



Exploring school rampage shootings: Research, theory, and policy

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ABSTRACT

This paper examines US school rampage shootings, focusing on the period from the late 20th century to the present. School rampage shootings are thought to be distinct from other forms of violence because of the relatively safe rural setting in which most of these events occur, the lack of specified individual targets, and the number of deaths involved. While this type of violence seems to have spiked in the mid-1990s, school violence in general and school shootings in particular have occurred throughout the history of formal education. Research shows that certain elements of school rampage shootings are unique, while others do not distinguish them from more common forms of violence. For the most part, theory development is still nascent, with the most advanced explanations relying on psychological factors. Finally, interventions have generally been guided by situational crime prevention rather than theories about why violence occurs in school. This paper argues that more research is needed before firm policy conclusions can be made.

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1. Introduction

Social science researchers have increasingly focused on school shootings in rural and suburban America. Since the mid-1990s, Americans have come to view schools as places of potential violence (Kohut, 2000; Midlarsky & Klain, 2005). This has led to an unprecedented focus on protecting and safeguarding schools (Simon, 2007). In the 1990s, several landmark events shocked the nation not only in their violence but also because of the relatively suburban, middle class locations in which they occurred. The media reaction to these events implied that America was suffering an epidemic of school violence and that schools were no longer safe havens for children (Fox & Burstein, 2010; Goode & Ben-Yehuda, 2009; Luke, 2008). While this reaction may have been exaggerated, school violence, and school shootings in particular, arose as a

central focus of research and debate during the last twenty years.

Recent research has focused on school shootings as a media-initiated “moral panic” (Burns & Crawford, 1999; Goode & Ben-Yehuda, 2009), arguing that school shootings are not a cause for concern, or at least not as much as the media leads us to believe. Less is known about the reasons surrounding these events and the attempts to prevent such shootings. Perhaps because of this lack of research, there are few reviews of the literature to help academics and practitioners make sense of this phenomenon of school shootings—something so many wish to better understand.

The purpose of this paper is to review research on school shootings in America. The paper discusses the history of school violence, and theory and policy developments that have arisen in recent years in response to school shootings. This paper is organized into four major sections. The first section provides historical context and trace changes in school violence and school shootings from the early 20th century to the present. The second major section reviews empirical research focused on school shootings, much of it relatively recent. The third section discusses prominent

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theories advanced to explain school shootings. The final section reviews policies formed to address school shootings and the impact these policies have had. The conclusion points to directions for future research.

2. The historical and current context of school violence

The history of school violence and school shootings is characterized both by continuity and change. In terms of change, violent school incidents have seemingly evolved in the last 20 years into a different and more deadly form. From the mid-1990s to the present, an unprecedented number of school shootings occurred in which students carried deadly weapons to school and opened fire on fellow students or faculty members. Since 1996, nearly 60 school shootings have taken place in American schools, resulting in hundreds of deaths. In addition, what are called “rampage” shootings have seemingly increased, which are differentiated from the majority of school violence incidents that involve individual disputes.

School violence in general has occurred throughout the history of formal education, though the issue of rampage or mass killings is relatively new. Certain scholars have suggested that schools are actually safer in modern society than at times in the past, especially considering documented use of corporal punishment by teachers from colonial period until the 20th century (Midlarsky & Klain, 2005; Petry, 1984).

In the 20th century, schooling became a mainstay in children’s lives. Before 1900, education across America was less formal and somewhat disorganized. Perhaps as a result of an increasing concentration of youth in schools, the type of school violence changed in the 20th century (Casella, 2001; Midlarsky & Klain, 2005; Rubel, 1978). Student-organized protests or riots became more commonplace and were sometimes violent (Midlarsky & Klain, 2005). In addition, since the early 20th century, isolated acts of extreme violence have been recorded. For example, in 1927, Andrew Kehoe walked into a Bath, Michigan primary school and killed 45 people, including 38 school children (Brezina, 2008; Kleck, 2009).

Researchers argue that student unrest and violence increased in America following World War II (Casella, 2001; Rubel, 1977, 1978). Rubel (1978) notes that before 1950, few schools required security measures such as school resource officers; by 1970, many schools had them. Students became politically active at this time, joining social movements relating to racial segregation and foreign military engagements, such as the 1970 Kent State University incident when national guardsmen opened fire on student protesters, killing four and wounding nine (Lewis & Hensley, 1998). Such violence was rare during these protests, however.

