

School Shooting as a Culturally Enforced Way of Expressing Suicidal Hostile Intentions

Antonio Preti, MD

Suicide with hostile intent encompasses a wide range of behaviors, from self-killing by methods that can harm others, to the suicide that generally follows a spree-killing raid. Reports on school shooting, a highly dangerous and lethal behavior that is spreading from North America to European countries, are analyzed within the paradigm of suicide with hostile intent, with the purpose of discovering some elements that might prevent and limit the dissemination of this behavior by imitation. In school shooting, the perpetrators often register a message before their killing raid, as in an ancient form of suicidal assault, the *devotio*, that was widespread across ancient Mediterranean Roman, Greek, and Hebrew cultures. The development of a code of rules to report on these episodes, likely to attract the interest of the population for their bloody implications, could prevent the dissemination of cultural norms that encourage this behavior.

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Suicide with hostile intent encompasses a wide range of behaviors, from self-killing by methods that can harm others (use of explosives, car driving), to the suicide that generally follows a spree-killing raid.¹ The major determinant of these forms of lethal behavior, potentially or intentionally harmful to others, is the will to express rage toward those who are seen as the source of one's misfortune.²

Suicide by revenge was known in ancient times,^{3–5} and now it is considered by current anthropological and ethnological studies as being stimulated by culturally approved rules that should earn the suicidal actor the support of the community in his or her efforts to obtain compensation for the suffered wrongs.^{6,7} School shooting, a dramatic behavior that is becoming more and more frequent in North America, and is spreading in Europe, can be attributed in some way to the mechanics that govern suicide with hostile intent.

The expression "school shooting" refers to firearm violence occurring in educational institutions, especially the mass murder or spree killing of people within such an institution. In most cases, school

shootings involve multiple intended or actual victims, often randomly targeted. While many spree-killing episodes end up with the arrest of the perpetrators, or their deaths at the hands of local police authorities trying to subdue them, a large fraction of the documented school shootings have ended up with the perpetrators killing themselves. School shooting, therefore, often implies some suicidal intention on the part of the perpetrators, who awaited or planned the action with the purpose of committing suicide after the execution of one or, generally, many victims. This scenario was proved beyond any doubt in the Columbine incident (Littleton, Colorado, April 20, 1999).⁸

In this commentary, reports on school shooting are analyzed within the paradigm of suicide with hostile intent, to discover some elements that may prevent and, in particular, limit the dissemination of this behavior by imitation.

Evidence on School Shooting

School shooting is an extremely rare event: there is not an agreed upon definition of what a case is, and it is even more difficult to define nonevent cases for comparison.⁹ Because of the uncertainty about both the numerator and the denominator in studying school shootings, the extrapolation of causal path-

Dr. Preti is Consultant Psychiatrist, Genneruxi Medical Centre, Forensic Consultant in Psychiatry, Cagliari Court, and Adjunct Professor of Psychology, University of Cagliari, Cagliari, Italy. Address correspondence to: Antonio Preti, MD, Centro Medico Genneruxi, via Costantinopoli 42, I-09129 Cagliari, Italy. E-mail: apreti@tin.it

Table 1 Episodes of School Shooting Since 1966

Location	Number of Reported Episodes	Episodes by Year, on Average	Number of Victims, on Average	Number of Wounded, on Average	Number of Cases Ending With the Suicide of the Perpetrator(s)
US	44	1.0 (1966 to 2008)	3.8	6.3	15 (34%)
Canada	7	.2 (1975 to 2007)	3.4	7.5	4 (57%)
Europe	7	.4 (1989 to 2008)	6.8	8.5	6 (85%)
Other	5	.5 (1997 to 2008)	3.0	2.2	None

Reported in Wikipedia; updated as of May 29, 2008.

ways is a desperate concern for all those required to investigate the topic. Since a small number of cases may be open to a large number of potential causes, pattern matching has been the most frequent method used to analyze school shooting scenarios.^{9,10} Pattern matching is the sole approach that can reduce the degree-of-freedom problem, (i.e., too many variables to be investigated in too few cases). Indeed, while it is undoubtedly true that many hypothesized causal factors also recur in many settings in which a school shooting has not happened, negative cases are not informative for identifying necessary but not sufficient factors (the first line in causation).

