Results

Table 2 shows the results of the OLS regressions for the three measures of crime. Hypothesis 1 is partially supported. Two of the three corollaries show significant results. Student SCP is significantly related to property crime ($b = .204$, $p < .001$) and overall crime ($b = .186$, $p < .001$); however, not in the direction predicted. In both cases, as a student's use of SCP tactics increases, their likelihood of being a victim of property and overall crime also increases. In both the property and overall crime models, student SCP was the strongest predictor (Beta =

.205 and .186, respectively). Perhaps these results represent a temporal ordering problem, which will be discussed in the next chapter. Across all dependent variables, school SCP (as measured by perceived effort and perceived risk) was not significant. The violent crime model revealed no significant results in relation to SCP. The r-squared for these equations suggests that the property, violent, and overall crime models explain a slight percentage of the variance (2.9%, 1.1%, and 3.2%, respectively).

Table 2: OLS Regression Results for Property, Violent, and Overall Crime

Coefficients	Property Crime[a]			Violent Crime[a]			Overall Crime[a]		
	b	SE	Beta	*b*	SE	Beta	*b*	SE	Beta
Constant	.590**	.200		.656**	.194		.836***	.201	
Perceived Effort	.016	.044	.014	-.029	.042	-.025	-.009	.045	-.008
Perceived Risk	.049	.043	.045	.052	.041	.047	.067	.043	.061
Student SCP	.204***	.050	.205	.090	.048	.090	.186***	.051	.186
Age	-.012	.007	-.073	-.012	.006	-.068	-.015*	.007	-.093
Gender	-.232*	.102	-.115	-.260**	.098	-.128	-.341***	.103	-.168
Race	.086	.111	.030	-.011	.099	-.004	.067	.111	.024
Model Summary									
R-Squared		.038			.019			.041	
Adjusted R-Squared		.029			.011			.032	

*p < .05, **p < .01, ***p < .001, two-tailed
[a]Dependent Variable

Table 3 reveals the results of the OLS regressions for the three components of fear of crime. Hypothesis 2 is partially supported. Perceived risk of victimization revealed two significant relationships. One measure of school SCP, perceived risk, was significantly and negatively related to a student's perceived risk of victimization (b = -.104, p < .05). School SCP tactics resulted in decreased levels of a student's perceived risk of victimization. Student SCP was also significantly related; however, not in the direction predicted (b = .373, p < .001). Students with a high level of SCP behaviors have a greater perceived risk of victimization.

Again these results may represent a temporal ordering problem, which will be discussed in the next chapter. One measure of school SCP, perceived risk, was significantly and negatively related to a student's fear of victimization (b = -.176, p < .001). Greater school SCP predicted less fear of victimization among students. As predicted, school SCP tactics resulted in a decreased fear and risk of victimization among its students. Student SCP was the highest predictor in this model (Beta = .356). Perceived effort—the second measure of school SCP— was not found to be related to fear of crime. The r-squared for the perceived risk of victimization model revealed the predictors explained 16.7% of the variance. The equations suggest that fear of victimization and constrained behavior models explain a slight percentage of the variance (3.0% and 7.9%, respectively).

Table 3: OLS Regression Results for Fear of Crime Components

	Perceived Risk of Victimization[a]			Fear of Victimization[a]			Constrained Behaviors[a]		
Coefficients	*b*	SE	Beta	*b*	SE	Beta	*b*	SE	Beta
Constant	.306	.237		.565*	.258		-.739***	.203	
Perceived Effort	-.035	.057	-.026	.036	.062	.027	-.032	.048	-.030
Perceived Risk	-.102*	.044	-.099	-.178***	.048	-.171	-.005	.037	-.006
Student SCP	.373***	.057	.356	.059	.063	.056	.059	.049	.069
Age	-.019**	.008	-.107	-.015	.008	-.083	.023***	.007	.157
Gender	.058	.118	.027	-.086	.129	-.039	.171	.101	.097
Race	.336**	.117	.122	.013	.127	.005	.427***	.100	.189
Prior Victimization	.048	.033	.061	-.073*	.035	-.094	-.035	.028	-.056
Model Summary									
R-Squared		.179			.045			.093	
Adjusted R-Squared		.167			.030			.079	

*p < .05, **p < .01, ***p < .001, two-tailed
[a]Dependent Variable

The results of the OLS regressions for both the crime and fear of crime models on the interaction term showed that hypotheses 3 and 4 are not supported. In both models, the interaction term of student SCP and school SCP is not significant in predicting crime or fear. Similar to the results previously reported, the same predictors found significant in the above equations were found significant in these regressions as well.

Discussion

This study tested the effects of college students and campuses use of SCP in relation to crime and fear of crime. This research was a test of SCP in a relatively new environment of college campuses, while also presenting a solution to the problem of crime on campus.   This study took a new look at the effects of SCP on three dimensions of fear of crime among college students. The results of the OLS regression tests show mixed support for two of the four hypotheses set forth in this study.