In the mid-1970s, systematic data on school violence became available to researchers, allowing more scientific estimates of trends and comparisons. In 1976, the Safe Schools study collected data on 31,373 students and 23,895 teachers in primary and secondary schools across the US (ICPSR, 2002). The study reported very small proportions of teachers and students being attacked—only 2% of

students in cities and 1.6% of students in rural schools (NIE, 1978, cited in Gottfredson & Gottfredson, 1985).

Overall, violent school incidents of any type appeared to increase during the 1980s until the early 1990s, when they began a steady decline. According to the National Center for Education Statistics report, Indicators of School Crime and Safety (Dinkes, Kemp, & Baum, 2009), rates of violent crime in schools have fallen from 13 per 1000 students in 1994 to 4 per 1000 students in 2007, a decrease of nearly 70%. According to the Centers for Disease Control (CDC, 2008), deaths from school violence decreased from 1992 to 2006, at which point they stabilized. Surprisingly, this report also indicated that, contrary to most trends, violent school deaths involving multiple victims increased during this period. One factor related to this increase was the rise in school shootings, particularly the incidence of multiple victim, or “rampage” shootings.

Historically, only isolated incidents of multiple-victim school shootings occurred before the recent spate of attacks in the mid-1990s (Langman, 2009; Midlarsky & Klain, 2005). In fact, one of the first recorded school shootings happened as early as 1956, when Billy Ray Prevatte brought a .22 caliber rifle to Maryland Park Junior High and shot three teachers. Two other attacks took place in 1966, one at the University of Texas and the other at Grand Rapids High School in Minnesota (Lieberman & Sachs, 2008). In the 1970s, several school shootings occurred. In 1974, Anthony Barbaro murdered three people at his high school in New York. In 1979 just outside of San Diego, Brenda Spencer opened fire on people standing outside an elementary school (Fast, 2008). In the late 1980s, school fatalities increased, occurring mostly in urban schools and involving individual disputes with single victims (Moore, Petrie, Braga, & McLaughlin, 2003). Yet in the 1990s, school shootings seemed to change in form. The media began reporting unprecedented numbers of multiple victim attacks in rural and suburban schools that did not involve individual or gang disputes (Goode & Ben-Yehuda, 2009; Langman, 2009; Moore et al., 2003; Muschert, 2007; Verlinden, Hersen, & Thomas, 2000). This led to massive media coverage and expanded research attention. It is to this topic and research that I now turn.

3. Rampage school shootings: research findings

We have established no real motive for the shooting, except people indicate that the suspect was mad, and we don’t know if he was mad for any particular reason

Lt. Jerry Lewis, San Diego Police Dept., on a 16-year-old school shooter (CNN, 2001)

Several landmark school shootings occurred in the mid-1990s that at first blush appear distinctly different than the type of violence that characterized schools for much of their history. Some have called these incidents school “rampage” shootings (Moore et al., 2003; Muschert, 2007; Newman, Fox, Roth, Mehta, & Harding, 2004). These shootings are defined by several factors, including the involvement of current or former students; and multiple victims, which often appear to have been chosen at random (Newman et al., 2004: 50). Furthermore, many of these incidents

ended in the death of the shooter(s) or at least appeared to be linked to the perpetrators' desire to die. The vast media coverage given to these events creates the impression that there is a school shootings "epidemic" that is still ongoing, creating something of a "moral panic", or a socially constructed crisis that may not reflect reality (Burns & Crawford, 1999; Goode & Ben-Yehuda, 2009).

The rash of school rampage shootings in the 1990s includes attacks in West Paducah, Kentucky; Jonesboro, Arkansas; Pearl, Mississippi; Edinboro, Pennsylvania; Bethel, Alaska; Littleton, Colorado (Columbine); Conyers, Georgia; Santee, California; Red Lake, Minnesota; Nickle Mines, Pennsylvania; Blacksburg, Virginia; Baton Rouge, Louisiana, and DeKalb, Illinois. All of these events involved multiple victims on school property. Research focuses on several characteristics of school rampage shootings that seem to set them apart from most American acts of violence, including: the demographic profile of the shooters and schools and the lack of a specific target. In addition, researchers point out, that these particular incidents have increased in recent years.

3.1. Shooter and school profile: a "change" in violent predators?

Although the profile of school shooters is heterogeneous, research reveals several similarities in the perpetrators of rampage events. For example, nearly all are middle to lower middle class white males (Kimmel, 2008; Kimmel & Mahler, 2003; Muschert, 2007; Verlinden et al., 2000). One case involving a female offender occurred when Brenda Spencer attacked an elementary school near her house. This case is unique in terms of rampage shootings, however, because the perpetrator did not attend the target school (Fast, 2008). In fact, research has begun to focus more on the "gendered" nature of school violence in general and school shootings in particular (Danner & Carmody, 2001; Kimmel, 2008; Newman et al., 2004).