Data from Wikipedia were used to investigate the phenomenon; Wikipedia is rather accurate in describing facts, at a level that has been equated to the *Encyclopaedia Britannica*.¹¹ Data were inspected on April 25, 2008, and again on May 29, 2008. As a matter of fact, there is no alternative but to use media coverage such as that reported in Wikipedia to analyze the phenomenon of school shooting, since these deaths are not routinely reported to state or federal agencies and cannot be identified by using traditional public health or criminal justice data sources.^{12,13}

A total of 44 episodes were listed to have occurred in the United States from 1966 to 2008. Seven listed episodes occurred in Canada (from 1975 to 2007), and 12 outside North America from 1989 to 2007 (Table 1). There were seven episodes in Europe (three in Germany, and two in Finland), and five occurred elsewhere (Australia, India, Argentina, Yemen, The Philippines).

The incidence of episodes was higher in the United States than elsewhere, with a robust trend toward an increasing number of episodes over time (about one episode every 10 years; $\beta = 0.65$, $t = 3.80$, $p = .001$, $R^2 = 43\%$, $\text{adj. } R^2 = 40\%$).

Following the Columbine incident (April 20, 1999: 15 victims), the bloodiest episode in the United States before the Virginia Tech massacre (April 16, 2007: 33 victims), there were 24 addi-

tional episodes, 5 in 2008 (all in February). The corresponding events were three in Canada, four in Europe, and three elsewhere. Roughly half of all episodes in these locations had occurred in the past 10 years. The number of victims ranged from 0 to 33 by episode in the United States, 1 to 14 in Canada, 0 to 17 in Europe, and 1 to 8 elsewhere.

The number of wounded people ranged from 0 to 31 by episode in the United States, 0 to 19 in Canada, 0 to 37 in Europe, and 0 to 6 elsewhere. On average, there were more victims per episode, both murdered and wounded, in Europe than in the United States or Canada.

Often a single perpetrator was responsible for the killing, but sometimes more than one assailant was involved in the episode, as in the Columbine incident. The assault ended up with the perpetrator's suicide more often in Europe than in the United States, Canada, or elsewhere. In the United States, the majority of events (60%) ended with the capture of the perpetrator(s).

However, sometimes a suicide note was retrieved in cases in which the perpetrator was arrested or killed by police authorities in the course of the incident. Among those sentenced to prison, in some cases evidence of insanity was found, but details on this occurrence were not available for many of the episodes.

Past Investigations on the Topic

In a survey considering all episodes of school-related violent deaths that occurred in the United States from 1992 to 1999, single-victim student homicides were found to have decreased significantly, while multiple-victim homicides increased.¹² More recent data, from 1999 to 2006, revealed a reversed pattern, with single-victim student homicides increasing and multiple-victim homicides decreasing.¹³ In the 37 incidents investigated by the Secret Service's National Threat Assessment Center within

the Safe School Initiative (SSI), all perpetrators ($n = 41$) were boys or young men.¹⁴

Most of the victims were adolescents (mean and median, 15 years; age range, 6–18). In approximately half of the incidents, one or more of the victims were targeted before the attack. In most, the attacks were planned in advance.¹⁴

More than 50 percent of school shooting events were preceded by some action that might have warned of the potential for impending violence.^{10,12} More relevant to the intent of this article, homicide perpetrators were often found to have expressed suicidal behavior such as suicidal thoughts, plans, or actual attempts before the event, significantly more often than same-age homicide victims.¹² Suicidal intent was found in most cases for which there was detailed information on the assailants.^{10,14}

