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OPTIMISTIC BIAS REGARDING CAMPUS VIOLENCE

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ABSTRACT

The study extends the existing optimistic bias literature by being the first to document the perceptual bias within the context of school-based violence. It is also the first of its kind to include both actual experience (with related risks) and vicarious experience (through the media) in a study of optimistic bias. Findings from a survey of students indicate that optimistic bias is an appropriate frame for understanding why students fail to take measures to anticipate or prevent violence in school environments. The study replicates existing findings regarding the impact of personal experience on perceptual bias and extends those findings to vicarious learning via the media. Implications for campaigns and future research are discussed.

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INTRODUCTION

High profile incidences of school violence have gained national attention in recent years. Despite heightened awareness and school-based violence prevention campaigns, violent crime among students has not decreased. According to the CDC (2000), nearly 10 percent of students carry weapons (guns, knives, clubs) to school each month. Of the students participating in the national survey, 14.8 percent had been in a physical fight at school during the last 12 months, 9.5 percent were injured in violent crimes on campus, and 32.9 percent had property stolen or damaged while at school. Prior to the bloodshed in Littleton, 475 Colorado students were expelled for violation of the Gun Free School Act.

Why then has increased awareness of campus-based violent crime not encouraged self-protective behaviors among students and fewer violent incidences in the subsequent years? One promising explanation is optimistic bias (Weinstein 1980). In common terms, the optimistic bias hypothesis suggests that people believe "bad things happen to other people, but not to me." Over the past two decades, more than 100 studies have been published, most with implications for health

prevention campaigns; however, the theory has yet to be applied to perceived invulnerability to violence.

Purposes of the Study

The study serves multiple purposes. First, it seeks to document optimistic bias regarding school-based violence. Next, it seeks to explore the influence of students' experiences on the formation of the perceptual bias. The study is the first of its kind to include both actual experience (with related risks) and vicarious experience (through the media) in the study design.

Optimistic Bias

Individuals' actual risk and their perception of their personal risk are distinctly different. Weinstein and colleagues (1999, 1996, 1980) show that people make comparative risk assessments in an egocentric manner, paying little attention to the risk status of others when asked to determine their own relative risk. Weinstein originally labeled this phenomenon "optimistic bias." In lay terms, individuals believe they are less vulnerable to risks than others. Optimistic bias is a robust finding and has been replicated in a variety of contexts, including HIV/AIDS risk (Chapin, 2000; Ellen, Boyer, Tschann and Shafer 1996), sexually transmitted disease (STD) risk (Chapin 1999; Turner 1993), pregnancy risk (Eldridge, Lawrence, Little, Shelby and Brasfield 1995; Smith, Gerrard, and Gibbons 1997), cancer risk (Aiken, Febaughty, West, Johnson, and Luckett 1995; Clarke, Williams, and Arthey 1997; Fontaine and Smith 1995), smoking risk (Hampson, Andrews, Lee, Foster, Glasgow, and Lichtenstein 1998; Williams and Clarke 1997), substance abuse risk (Hansen, Raynor, and Wolkenstein 1991; Miller 1991), environmental risk (Helweg-Larsen 1999; Weinstein and Lyon 1999) and general health risks (Glanz and Yang 1996; Hoorens 1996).

Of all the published studies, only one (Chapin 1999) included a crime-related context. Findings suggest that urban New Jersey college students believe they are less likely than their peers to be arrested for speeding or other misdemeanor crimes (92 percent said, compared to their peers, it was quite unlikely to happen to them). Chapin argues that speeding is a common occurrence and one that the students were likely to have committed frequently without receiving negative consequences for their actions (a fine or an accident). Like numerous other studies (Helweg-Larsen 1999; Manning 1999; Segerstrom, McCarthy, and Caskey 1993), the study underscores the role of personal experience in the formation of optimistic bias. The current study is the first to consider the perceptual bias within the context of crime victimization.

Personal Experience

Using a 1994 earthquake in California as context, Helweg-Larsen (1999) sought to understand the formation and/or dissolution of optimistic bias among college students. Findings indicate that students who have personal experience with injury or monetary loss due to the earthquake show less optimism about injury in future earthquakes than those with no personal experience of injury or loss. Weinstein (1987) argues this is a common phenomenon that boils down to, "if it hasn't happened yet, it won't happen." While no longer optimistic about earthquakes, Helweg-Larsen's participants maintained their optimistic bias in other areas (including drinking problems, fire, and divorce).