Recent research attempts to psychologically profile school shooters, resulting in the media overlooking the similarity in social characteristics of the offenders (Danner & Carmody, 2001; Kimmel & Mahler, 2003). From a criminological perspective, the perpetrator characteristics delineated above are surprising because they contradict general offender trends (McGee & DeBernardo, 1999; Schiele & Stewart, 2001). Studies show that violence is disproportionately concentrated in minority and lower class populations (Anderson, 1999; Sampson, Morenoff, & Raudenbush, 2005). The involvement of middle class shooters in middle class areas rather than inner city populations may explain the media saturation that makes the incidence of such events appear more prevalent than they are (Goode & Ben-Yehuda, 2009; Luke, 2008).

The suburban locations of school rampage shootings are noteworthy, as research demonstrates that school shootings tend to occur in suburban or rural locations, which are often marked by a lack of overall crime. Luke (2008) notes that the Virginia Tech shooting surprised many because "it took place in [a] basically peaceful college town with very little crime, few murders, and no sense of everyday violence" (p. 9). Research on recent school rampage

shootings consistently finds they occur in relatively safe rural or suburban areas (DeJong, Epstein, & Hart, 2003; Fox, Roth, & Newman, 2003; Harding, Mehta, & Newman, 2003; Newman et al., 2004). These findings run counter to most research on youth violence, which demonstrates they are typically concentrated in areas of disadvantage (Anderson, 1999; Sampson, 1987; Sampson et al., 2005). However, it should be noted that several characteristics of school rampage shooters – male, victim of harassment, mental illness – are similar to common characteristics of other violent juvenile offenders (Farrington, 2007).

3.2. Lack of specific individual target

One of the major characteristics of rampage shootings, according to Newman et al. (2004), is that the target is generally symbolic in nature. In other words, what matters in these instances is not exacting revenge on particular people, but to make a statement with violence—it may not matter who the ultimate victims are. This is in contrast to other types of inner city school violence, which often involves two or more individuals with specific grievances toward one another (Casella, 2001; Kimmel & Mahler, 2003; McGee & DeBernardo, 1999; Muschert, 2007; Newman et al., 2004). In this sense, school rampage shootings resemble workplace mass killings, which also often include a "symbolic" target.

3.3. Prevalence

Research on school safety has increased in recent years due to several independent information sources that provide data on US school victimizations. For example, the National Crime Victimization Survey includes a supplement for school victimizations in 1989, 1995, 1999, 2001, 2003, and 2005. Fatal victimization data is collected in separate surveys by the Center for Disease Control and the Department of Education (Indicators of School Crime and Safety and the School Associated Violent Death Study; CDC, 2008; Lebrun, 2009). In addition, several groups independently collect and report data from various sources, such as National School Safety and Security Services. What these sources converge to show is that overall, the chances of a student being killed at school is extremely remote (Lebrun, 2009).

According to the most recently available statistics, only 24 homicides occurred at school in the 2008–2009 school year at elementary, middle and high schools (Robers, Zhang, Truman, & Snyder, 2010). There does not appear to be much fluctuation in homicides at schools over the last few years, but the incidence has decreased somewhat. For example, there were 36, 43 and 58 homicides during the 2008–2009, 2007–2008, and 2006–2008 school years, respectively (Dinkes et al., 2009).

While school shootings and homicides have remained constant over the last 20 years (Dinkes et al., 2009), some report that school rampage shootings increased substantially in the last decade of the 20th century (Newman et al., 2004). Since the 1990s, there has been a downturn in rampage shootings (Newman et al., 2004). However, in recent years there have been multiple incidents of

students carrying guns to school with the intention of committing mass murder. In the few weeks after a 2001 California school shooting, 16 students across the state were “detained” for making threats or carrying weapons to school (CNN, 2001). A recent study investigates “averted” school shootings, uncovering 13 incidents at four schools from 2001 to 2003 (Daniels et al., 2010). It is safe to assume that these investigations represent only the tip of the iceberg, as no systematic data exists to document planned or averted school shootings.

4. Understanding rampage shootings: explanation and theory

I want to tear a throat with my own teeth like a pop can. I want to gut someone with my own hand, to tear a head off and rip out the heart and lungs from the neck. . . show them who is god.

Eric Harris, Columbine shooter (Langman, 2009)

Perhaps because of the rarity of school shootings and because researchers have only begun to focus on them in the last ten to fifteen years, before the 1990s few theories on school rampage shootings existed. Only recently have scholars begun to develop more sophisticated theories to account for school shootings, thus making a systematic comparison of theories difficult. Existing explanations or theories generally fall within three major categories: risk factor approaches, psychological theories, and cultural/sociological theories.

