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Literature Review

Reviewing the existing research on school rampages and related forms of violence was important to the panel's work for two reasons: first, to look for substantive findings about the causes of such events and, second, to consider whether theories or suggested analytic frameworks could help in understanding the panel's detailed case studies.

This chapter presents evidence from several different bodies of research. First is the research that focuses narrowly on school rampage shootings. Given the apparent newness of the phenomenon and the public interest the incidents have generated, the sources of information we needed to tap lay beyond the usual research procedures and standards. In addition to academic research published in peer-reviewed journals, we examined journalistic and professional practitioner studies.

We also looked at the research on violence, on youth violence, and on school violence—including the role of bullying in provoking retaliatory violence in adolescents.

In exploring the incidents of lethal violence in schools and the school rampage shootings, we discovered some more specialized bodies of research that had grown up around incidents similar to those under study. Thus we looked at the research on mass murder, on public rampages in workplaces and other public places, and on shootings followed by suicides. Finally, concerned about issues of contagion, we looked at research on copycat violence and suicide clusters.

RESEARCH ON SCHOOL RAMPAGE SHOOTINGS

A small number of very recent studies have focused on incidents in which students at a school opened fire on other members of their school community, killing or seriously injuring more than one person. Four studies of youth school rampage shootings are reviewed here: two from the academic literature, two from the professional practitioner literature. While there are some noteworthy discrepancies, the studies paint broadly similar pictures of this rare phenomenon.

Adolescent Mass Murderers

In the wake of the Columbine High School mass murders in April 1999, a group of researchers focused their attention on adolescent mass murders—many of which occurred in school settings and resembled the shootings at Columbine (Meloy et al., 2001). The researchers defined adolescent mass murder as the intentional killing of at least three victims (other than the perpetrator) in a single incident by an individual age 19 or younger. They identified cases through a search of medical, social science, and criminal computer databases. A case was included only if there was sufficient credible information.

The researchers collected evidence from primary data sources—for example, courtroom testimony, scientific articles, interviews with law enforcement personnel involved in the case, and video interviews with the perpetrators, survivors, family members, and witnesses—as well as secondary data sources—for example, newspaper articles. They produced a dataset that covers 27 incidents of mass murder involving 34 perpetrators. Eight of the perpetrators committed their attacks at school. The 27 mass murders accounted for 126 people killed and 84 people injured. All the mass murders occurred between 1958 and 1999, with more than half occurring between 1995 and 1999.

The adolescent mass murderers had the following characteristics: all were male, 80 percent were white, 70 percent were described as "loners," 43 percent had been bullied by others, 37 percent came from separated or divorced families, 44 percent were described as "fantasizers" (daily preoccupation with fantasy games, book, or hobbies), 42 percent had a history of violence, 46 percent had an arrest history, 62 percent had a substance abuse history, and 23 percent had a documented psychiatric history.

The researchers also noted that 48 percent of the mass murderers were preoccupied with war or weapons. This measure included such behaviors as the acquisition of a large number of weapons, war and weapons-related media, military uniforms, frequent trips to the shooting range, infatuation with street gangs, preoccupation with martial arts, idealization of fictional

and nonfictional violent characters, and taking a nickname associated with a violent figure or violent theme.

Precipitating events or triggers, such as personal loss or status threat, were documented in 59 percent of the attacks. These triggers usually preceded the violent event by only a few hours or days.

Meloy and his colleagues (2001) developed a typology of adolescent mass murderers that includes the following categories: family annihilator, classroom avenger, criminal opportunist (who commits mass murder during the commission of a crime, such as eliminating witnesses to a robbery), bifurcated killers (who combine family annihilation and classroom revenge), and a miscellaneous group with diverse motives ranging from sensation-seeking to occult beliefs. Family annihilators and classroom avengers were much more likely to consciously ponder mass murder and premeditate an attack plan. Classroom avengers were more likely to be the victims of bullying and preoccupied with fantasies compared with family annihilators and criminal opportunists. However, criminal opportunists were more likely to have a preoccupation with weapons. Classroom avengers were more likely than family annihilators and criminal opportunists to experience clinical depression, while a history of antisocial behavior predominated among the latter groups.