Evidence indicates that, among students, homicide perpetrators were more than twice as likely as their victims to have been bullied by their peers, and also were described as loners and poorly integrated into school activities.^{12,14,15} Therefore, reasons of revenge might have moved the perpetrator to kill. In a detailed case scenario inquiry, obtaining justice against peers or adults was the principal stated motive by perpetrators, who were often angry about being teased or ridiculed and were looking for revenge against specific individuals or groups.¹⁰ Revenge, however, was hardly ever acted upon impulsively: in most of the ascertained cases, perpetrators prepared a well-organized plan, and often communicated details about it to acquaintances or friends, who failed to report threats because they did not consider them serious or were embarrassed or ignorant of where to go for help.¹⁶ The most antisocial peers sometimes approved the plan, sharing the same anger against the stated target of violence.^{10,14}

The Possibility of Copycat Killing

Copycat killing has been suggested as a mechanism in the spreading of school shooting in recent years, in both the United States and elsewhere.¹⁷ Like kittens, which learn by imitation, a copycat is someone who mimics the behavior of another. Copycat crimes were reported to follow violent episodes that received wide coverage in the media: there is some evidence on copycat homicides, where the perpetrator copied the *modus operandi* of the imitated crime.^{18,19} There is also evidence on copycat suicides, the so-called Werther effect.^{20,21}

Concerns have been raised on the chance that sensational publicity about a violent crime or suicide may cause an increase in similar violent behavior. Media guidelines have been proposed to reduce the impact of this alleged copycat effect.²² Results seem encouraging for decreasing copycat suicide.²³

Media coverage of school shooting, too, was reported to have been followed by an increase of threats against schools. In the four weeks immediately after the Columbine incident, for example, up to 350 students were arrested in the United States on charges of having raised some kind of threat against a school.²⁴ A study investigating imitative behaviors after the Columbine incident found strong evidence of a copycat effect, with a bimodal increase, and then decrease, of threats (proportional to days of media coverage), mostly involving bombs (as in the Columbine episode) rather than guns or knives (as often found in school violence), with suburban and rural counties more involved than urban ones.²⁵

Copycat killing, therefore, may be a force behind the spread of school shooting throughout the Western world in the past 10 years. However, the key to prevention is discovering whether a subject poses a threat (i.e., she or he engages in behavior that indicates planning) and not merely whether he or she made a generic threat.^{14,26} Beyond copycat killing, there could be additional mechanisms inherent in the behavior in itself, some culturally approved script the perpetrator is following.

On Killing by Self-Killing

In more recent episodes of school shooting, the perpetrator often registered a message before the killing raid,²⁷ as has become the rule in raid killings by suicidal attacks in the Middle East.²⁸ More recently, some of these recorded messages were released on public Web sites, such as YouTube, for other people to view, as occurred in the Jokela incident in Tuusula, Finland (November 7, 2007).

This procedure is reminiscent of an ancient form of suicidal assault, the devotion, which was widespread across Mediterranean cultures. Ancient Roman accounts describe a specific magic procedure whereby a soldier was to invade the opponent's camp with the protection of the gods of the underworld and devastate the enemy troops. Many reports have a legendary flavor; however, historical documents report some episodes of self-killing by *devotio* that allegedly took place.²⁹

Historians report a precise ritual that the soldier consigning himself to suicide by *devotio* should comply with. He should inform his fellows of his decision, then speak a ritual formula including a curse against his enemies, and then throw himself against the enemy pursuing the objective to kill as many enemies as he could during his raid.^{1,29} Obviously enough, the assault always ended with the reaction of the opponent, who killed the assailant: suicide by aggression, the so-called provocation, was, indeed, a choice often made by soldiers, particularly when defeated.²⁹ The same mechanism is now recognized in the so-called suicide by cop, whereby someone engages in life-threatening criminal behavior toward law enforcement or civilians, aimed at provoking officers to shoot him or her in self-defense or to protect civilians.³⁰