4.1. Risk factor approaches

Perhaps sparked by societal-wide changes in methods of social control, certain researchers have begun to focus on compiling lists of factors that can be used to predict crime (Farrington, 2007; Feeley & Simon, 1992; Lipsey & Derzon, 1998; Loader & Sparks, 2007; Shader, 2001; Simon, 2007). In part, this focus is based on a medical model, in which specialists are able to use factors known to predict adverse outcomes for prevention purposes (Shader, 2001). The purpose of developing risk factor models is, therefore, to guide policy. These approaches also help to explain criminal behavior.

In the midst of the school shooting increase of the 1990s, the Federal Bureau of Investigation completed a report detailing a multitude of risk factors that may lead to a student attempting to kill classmates and teachers. The report was careful to point out that it was not a psychological “profile” (O’Toole, 1999, p. 1). Instead, it detailed “warning signs” that indicate whether a student who has made a threat should be regarded seriously. These warning signs or risk factors covered four different domains, including personality, family, school, and social dynamics (Lebrun, chapter 3).

Verlinden et al. (2000) report on a study of various risk factors associated with perpetrators in nine school shooting case studies. The sources for this study include several organizations, such as the Secret Service, the National Association of School Psychologists, the FBI, the National School Safety Center, and the American Psychological Association.

Their study suggests that risk factors for school shootings are likely to be different than risk factors for youth violence in general. They conclude that there is no one profile that fits all school shooters. In fact, actuarial prediction instruments are notoriously poor as prediction devices for school violence (Krauss, 2005).

As Fox and Burstein (2010) point out, these risk factor approaches are generally “atheoretical” (p. 68), and do not help us understand why shooters decide to attack a school, or how individuals come to possess certain risk factors. In other words, risk factors seek to explain who school shooters are, rather than why or how.

4.2. Psychological theories of school shooters

Psychological theories represent perhaps the most common scholarly class of explanations developed to understand school shootings. By far the most prevalent psychological theories developed to explain school shootings are those that involve mental illness. Case studies of school rampage shooters reveal very troubled youths. Some, perhaps most, suffer from severe depression (Harding et al., 2003; Langman, 2009; Sullivan & Guerrett, 2003). Others have noted that while mental illness is rarely recognized prior to the shootings, many of the perpetrators are diagnosed after the fact (Newman et al., 2004). Newman et al. dismiss mental illness as a “straightforward predictor” of school killings, however, because of the increasing number of youths diagnosed with psychological afflictions (p. 58).

Nonetheless, the pattern of mental illness found in rampage shooters is striking. A complex and thoughtful typology of school shooters was developed by Peter Langman in his analysis of eight school shooters (2009). He presents three types of school shooters: psychopathic shooters (Eric Harris, Columbine; Andrew Golden, Jonesboro, Arkansas); psychotic shooters (Dylan Klebold, Columbine; Michael Carneal, West Paducah, Kentucky; Andrew Wurst, Edinboro, Pennsylvania; Kip Kinkel, Springfield, Oregon; Seung Hui Cho, Virginia Tech); and traumatized shooters (Mitchell Johnson, Jonesboro, Arkansas; Evan Ramsey, Bethel, Alaska; Jeffrey Weise, Red Lake, Minnesota).

Psychopathic shooters feel no emotional connection to other humans; they are unable to feel guilt or remorse. They tend to enjoy inflicting pain on others. For example, Andrew Golden enjoyed torturing small animals, especially kittens (Fast, 2008; Newman et al., 2004). Eric Harris’s personal journals are filled with hate-ridden rants detailing his desire to kill and rid the world of useless humans (Cullen, 2009). Psychotic shooters suffer from a break with reality. Dylan Klebold’s writings demonstrate a profound sense of being different—being alien (Langman, 2009). Other shooters seemed not to understand the reality of what they were doing. Some heard voices in their heads.

The third type of shooter is a person who has experienced emotional, physical or sexual abuse. Similar to strain theory in criminology (Agnew, 2006), these individuals appear to have suffered a stressor that led to the shooting (Levin & Madfis, 2009, discussed below). For example,

Mitchell Johnson, who was continuously abused by his father, learned just before he and Andrew Golden attacked their school that he may have to move to live with his father (Newman et al., 2004).