Classroom Avengers

Two researchers took an approach that focused even more closely on our subject. McGee and DeBernardo (1999) examined 12 shooting incidents that occurred in American middle and high schools between 1993 and 1998. These incidents were selected for study by the authors because they considered them "nontraditional" school shootings. In their view, traditional school shooting incidents involved juvenile gangs, inner-city problems, minority or ethnic status, turf warfare, drugs or other criminal activity, like armed robbery or extortion. And nontraditional incidents involved multiple rather than single victims and were more similar to episodes of adult workplace violence, described as workplace vengeance, than to incidents of violence associated with gangs, drugs, and street crime.

These authors developed a behavioral profile of the 12 shooters in these incidents through a subjective analysis of available data, including unconfirmed anecdotal accounts from official police reports and popular media. The authors caution that their behavioral profile is not a definitive portrait and might well change as more complete information becomes available.

The picture of the "classroom avenger" that emerged from these sources is one of a physically healthy, working-class or middle-class white

male who lived in a rural area or a small city. Family background and relationships were often quite dysfunctional; parents were often divorced or separated, and parental discipline has been meted out in ways that are both harsh and inconsistent. In terms of peer relations, the authors found that classroom avengers had problems with bonding and making social attachments. Although they did not show any overt sign of mental disorders, their mood was significantly depressed. Their depression was not readily apparent, however, because they did not complain or show physical signs, such as sudden weight loss or lack of energy. Instead, their depression was manifested through sullen, angry irritability and seclusiveness as well as "action equivalents" of depression, such as vandalism, temper outbursts, and comments such as "my life sucks." They blamed their personal failures on others and were easily frustrated by the slightest adversity. Self-esteem was unstable and vacillated between feelings of worthlessness and self-reproach on one hand and narcissistic self-aggrandizement and superiority on the other.

Although their physical appearance was unremarkable, they usually had a negative body image, viewed themselves as unattractive, and were frequently perceived by peers as "nerds" or "geeks." McGee and DeBernardo (1999) suggest that these youth were friendless, immature, and socially inadequate loners who prefer the company of younger children and inappropriately continued to play with soldiers and "G.I. Joe" games. Their associates were also outsiders who often shared a highly eccentric or nihilistic view of the world. Academic performance was normal to somewhat above average, but it declined in the weeks before their violent outburst. Extensive histories of delinquency and police involvement were rare, but covert vandalism and cunning dishonesty were common. The classroom avengers were not interested in typical teen preoccupations, such as dating, cars, and sports. Rather, guns, bomb making, and violent media fascinated them. The violent events always involved firearms, which were readily available in the home.

In the immediate weeks prior to the shooting incident, the researchers found that the classroom avengers had been exposed to psychosocial stressors that seemed to act as triggering events for the shootings. Specific triggering events include reprimand or discipline by parents or school authorities; some form of public ridicule; treatment perceived as unfair or demeaning; loss of a real or imagined relationship, particularly with a female love object; and hostile rejection or taunting, teasing, or bullying by peers.

The classroom avenger styled incidents after actual and fictional events. The authors suggest certain events, especially ones in close geographic proximity, can precipitate an attack via a copycat response. Shoot-

ing sprees were often preceded by journal or letter writing in which the details of the looming outburst were spelled out. Classroom avengers often verbalized their impending attack in the form of threats, boasts, assertions of intent, or warnings.

The school shooting sprees were premeditated and motivated by vengeance (McGee and DeBernardo, 1999). The shooters fantasized about revenge and retaliatory triumphs over their adversaries, and mental rehearsals of their acts of violence began well in advance of the actual attack. In fantasies, they selected victims and witnesses, time, location, means, and course of action. They planned predatory aggression that was selective, calculating, and premeditated. These acts were sophisticated and creative, unlike purely impulsive acts of suddenly erupting rage. The authors observe that all elements of the "Menninger triad" (1938) were present: (1) they wished to die (suicide), (2) they wished to kill (homicide), and (3) they wished to be killed (victim-precipitated homicide). The authors suggest that the psychiatric diagnoses of a classroom avenger are atypical depression and mixed personality disorder with paranoid, antisocial, and narcissistic features.