A Jewish account of the Roman *devotio* tells of the death of Eleazar during the battle of Bet-Sacharja, in the Israeli-Seleucid war, reported in the Bible. To kill the elephant carrying the enemy king, Eleazar ran through the enemy lines and spread death and fear, until he was killed by the falling elephant, which he had succeeded in eviscerating (I Maccabees 6:43–7). Other episodes reminiscent of this procedure are reported in Josephus' *Bellum Iudaicum* (details in Ref. 31). Some Greek historical accounts, too, are reminiscent of the *devotio*: in Xenophon's *Hellenika*, and in Pausania's *Description of Greece* (details in Ref. 1). While these procedures are intended to be military, they are characterized by the commitment of the actor to his goal, killing as many enemies as possible by sacrificing himself, and the cultural recognition his action was expected to receive in the community.

Suicide with Hostile Intent

Particularly in the incidents that ended with the suicide of the perpetrator, the messages sometimes recorded before the killing raids reported revenge as a reason for the planned mass killing, although in some cases these reasons were mixed with delusional themes, leaving some doubt on the real basis of the pretended wrongs that allegedly moved the actor to revenge.³² In the instances of suicide with hostile intent, sometimes revenge is taken by stirring a social reaction against those individuals who the community thinks have caused the suicide.^{1–3}

The ethnographic literature reports that suicide for revenge is widespread in preindustrial cultures, as it was described among the Zaire in Africa, the Agua-

runa Jivaro in Peru, and among the Fore, the Hagen, the Maenge, the Maring, and the Gainj of Papua New Guinea.^{4,6,7} In these locations, popular narratives such as myths, legends, and folktales report explicit rules to accomplish suicide for revenge with a good chance of punishing the offender. Generally, those planning suicides should warn the others of their intentions and communicate, in advance, the identity of the individual who is responsible for their gesture. Then, they should kill themselves in public. If individuals follow these procedures, then they can reasonably expect their kin and friends to seek either revenge or payment for compensation by the offender, thus denounced in public.^{7,33}

Recent episodes of school shooting, whereby the perpetrator recorded a message and then disseminated it through the Internet, indicate that school-shooting perpetrators desire that other people understand their reasons. These expectations indicate that the behavior is supported by a recurrent pattern, which, in all likelihood, reflects culturally shared norms and is somehow expected to justify this kind of behavior. As demonstrated by the episode that recently occurred in Finland, the media and reports on the Internet could facilitate the diffusion of these potentially lethal norms. The development of a code of rules to report on these episodes, which are likely to attract the interest of the population for their bloody outcomes, could prevent the dissemination of cultural norms that might encourage this behavior.

Facing the Menace

School shooting, *per se*, is a very rare event. There are many more challenging violent threats in the life of young people and their families. However, a single event can have an enormous and enduring impact on all those who are exposed to it.³⁴ The personal experience of violence for most children and adolescents occurs at school.^{35,36} Being involved or witnessing an episode of school shooting can result in long-standing post-traumatic stress disorder, negatively affecting the maturational course.³⁷ Negative consequences were described for involved adult staff as well.³⁸ School shooting can also have a disrupting effect on class cohesion,²⁵ while school connectedness was found to be protective against violence perpetration in some studies on minorities.^{39,40}

Risk assessment is very difficult for violence in general,⁴¹ and for rare events such as school shooting in particular.⁴² There is no reliable method to predict

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Table 2 Warning Signs in School Shooting Incidents