Jonathan Fast has also offers a psychological explanation of school rampage shootings. His theory, while focusing on mental illness, introduces a new dimension: the ceremony. He argues that the school rampage shootings are distinct because they are “theatrical, tragic and pointless” (2008, p. 11). His theory suggests that ceremonial violence is a result of several factors: mental illness, perhaps brain damage; social isolation; and suicidal, but in a ceremonial fashion. The ceremonial aspect of these events is highlighted by Fast. These events seem to be attempts to gain status and prestige. They are a “throwback to something very ancient and primitive, where the supplicant plays the part of a god, and indulges in forbidden or privileged activity prior to his own execution or banishment from the tribe” (p. 19; Katz, 1988, ch. 8).

Suicidal intentions seem to be a consistent theme in all of the school shootings reviewed for this paper. Many of the shooters want to commit suicide but either cannot bring themselves to do so or want to make a spectacle of the event (Fast, 2008; Langman, 2009; Newman et al., 2004). Anthony Preti (2006) calls this suicide with hostile intent. Interestingly, he links this practice to ancient ceremonies in which suicide was accomplished alongside revenge (Fast, 2008). In a sense, rampage shootings have a flavor of the “ritual” with a goal of “cultural recognition” that most research ignores (Preti, 2006, p. 547).

The notion that rampage school shootings are linked to homicide-suicide events is intriguing. Like homicide-suicides, many school shooters seem to have a tremendous amount of hostility they wish to release in one final act. Hurting others as a way of pointing the spotlight on these individuals’ plight may be a common theme in both phenomena. Indeed, McGee and DeBernardo (1999) discuss the hypothetical case of the “classroom avenger”. This person is a candidate for a school rampage shooter. Importantly, they describe this person as “a depressed and suicidal, usually Caucasian, adolescent male from a rural, suburban or small community who perpetrates a non-traditional multi-victim homicide in a school or classroom setting” (McGee & DeBernardo, 1999, p. 1). Thus suicide and rampage shootings may be inextricably linked.

4.3. *Cultural or sociological theories/explanations*

Researchers, experts, and media outlets suggest that the availability of guns is a contributing factor to school rampage shootings. While it is unquestionable that the ease with which guns can be acquired by youths contributes to the increase in school shootings, gun availability is only part of the story. Newman et al. (2004), for example, argue that while the number of guns has increased, the number of people with guns has not increased in recent years. However, Larson (1995) demonstrates convincingly the cultural attitude that “guns solve problems” in America; such a cultural attitude may be linked to school shootings.

Violent media, such as movies and video games, is also often considered a cause of school shootings. Social commentators have argued that the increasing violence in the media leads to violent fantasies on the part of children. Studies have shown that violent media does produce an increase in aggression (Anderson and Bushman, 2001; Browne and Hamilton-Giachritsis, 2005; Reiner, 2007). Case studies of school rampage shooters also reveal that the perpetrators often enjoyed violent movies and video games (Anderson & Murphy, 2003; Cullen, 2009; Langman, 2009; Larkin, 2007; Newman et al., 2004). For example, the Columbine killers regularly played a game called “Doom” (Cullen, 2009) and Seung-Hui Cho played “Counter-Strike”, a military style game (Benedetti, 2007). However, considering the widespread popularity of violent media (Anderson and Bushman, 2001), other factors are likely needed to explain school shootings. Further, Ferguson (2008) argues that the methodological problems in the literature on video games and violence preclude firm conclusions.

Some social commentators argue that bullying is a cause of school shootings. A logical and perhaps safe explanation for why youth want to attack fellow students is that they had been relentlessly tormented by their peers. Research by Vossekuil, Fein, Reddy, Borum, and Modzeleski (2002) finds that a large majority of school shooters are the victims of bullying (Larkin, 2007; Newman et al., 2004). Vossekuil et al. argued that in certain instances, bullying may have led to feelings of frustration that eventually led to the school shooting event (2000). In a study of 15 school shootings, Leary, Kowalski, Smith, and Phillips (2003) find that “social rejection”, including bullying, was a key in 13 incidents. Yet research shows that the relationship between bullying and school shootings is not altogether clear. In fact, certain of the school shooters were bullies themselves, and others seemed quite popular among their peers (Fast, 2008; Langman, 2009; Newman et al., 2004).

A fourth factor identified by researchers attempting to explain school rampage shootings is the social-psychological notion of imitation. There is evidence of this so-called “copycat” factor, in which youth attempt to mimic high profile school shootings (Fox & Burstein, 2010; Newman et al., 2004; Sullivan & Guerett, 2003). One school shooter, T.J. Solomon, wrote after his attack, “I felt the next thing left to release anger would be through violence. I had gotten the idea from the shooting at Columbine High School on April 20” (Sullivan & Guerett, 2003, p. 51). The copycat effect seemingly played a role in the spike of school shootings in the 1990s. As Fox and Burstein point out, “[n]ot only are children and adolescents exposed to the idea of getting even for perceived injustices through violence, but they are taught that such violence can earn them celebrity status. Indeed, more than the media coverage itself, the notoriety that popular culture showers upon school shooters teaches our youth—especially alienated and marginalized teenagers—a lesson about how to get attention and how to be in the spotlight” (Fox & Burstein, 2010, p. 81; Larkin, 2007). Interestingly, research is unclear whether high profile mass shootings impact other similar crimes. For example, Stack (1989) finds that high profile mass shootings did not predict increases in homicide.