Manning (1996) found similar results among urban pediatric nurses. Nurses with knowledge of their previous exposure to HIV-infected blood overestimate their risk of infection, while a significant optimistic bias is found among nurses who believe they have not been previously exposed to infected blood.

Numerous previous studies report similar findings (Chapin 1999; McCoy, Gibbons, Gerrard, and Sufka 1992; Hardeman, Pierra, and Mannetti 1997; Kulik and Mahler 1987; Langley and Williams 1992; Miller 1991; Moore and Rosenthal 1991; Segerstrom, McCarthy, and Caskey 1993; Weinstein 1989). Certain commonalities emerge across the studies: People with no personal experience with a hazard tend to exhibit optimistic bias. The perceptual bias tends to increase for those with personal experiences in the absence of negative consequences and decrease for those who have experienced negative consequences. It could be argued that personal experience affects optimistic bias or that optimistic bias discourages people from taking self-protective measures or changing risk behaviors.

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Vicarious Experience

Given the consistent findings regarding optimistic bias and personal experience, it is surprising that vicarious experience through the media have yet to be considered in the literature. In a dissertation, Ng (1992) found differences in optimistic bias regarding HIV/AIDS after exposure to 30 second videotaped advertisements and PSAs. Findings focus on speaker characteristics and gender differences, but include greater degrees of optimistic bias by participants exposed to advertisements than by those exposed to the PSAs. The findings are consistent with others that suggest educational campaigns can reduce optimistic bias (Kreuter and Strecher 1995) and a large communication studies literature concerning the media and risk behaviors (Andsager, Weintraub, and Pinkelton 1999; Bakker 1999; O'Donnell 1995; Maibach and Flora 1993; Perry 1980). Considering the amount of time students spend with various media, vicarious experience should be considered in future research. The vast literature on violent content in the media, especially TV, suggests that vicarious experience with violence includes negative consequences. Common findings regarding personal experience, then, suggests that exposure to violent media has the potential to decrease optimistic bias about personal vulnerability to violent crime.

HYPOTHESES

Theory discussed in the previous sections leads to several hypotheses summarized here in the order they will be tested and presented.

Hypothesis 1: People believe they are less likely than others to be the victim of a violent crime (optimistic bias).

Hypothesis 2: Optimistic bias will increase as actual risk experience increases.

Hypothesis 3: Optimistic bias will decrease as media use increases.

Consistent with the existing literature, there is no relationship predicted between optimistic bias and demographic variables.

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METHODS

A small-scale survey was administered to a sample of students between the ages 17 through 41 (M = 19.68, SD = 3.21) in a low-income community in western Pennsylvania. College students are an appropriate sample for the study given the focus on school violence and the existing measures developed for use with college students. It is also an ideal sample for a pilot test for later use with a larger sample of younger adolescents. Surveys were distributed to all of the 750 students on campus, including degree, non-degree, continuing education, full-time, and part-time students. Through a cooperative agreement with faculty, participants received extra credit in courses. Representing all majors and most non-degree programs, 158 students participated in the study. Consistent with the student body, the sample was 56% female and 94% white.

Optimistic Bias

Optimistic bias was measured with a standard instrument designed by Weinstein (1984). The procedure asked students to compare their relative risk of being the victim of a violent crime with a local target peer (my best friend). Following Weinstein's method, comparative risk assessment was measured on a 7-point scale (-3 = "much less" than my best friend, +3 = "much greater" than by best friend). A mean of zero would indicate no bias, either optimistic or pessimistic on the group level. Table 1 summarizes descriptive statistics for this and all continuous measures.

Risk Experience

Consistent with the items on the optimistic bias measure, participants were asked to self-report lifetime risk (Which of these things have you EVER done?) for seven target behaviors (shoplifted or committed other misdemeanor crimes, carried a gun or another weapon, smoked cigarettes, had protected sex (with a condom), had unprotected sex, consumed alcohol, and consumed alcohol to the point of being drunk. The frequency of behaviors was assessed by asking students how many days (of the past 30) they engaged in the seven target behaviors (none, 1-2 days, 3-10 days, 11-20 days, almost every day). The technique is consistent with CDC youth surveys.