The first hypothesis stated that college students and campuses that used SCP tactics would experience less crime. In particular, the hypothesis stated that property, violent and overall crime would be predicted by student SCP and two measures of school SCP: perceived effort and perceived risk. According to the model, property crime was significantly related to the control variable gender and student SCP. Males were more likely to be victims of property crime. The results found that increased student SCP measures were related to increased property victimization. The results also showed that only the control variable gender was significantly related to violent crime. Males were more likely to be victims of violent crime. Student and school SCP measures were not significantly related to violent crime, contradicting the hypothesis. Overall crime was significantly related to two control variables—age and gender— and student SCP. Younger, male students were more likely to be the victims of property and/or

violent crime. Increased student SCP measures were related to higher overall crime victimizations.

The second hypothesis stated that college students and campuses that used SCP tactics would be less fearful of crime. In particular, the hypothesis stated that perceived risk of victimization, fear of victimization, and constrained behaviors would be predicted by student SCP and two measures of school SCP: perceived effort and perceived risk. Perceived risk of victimization was significantly related to age and race (control variables), perceived effort, and student SCP. Younger, nonwhite students had a higher perceived risk of victimization. Increased student SCP measures were related to a higher perceived risk of victimization. School SCP tactics that increased the perceived risk of an offense to a delinquent were related to a lower perceived risk of victimization. The results showed that fear of victimization was significantly related to the control variable prior victimization and the school SCP measure, perceived risk. A higher fear of victimization was found among students who had less prior victimization incidents. The use of SCP tactics to increase the perceived risk to offenders was related to a lower fear of victimization. Constrained behaviors were only significantly related to the control variables age and race. Older, nonwhite students were more likely to use constrained behaviors.

The third and fourth hypotheses stated that the interaction between school SCP and student SCP would be significant such that students with low levels of SCP would have less of an impact on victimization and fear for college campuses with high levels of SCP. However, the OLS regressions found that this interaction term was not significant in either the crime or fear of crime models. This finding can be explained by the previous regressions for the two models. Both sets of results show that school SCP is not an overly pertinent factor when student SCP is significant.

As hypothesized, student SCP was significantly related to property crime, overall crime, and students' perceived risk of victimization. However, the relationship was not in the direction predicted. It is possible these results represent a temporal ordering issue. The student-level data for this study were collected at one time and surveyed students' experiences and feelings of crime for the previous year. The results showed increases in property and overall crime in relation to increases in student SCP use. It is possible that student SCP use increased because of past victimization occurrences and was not used as a prevention effort.

Lab (1990) found that previous victims of property crimes were more likely to use SCP tactics such as surveillance, burglar alarms and property marking. Tewksbury and Mustaine (2003) found that as a function of routine activities, typical college students are less likely to employ the use of capable guardianship and thus use self-protective behaviors. However, it is necessary to point out that lifestyles change as a function of experiences and prior victimization can affect one's self-protection measures. It is possible these results are due to the relative rarity of victimization, especially in the violent crime models (Hummer, 2004). The majority of the sample had not experienced a prior victimization and thus their perceptions for the use of protection measures may not be heightened. The concern regarding temporal ordering is important in these regards. The use of SCP techniques could be the result of past victimization and fear that resulted in a limited level of subsequent victimization and fear skewing these results.

One measure of school SCP—perceived risk—was significantly related to risk and fear of victimization as hypothesized. These results suggest that school efforts to prevent crime are successful in altering students' perceptions of their safety. Such findings are encouraging and suggest that manipulations of the campus environment by school administrators help students

feel safer on campus. For example, Painter (1994) suggests that lighting, an SCP tactic, could alter the environment and the behavior of the public to reduce fear of crime in a number of ways. Improved lighting can reduce fear of crime by physically improving the environment and increasing one's perceptions of an area (Painter, 1994; Painter and Farrington, 1997, 2001). Increased lighting also increased college students' perception of safety in parking garages (Tseng et al., 2004). Illumination leads to an increase in natural surveillance and improves community confidence. It also produces a positive image of the environment and as the actual and perceived risks of victimization decrease, so does the fear of crime (Ditton and Nair, 1994; Painter, 1994). These findings and explanations are rooted in environmental criminology research and as such, is a direct reflection of all SCP tactics. In this manner, SCP techniques that alter the environment can produce a decreased fear of crime for students.

Similarly, SCP tactics are rooted in routine activities theory and seek to alter offenders' perception of committing a successful crime (Cohen and Felson, 1979; Clarke, 1997). SCP changes the environment and routine activity patterns of individuals. SCP techniques can result in an increase in capable guardians or a decrease in suitable targets. From the offender's perspective, the potential criminal offense has become riskier and more difficult. This increase in perceived risk and effort serves as a deterrent. From the victim's perspective, perceived risk and fear of crime are decreased. This study found a positive relationship among school SCP measures that increased the perceived risk of a crime for an offender and a decrease in fear and risk of victimization among students.