However, high profile mass shooting/suicides did. Other research is necessary to flesh out the imitation effect, including qualitative work examining the motive of shooters or would-be shooters.

In a sense, the notions of imitation and the influence of the media are related to social learning, which has been applied to criminal behavior by Akers (1973, 1998). Social learning is also concerned with the effect of peers on behavior; this factor appears to be particularly relevant to school rampage shootings as certain of the cases involved pairs of individuals who may have played a role in convincing each other to engage in the act. However, many cases involve isolated and estranged individuals (Table A.1), and social learning theory does not appear as applicable to these instances.

Masculine identity is a fifth cultural factor that researchers have pointed to as an explanation of school shootings. According to the sociologist Michael Kimmel, school shooters demonstrate their hegemonic masculinity through violence. Often, the rampage shooters have been denied traditional male status, perhaps having their sexuality questioned (Kimmel, 2008; Kimmel & Mahler, 2003). Interestingly, Kimmel notes that most of the school rampage shootings have taken place in “red” or conservative states with a particular emphasis on masculinity and gun culture. Kimmel and Mahler (2003, p. 1449) argue, “[h]omophobia – being constantly threatened and bullied as if you are gay as well as the homophobic desire to make sure that others know that you are a ‘real man’ – plays a pivotal and understudied role in these school shootings”.

Katherine Newman et al. (2004) have developed a comprehensive, multi-pronged theory of school shootings. Their theory consists of individual level and school level factors. In particular, they present five “necessary but not sufficient” factors that combine to produce school shootings: The individual views himself/herself as a social outcast, the individual has a psycho-social problem, but not necessarily mental illness, cultural scripts that support violence as problem solving must be available, the school must have poor surveillance systems to prevent potential shooters, and guns must be easily accessible (pp. 229–230). Newman et al. test the theory by comparing its elements with recent rampage shootings and conclude that it fares well. Newman et al. do not, however, spell out a causal model detailing how each of the factors relate to one another or how these factors arise. Thus, their theory is, simply a constellation of factors that contribute to school shootings.

In sum, it appears that while attempts at explaining school shootings have proliferated in recent years, few researchers have developed systematic theories. For the most part, single factors have been identified and scrutinized to the exclusion of other important variables. Thus it is not yet clear whether school shootings represent unique incidents that warrant separate explanations, or that traditional criminological theories can account for such events. For example, traditional criminological theories may account for why these youth commit crimes in the first place, which demonstrates continuity with respect to criminological theory, and, psychological status or masculinity theories may be variants of criminological strain

theory (Agnew, 2006). In fact, a promising new theory combines strain, control, and routine activities theory to explain school shootings (Levin & Madfis, 2009). According to this theory, events or factors combine in a cumulative fashion ultimately ending in a “school massacre”. Thus, acute and chronic strain and lack of control coupled with opportunity may lead an individual to a school rampage shooting.

5. Policy implications and programs

Based on the largely qualitative and relatively recent research on school rampage shootings, researchers have made several policy recommendations to help improve school safety. This section reviews policy recommendations and policies that have been implemented in response to the threat of school violence in recent years. It also examines the scant literature on policy effectiveness in this area.

5.1. Policy recommendations from research

The policy recommendations of researchers and specialists focus on several factors. First, some argue that schools need training in recognizing threats and threatening students (Borum, Cornell, Modzeleski, & Jimerson, 2010; Fast, 2008; O’Toole, 1999; Trump, 2000; Trump & Lavarello, 2003). A consistent finding among most school rampage shooters is that they made mention of a possible attack to numerous students before the event (Fast, 2008; Newman et al., 2004; Vossekuil et al., 2002). The FBI’s threat assessment report assists administrators in distinguishing between serious and non-serious threats (O’Toole, 1999). Recognizing and acting on threats may prevent many tragic events. The US Secret Service concluded in a 2002 report that programs designed to improve communication between staff and students may help identify serious threats (Vossekuil et al., 2002). Because school shooters often discuss their plans beforehand, encouraging students to report threats may be as effective a tool as any to reduce school shootings. Newman et al. (2004) suggest attempting to change the culture of some schools in which athletes are given praise at the expense of all other students and where there is a lack of alternate models of masculinity. They further argue that the practice of maintaining isolated records hampers school officials’ ability to gather complete information on any one student.