With the exception of drinking and drunkenness, frequency measures failed to load to a single factor, so frequency analysis will be limited to individual risks. However, experience (Which of these things have you EVER done?) with all seven target risks were combined to create a measure of risk-taking behaviors; each item was scored 0 = no/1 = yes (range = 0 – 7). This technique is consistent with previous optimistic bias studies involving multiple health risks (Chapin, 2000).

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Vicarious Experience/Media Use

Media use was measured by asking students to indicate how many hours in a typical school day they spent watching TV, listening to music, reading for fun, and surfing the net (descriptive statistics are summarized in Table 1). The first three items were taken from Greenberg, Tokinoya, Ku, and Li's (1989) international study of adolescents' use of the mass media; the fourth item was created to reflect current media use by college students. Students used a 5-point scale to report the number of hours they were engaged in media activities on a typical week day (0 = none, 5 = 5 or more). More than two individual items failed to load to any single factor, so a composite measure could not be created. Analysis is limited to individual media consumption.

Attitude Toward Violent Media

One additional item was used to measure students' attitude toward violent media. Students were asked to respond to a statement (I like violent TV shows) on a four-point scale (0 = definitely disagree, 3 = definitely agree).

Demographics

Students self-reported gender, age, grade-point average (gpa), and living arrangements (on campus, at home with parents, my own apartment or house).

RESULTS

Hypothesis 1 predicted the presence of optimistic bias among the student participants. Because the mean for optimism (-.41, SD = 1.19) on a possible range from –3 to +3 was significantly less than zero, H1 was supported, t (157) = -4.35, p< .001. Specifically, 31.6 percent of the students believe they are less likely than their peers to be the victim of a violent crime; 10.1 percent exhibit pessimistic bias, believing they are more likely than others to be victimized; the remaining 58.3 percent perceive no difference between themselves and others. The presence of optimistic bias in the sample is consistent with previous findings. The large percentage exhibiting no bias may be a product of the media attention to recent violent incidences in school settings or may be attributed to the violence context.

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Table 1. Summary Statistics for Optimistic Bias and Study Variables

	Mean	SD	Range
Optimistic Bias	-.41	1.19	-3 to 3
Shoplift Frequency	.08	.37	0 to 3
Weapon Frequency	.19	.67	0 to 3
Smoking Frequency	.94	1.50	0 to 3
Protected Sex Frequency	.52	.93	0 to 3
Unprotected Sex Frequency	.46	.86	0 to 3

Drinking Frequency	1.16	.96	0 to 3
Drunkenness Frequency	.67	.87	0 to 3
Risk Experience	4.50	2.10	0 to 7
TV Use	1.76	1.31	0 to 5
Music Use	2.50	1.58	0 to 5
Book Use	.72	.76	0 to 5
Web Use	1.35	1.27	0 to 5
Media Attitude	1.63	.90	0 to 3
Age	19.68	3.21	17 to 41

Hypothesis 2 predicted that optimistic bias would increase as personal risk experience increased. Table 2 indicates an inverse relationship between optimistic bias and the number of lifetime risks experienced. The predicted relationship emerged between optimistic bias and the frequency of carrying a weapon to campus over the past 30 days, but not for misdemeanor crimes. H2 is partially supported. Though partially counter-hypothetical, the finding is consistent with the literature. Recall that the direction of the hypothesis is dependent on experience with the risk and positive or negative consequences associated with the behaviors. It was predicted in this case that personal experience would increase optimism, based on the assumption that the risks included are common among college students, but do not usually result in immediate negative consequences. This is the case for the frequency of carrying weapons, but not for the multiple risk (experience) measure. Perhaps students who carry weapons have not yet experienced a violent altercation with them. In contrast, the multiple risk measure included two sexual risks. Students who have experienced pregnancy scares or know someone with an STD would naturally exhibit less bias. Without measuring the outcomes of the personal risk experiences, it is not possible to confirm such assumptions.