Predicted on the Basis of Past Studies*	Occurred in Real Case Scenarios†	High-Risk Factors
Uncontrolled anger	Threats of violence	Recent history of violence
History of aggression	Detailed plan, often communicated to others	Past history of violence
Threats of violence	Blames others for problems	History of suicidal behavior
Recent loss	History of aggression	Family history of violence
Symptoms of depression/hopelessness	Uncontrolled anger	History of substance abuse
Social isolation (real or perceived)	Depression and/or suicidal threats	Medical condition
Feelings of being persecuted or bullied	Poor coping and social skills	Use of medication
Access to firearms	Feelings of being rejected by peers	Access to and experience with weapons
	Feelings of being persecuted or bullied	Recent loss
	Access to firearms	Recent humiliation
	Fascination with weapons and explosives	Communication of violent intentions
	Organized for attack	
	Lack of a prosocial support system	
	Recent loss	
	Lack of supervision at home	

*Extracted from References 41 and 44.

†Extracted from Reference 14, and Reference 10, p 43.

future violence, and there is a high risk of both false positives and false negatives, which raises questions of ethics (loss of individual freedom and privacy), and the more pragmatic problem of avoiding a pejorative trajectory in the life of wrongly identified potential offenders (i.e., a self-fulfilling prophecy, with a wrongly identified subject developing persecutory thoughts about authority).^{10,43}

There is some agreement on risk factors for aggression and violence to recur along a continuum, with accumulating risk factors, hence a greater number, indicating greater risk.^{16,44} Some elements were indicated to deserve greater attention, in the presence of increasing levels of risk: a history of aggression, a decline in functioning, and a recent relational loss or stressful event make the case for additional inquiry, particularly after openly disclosing threats of suicide or targeted violence (Table 2). Specific guidelines have been released in the United States for this purpose,²⁶ but they are lacking in other countries.

Social isolation and peers' rejection, particularly bullying victimization, have been associated with most incidents analyzed in the United States.^{14,45} Risk factors for bullying victimization and for suicidal behavior should be taken into account in dealing with interpersonal school-associated violence. Past studies have shown that bullied victims sometimes retaliate in a highly aggressive manner to provocative bullying.^{46,47} Acting against bullying and harassment in school and fostering a culture of mutual respect and help is the main recommendation that emerged from the Safe School Initiative (SSI) team.²⁶

As for suicidal behavior, a yet unknown fraction of suicides are intended to avenge a wrong that the perpetrator feared would never be legally prosecuted.^{1,7,33} A link between aggressiveness and suicidal thoughts has been repeatedly reported and is particularly evident among youths.⁴⁸

People with a history of trauma are more prone to suicidal thoughts and plans.⁴⁹ Suicidal thought and intent to gain revenge may become a lethal admixture when adolescents and young adults have access to firearms.^{9,14,50}

Guidelines for Prevention

The prevention of copycat school shooting rests on the adoption of precise guidelines for the reporting of the episodes.²⁵ As for media-coverage guidelines,²¹ exposure should be given to preventable elements in the episode. For example, when there is evidence of mental disorder in the perpetrator, it could be appropriate to state this and set standard rules for dealing with mental troubles, such as contacting a counselor within the school or receiving addresses for mental health examination and including telephone numbers of help lines or Web sites for receiving help when suffering the effects of mental distress. The plain description of symptoms should be used: clear terms, such as depression, anxiety, hallucinations, or suicidal ideation are preferable to stigmatizing words like madman, crank, or nut, which prevent identification.

The perpetrator should never be glorified, but neither should he or she be demonized, to avoid glorifi-

cation by rebellious countercultures. Information on methods of killing should never be fully disclosed.

Finally, the importance of referring students or staff members with mental troubles to appropriate services should be emphasized in seminars devoted to educators and chief directors. Many people with mental disorder are not violent or aggressive. However, some people with psychosis and additional risk factors (substance abuse, recent trauma, or a stressful event), can be very dangerous, and this possibility should not be overlooked because of a mistaken spirit of benevolence toward subjects who are mentally ill.⁵¹ These subjects may need treatment, even against their will, and they have the right to receive appropriate care, even when they cannot give adequate informed consent because of their mental state.

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