Researchers and experts also recommend policies to reduce the opportunity for violence. For example, some suggest that schools should place an emphasis on controlling access to guns and increasing security measures to improve school safety (Fast, 2008; Newman et al., 2004; Trump, 2000). May (2004) proposes widespread efforts to disarm juveniles in society in general to prevent carrying and possibly using guns at school, thus placing the burden on the community and family to reduce school violence (Langman, 2009). Unfortunately, Fox and Burstein report that schools have not had much success with efforts to keep guns out of schools because of political pressure (2010).

Trump (2000) also extends the principles of situational crime prevention to the school, arguing that violence can be reduced in schools by ensuring that the common areas, parking lot placement and use of “line of sight in hallways” do not create opportunities for would be attackers (Trump, 2000 p. 78; Fox & Burstein, 2010). Fox and Burstein argue that school design should include building chain link fences around campus, cleaning up graffiti and reducing dark areas (Fox & Burstein, 2010).

5.2. Existing policies

As mentioned above, most of the implemented policies or strategies focus on reducing the opportunity for school shootings (Trump, 2000). These strategies include hiring School Resource Officers, using metal detectors, and strict “zero-tolerance” policies.

School resource officers (SROs) have become a mainstay at many middle schools and high schools across America. According to the 2007 National Crime Victimization Survey, school supplement, nearly 69% of students stated that their school had a security guard or other law enforcement personnel (Fox & Burstein, 2010). While the effect of SROs on school rampage shootings is difficult to quantify given the small numbers, limited research has indicated that SROs do decrease school violence in general (Johnson, 1999; Newman et al., 2004).

Many schools have adopted security measures to reduce the opportunity for students to engage in violence on campuses. These include security cameras, metal detectors and random locker sweeps (Addington, 2009; Borum et al., 2010; Snell, Bailey, Carona, & Mebane, 2002). Many schools adopted these initiatives in direct response to the Columbine massacre (Addington, 2009; Burns & Crawford, 1999). Despite the proliferation of these situational forms of crime prevention, there are no rigorous evaluations to test their efficacy. Some argue that these measures are not worth the cost (Skiba & Peterson, 2000; Snell et al., 2002). Snell et al. (2002) argue that “target hardening” measures lead to a “climate of fear” in schools that actually make them more dangerous (p. 274). Others argue that target hardening measures do not increase school safety because school shooters attack their own schools and are not concerned with secrecy (Langman, 2009). In fact, security cameras were installed at Columbine and filmed the two shooters in action (Cullen, 2009; Fox & Burstein, 2010; Langman, 2009).

Finally, perhaps the most controversial response to school violence in general and school shootings in particular is “zero-tolerance” policies. Zero-tolerance policies are based on the premise that schools will accept no amount of violence or threats of violence in order to deter any incidents from occurring (Borum et al., 2010). For example, in certain jurisdictions, if a student brings a weapon to school, they are immediately suspended. However, according to Snell et al. (2002), harsh penalties are rarely given for severe offenses, but rather for lesser incidents. Researchers are nearly unanimous in the opinion that zero-tolerance policies “don’t work” and may actually do more harm than good (Borum et al., 2010; Fox & Burstein, 2010; Newman et al., 2004). Some researchers wonder whether zero-tolerance

policies are legal and criticize them for resulting in disproportionate minority discipline (Borum et al., 2010; Larkin, 2007; Skiba & Peterson, 2000).

It should be noted that school rampage shootings remain very rare occurrences. This makes demonstration of any policy efficacy that seeks to prevent them problematic. With such small numbers, it is difficult to determine whether the policies have had an impact on school shootings. However, evaluations that include a wider range of dependent variables may be used to gain insight on the effectiveness of these policies.

6. Conclusion

This study of school rampage shootings, while not exhaustive, has uncovered several important findings. First, the media has tended to overreact to school shootings, resulting in the public overestimating the risk of violence and homicide at schools. Some argue that public concern over school shootings represents a sort of moral panic (Burns and Crawford, 2000; Goode & Ben-Yehuda, 2009). Second, school rampage shooting data are sparse, anecdotal, and based mainly on case studies (Fox & Levin, 1998). This research suggests that rampage shootings increased in the 1990s to 2000s but that they were relatively rare. They are characterized by some unique factors, including the demographics of the shooters, the place of attack (rural, low crime towns), and the lack of individual targets, such as a rival gang member or another student with which the perpetrator had a quarrel (DeJong et al., 2003; Fox et al., 2003; Harding et al., 2003; Newman et al., 2004).