Table 2. Zero-Order Correlations Among Optimistic Bias and Experience Variables

	2	**3**	**4**	**5**
1. Optimistic Bias	.21**	-.21**	.20**	-.18*
2. Risk Experience	--	-.12	.06	.04
3. Web Use	--	--	-.00	.11
4. Media Attitude	--	--	--	.01
5. Weapon Frequency	--	--	--	--

Note. Because optimistic bias is indicated by a negative mean, all signs in row 1 should be reversed for interpretation.
*p< .05; **p< .01

Hypothesis 3 predicted that optimistic bias would decrease as media use increased. Similar to the findings with personal experience, Table 2 shows a counter-hypothetical inverse relationship emerged between optimistic bias and web use. The more time spent on-line, the greater the optimism. No relationship between optimistic bias and other media use (music, TV, pleasure reading) emerged. Consistent with previous research, music (M = 2.5, SD = 1.6) remains the medium of choice of students, followed by watching TV (M = 1.8, SD = 1.3), surfing the web (M = 1.3, SD = 1.3), and reading for pleasure (M = .8, SD = .7). The predicted relationship between attitude toward violent TV and optimistic bias suggests this may be the case. H3 is partially supported.

Standard multiple regression was used to identify the best predictors of optimistic bias. The results are shown in Table 3. Analysis of residual plots indicates that assumptions regarding normality, linearity, and homoscedasticity were met.

The absence of intercorrelations among predictor variables is interesting to note, and all significant correlates contribute to the model in Table 3. While Beta differences are slight, media attitudes appear to be the strongest predictor of optimistic bias. The model suggests that attitude toward or preferences for individual media is a better measure than time spent with the media. While the model supports the addition of vicarious experience as an influence on optimistic bias, previous risk experience remains a significant predictor.

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Table 3. Summary of Linear Regression Analysis for Variables Predicting Optimistic Bias

	Optimistic Bias		
	Adj r^2 = .102 N = 159		
Predictor	**B**	**SE B**	***B***
Media Attitude	.24	.09	.19**
Risk Experience	.10	.04	.18**
Web Use	-.16	.07	-.17**
Weapon frequency	-.29	.13	-.16*

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

Consistent with the literature, there is no relationship between optimistic bias and age, GPA, or living arrangements. Although a few studies have sought out such relationships, they rarely

emerge. Weinstein (1987) argues that demographics are unrelated to the perceptual bias. Because the current study is the first of its type to use violence victimization as context, it is not surprising that one of the demographic variables collected, gender, did yield a significant mean difference. Women exhibit greater degrees of optimism (M = -.60, SD = 1.1) than men (M = -.17, SD = 1.3) regarding the likelihood that they would become the victim of a violent crime. This distinction is consistent with CDC (2000) statistics; male students are much more likely than female students to be involved in physical fights at school with or without weapons.

DISCUSSION

The study was designed for multiple purposes. First, it was the first to document optimistic bias regarding school-based violence. While the predicted mean difference emerged, it is equally or more interesting to note the high percentage of participants that did not perceive a difference between themselves and their peers in the possibility of being the victim of a violent crime. National media attention to violent crimes in schools across the country, in the news media in particular, may be having a positive impact on student audiences that often elude educational campaigns. The headlines are screaming "it could happen to you," and students seem to be receiving the message. Given the relationship between optimistic bias and self-protective behaviors, this is good news indeed.

Next, the study explored the influence of students' personal experiences on the formation of the perceptual bias. The findings were consistent with the existing literature, but again, the differences here may be more interesting than the similarities. Students are already carrying weapons for some reason, perhaps the perception of a hostile or violent environment. Personal experience fails to reduce optimism in the absence of negative outcomes. In the case of violence, one hopes for a way to reduce the perceptual bias without suffering bodily harm. That way may come in the form of vicarious experience via the media.

The study was the first of its kind to include both actual personal experience and vicarious experience. The findings suggest that students can and do "learn" from the media. The finding is a hopeful one for formal campaigns and non-traditional intervention attempts through popular music and the Internet.

Failure of multi-item measures of both personal and vicarious experience to load onto single factors suggests the need for refinement for future studies. Because different media serve different functions for different people in different contexts, simply counting hours spent with the media is sorely inadequate.

Limitations

Like its predecessors, the current study is based on a convenience sample of college students. Emulating the foundation of the literature allows for comparisons across studies, but also recreates problems critiqued elsewhere in the literature (Weinstein 1987). The study attempted to address one of the problems by inviting an entire campus to participate, versus requiring

participation of entry-level psychology students. Gains made from this procedure were unfortunately balanced with a low response rate. The college student sample was selected for ease of comparison with the existing literature, due to the exploratory nature of most of the hypotheses. The counter-hypothetical results suggest interesting new directions for future research, but must be interpreted with caution. Risk measures should include consequences (positive vs. negative) of behaviors, not just experiences. The current study is best thought of as a pilot for a larger study with a younger randomly selected sample.

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