Both measures of school SCP were not found to be a predictor of crime or fear of crime for students. This results in mixed support for the first two hypotheses of this study. Yet, it is possible these results represent the disjunction of testing school SCP tactics against student crime

rates. Due to limitations of data, this study measured school SCP in relation to student crime. School SCP tactics were taken from the school-level and applied to each case individually in this study. However, a second analysis testing school SCP components at the school level would present an overall picture of this prevention technique at work in a large environment.

Limitations and Future Research

One limitation of this study is the sample size of post-secondary institutions used (n = 12) and that due to the scope of this study, only 753 student surveys were utilized. Only using data from 12 colleges represents a shortcoming and a lack of generalizability. Research has shown that demographic variables such as age, gender, and race affect fear of crime (Chadee and Ditton, 2003; Jennings, et al., 2007; Schafer et al., 2006; Sutton and Farrall, 2005) and participation in crime prevention behaviors (Lab, 1990; Tewksbury and Mustaine, 2003). The data used in this study had a fairly normal distribution of gender, but race was skewed towards white participants.

Another shortcoming related to the dataset involves the previous mentioned problem of temporal ordering. Temporal ordering could have an effect at both the school and student level. Particularly, the Jeanne Clery Act of 1998 presents an interesting issue. This act required postsecondary institutions to report the prevalence of crime on their campuses and thus face the issue of victimization. As a result, schools turned towards prevention efforts such as SCP (Sloan et al., 1997). It is possible that the SCP methods studied had already been implemented and affected campus crime rates.

Future research could build upon the principles put forward in this study. It would be interesting to look at the effects of SCP on college campuses in relation to specific crimes rather than the broad categories presented here. The general terms of property, violent, and overall crime do not allow for a precise measure of SCP's effects on specific crimes. Studies have found

support for SCP in relation to particular crimes such as: burglary and robbery (Allatt, 1984; Ditton and Nair, 1994; Hummer, 2004; Laycock, 1991; Poyner, 1991, 1997; Tilley and Webb, 1994), drug crimes (Cheurprakobkit and Bartsch, 2005), interpersonal crimes (Cheurprakobkit and Bartsch, 2005; Ditton and Nair, 1994; Hummer, 2004; O'Neil and McGloin, 2007; Painter, 1994), and street crimes (Ditton and Nair, 1994; O'Neil and McGloin, 2007). As such, it is possible that SCP on college campuses could have varying results on different crimes.

Policy Implications

This research on SCP on college campuses presents the possibilities for numerous prevention implications. College campuses may benefit from structural changes to prevent crime. Particularly, Fisher and Nasar (1992) argue that although campus populations tend to be transient, structural surroundings such as buildings and parking garages are stationary. As such, changes made to these structural dwellings are likely to have long-term effects on crime and fear.

SCP policy provisions that reduce fear of crime among students are important for a variety of reasons. Decreasing fear of crime has been found to result in an increased awareness of victimization on college campuses, the promotion of personal safety practices, and a reduction in crime (Clarke, 1997; Ditton and Nair, 1994; Jennings et al., 2007; Painter, 1994; Painter and Farrington, 2001; Tseng et al., 2004). SCP has a unique advantage on college campuses in relation to fear of crime. The population of students on a college campus typically retains similar demographics (such as age and gender), although it is constantly shifting every few years with an influx of new students. Making changes to stationary structures can alter perceptions of crime and safety for years, making it a cost-effective procedure. Reducing fear of crime can improve quality of life and in this environment, allow college students more freedom on campus (Fisher and Nasar, 1992). These provisions can lead to a reduction in levels of victimization.

In light of the findings of this study for fear of crime and SCP, some prevention suggestions include the following provisions. Increased lighting can illuminate campuses, decrease students' fear of crime, and increase an offender's perceived effort and risk for committing a crime. Similarly, college campuses could use increased surveillance either through surveillance cameras, increased police patrol, or increased pedestrian movement (a result of increased lighting). Blue lights and emergency phones placed strategically around campus paths also lend to SCP ideals. Tidy landscaping that removes extensive shrubbery and reduces potential hiding spots for offenders also serves as a prevention technique. Increased security personnel and the use of access cards for entry would also serve as a SCP tactic.

Finally, this study suggests the use of student SCP tactics. Fisher et al., (1997) stated that students were more likely to use personal measures of SCP on campuses. Students should be made more aware of their surroundings and use their environments to their advantage by learning how to better protect themselves. Colleges can present crime prevention programs and lectures that teach students how to better protect themselves in a given situation.

Conclusion

This research did find significant results in relation to student SCP and property and overall crime as well as risk and fear of victimization. School SCP was revealed as a predictor for two fear of crime components. These findings are important as they suggest the influence of college's crime prevention techniques on their students. This study serves as one of the first to examine the effects of SCP in relation to both the student and college campus. This research was taken one step further to directly observe the effects of this prevention technique on fear of crime. Overall, the results found in these analyses are encouraging and suggest the need for further research in this subject.

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