In terms of theory, few sophisticated or comprehensive explanations have been developed thus far to better understand school rampage shootings (Levin & Madfis, 2009; Newman et al., 2004). In general, explanations have focused on solitary, disconnected key factors (e.g., mental illness, bullying, violent media), resulting in an incomplete understanding of school rampage shootings.

Finally, this review finds that policies implemented in response to school shootings have mostly involved situational “target hardening” measures and have not been theoretically informed. Because of the relatively recent interest in these types of crimes, research – and especially theory – is somewhat lacking. To some extent, theories require data and thus as research progresses, theory will likely follow suit. A recommendation for future theorists of school rampage shootings is to incorporate research and theory from other fields (e.g., sociology, criminology).

In addition, and perhaps more importantly, to the extent that rampage shootings remain rare occurrences, the argument of others that the media has created a sort of moral panic is relevant here. This suggests that the reactionary and broad sweeping policies enacted in part due to the public fear over school shootings since the 1990s are warranted. Perhaps a more appropriate solution to this moral panic is to public education concerning the actual threat of school shootings.

In sum, based on a review of the literature on school rampage shootings, it is unclear whether this form of violence is sufficiently unique to warrant separate theories or responses. Because of the disproportionate media attention

given to school rampage shootings, these events may have come to appear more distinct than they are in reality. On the other hand, the situational context and seemingly random targets of such shootings suggest they are related to the phenomenon of multiple homicides (Fox & Levin, 1998; Levin & Madfis, 2009). The symbolic nature of these acts is reminiscent of Katz's (1988) discussion of "senseless murder". Future theorizing should seek to incorporate the phenomenological elements of school rampage shootings.

Such work may help reveal the internal or emotional appeal of these acts, perhaps leading to a better understanding of why they occur. The data that exists is suggestive that school rampage shootings arise due to a complex interplay of individual and community level factors. Policies that intend to make schools safer must equally attend to all of these factors.

Appendix A.

Table A.1
Description of select school rampage shootings (1996–2008; US).

Location	Date	Perpetrator (age, race)	Number of Victims
Moses Lake, WA	February 2, 1996	Barry Loukaitis (14, white)	3 dead, one wounded
Bethel, AK	February 19, 1997	Evan Ramsey (16, white)	2 dead, 2 wounded
Pearl, MS	October 1, 1997	Luke Woodham (16, white)	2 dead, 7 wounded
West Paducah, KY	December 1, 1997	Michael Carneal (14, white)	3 dead, 5 wounded
Stamps, AR	December 15, 1997	Colt Todd (14, white)	2 wounded
Jonesboro, AR	March 24, 1998	Mitchell Johnson (13, white); Andrew Golden (14, white)	5 dead, 10 wounded
Edinboro, PA	April 24, 1998	Andrew Wurst (14, white)	1 dead, 2 wounded
Springfield, OR	May 21, 1998	Kip Kinkel (15, white)	2 dead, 22 wounded
Littleton, CO	April 20, 1999	Eric Harris (18, white); Dylan Klebold (17, white)	15 dead, 23 wounded
Conyers, GA	May 20, 1999	Thomas Solomon (15, white)	6 wounded
Fort Gibson, OK	December 6, 1999	Seth Trickey (13, white)	4 wounded
Santee, CA	March 5, 2001	Charles Williams (15, white)	2 dead, 13 wounded
El Cajon, CA	March 22, 2001	Jason Hoffman (18, unknown)	5 wounded
New York, NY	January, 15, 2002	Unknown	2 wounded
Red Lion, PA	April 24, 2003	James Sheets (14, white)	2 dead
Cold Spring, MN	September 24, 2003	John McLaughlin (15, white)	2 dead
Red Lake, MN	March 21, 2005	Jeffrey Weise (16, Native American)	8 dead
Jacksboro, TN	November 8, 2005	Kenneth Bartley (15, white)	1 dead, 2 wounded
Blacksburg, VA	April 16, 2007	Cho Seung-Hui (23, Asian)	33 dead
Dover, Del.	September 21, 2007	Loyer Brandon (18, black)	2 wounded
Cleveland, OH	October 10, 2007	Asa Coon (14, white)	1 dead, 4 wounded
Baton Rouge, LA	February 8, 2008	Latina Williams (23, black)	3 dead

Note: sources include Newman et al. (2004); Infoplease.com; Columbine-Angels.com. Incidents chosen for selection: 1996–2008. Criteria: Perpetrator(s) must be a student at the school and more than one victim was involved.

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