Targeted School Violence

Since the early 1990s, researchers at the United States Secret Service have been working on ways to improve the agency's assessment of threats in order to better protect dignitaries from targeted violence. To many in the Secret Service and at the U.S. Department of Education, the problem of protecting dignitaries from violent attacks seemed similar to the problem facing those interested in preventing school rampages.

With the support of the secretary of education, the Secret Service's National Threat Assessment Center studied 37 school shooting incidents involving 41 attackers (Vossekuil et al., 2000).

The incidents examined were limited to shootings in which the attacker chose the school for a particular purpose (not simply as a site of opportunity) and that were not related either to gang or drug activity, or an interpersonal or relationship dispute that happened to occur on school grounds. For each incident, teams of researchers and investigators reviewed primary source materials, such as investigative, school, court, and mental health records. In addition, center personnel conducted interviews with 10 of the attackers.

All of the incidents were committed by boys or young men. In more than two-thirds of them, one or more students, faculty, or others at the school were killed. Firearms were the primary weapons used. In over half of the incidents, the attacker selected at least one school administrator, faculty, or staff member as a victim.

Vossekuil and his colleagues (2000) reported that the incidents of targeted school violence were rarely impulsive. In almost all of them, the attacker developed the idea to harm the target before the attack; in well over three-fourths of the incidents, the attacker planned the violent event.

Insofar as these events were premeditated and deliberate, they can be seen as rational. What seem less rational, however, are the attacker's perceptions of the circumstances that prompted and focused the action and the normative rules that seemed either to require or allow the attacks to take place.

More than half of the attackers had as their motive a general kind of revenge against an undifferentiated target, and over two-thirds had multiple reasons for their attack. Yet most witnesses to the events leading up to these incidents did not see the same reasons for anger and vengeance that the attackers saw, nor did they think the concerns rose to a level that would justify such reckless attacks. If the idea of rationality includes some sense of objectivity in assessing threats to one's status and welfare and some commitment to protecting rather than attacking the welfare of one's fellows, then these events were less than rational.

Prior to most of the incidents, the shooter told someone about his idea or plan (Vossekuil et al., 2000). In more than three-quarters of the cases, the attacker told someone, almost always a friend or peer, about his interest in launching an attack at school. In less than one-quarter of the cases, the attacker directly communicated a threat to his target before the outburst. In almost every incident, the attacker engaged in some type of behavior—such as attempting to get a gun, writing disturbing essays or poetry, inappropriate humor—that caused others, such as school officials, police, and fellow students, to be concerned about him.

In contrast to the McGee and DeBernardo (1999) study, the National Threat Assessment Center report concludes that there is no accurate or useful profile of the school rampage shooters. They were much more impressed by the diverse characteristics of the shooters than their similarities. The school shooters were described as coming from a wide variety of racial and ethnic backgrounds (in nearly one-quarter of the cases, the attackers were not white); coming from a wide range of family situations, ranging from intact families with numerous ties to the community to foster homes with histories of neglect; having academic performances that ranged from excellent to failing; having a range of friendship patterns, ranging from popular to socially isolated; having varied behavioral histories, ranging from no observed problems to multiple problem behaviors; and most having little change in academic performance, friend status, disciplinary problems, or drug or alcohol abuse prior to the attack. Although access to firearms was common among the attackers, the report also differed from other research on the importance of weapons to the

shooters. In most cases, the shooters did not express a fascination with weapons or explosives.

Although the attacker acted alone in at least two-thirds of the cases, they were influenced or encouraged by other students in almost half of the attacks. In more than three-quarters of the attacks, other students knew about the attack before it happened. Some knew exactly what was planned, while others only knew that something "big" or "bad" was going to happen.

In more than two-thirds of the cases, bullying played a key role in the attack. In these instances, the shooter felt persecuted, threatened, attacked, or injured by others before the outburst. Some of the attackers had experienced intense bullying and harassment for a very long period of time.

In more than three-quarters of the incidents, the attackers had difficulty coping with a major change to a relationship or a loss of status (e.g., a personal failure) prior to their school attack. More than half of the attackers had a history of feeling extreme depression and nearly three-quarters of the attackers had threatened or attempted to commit suicide prior to the incident.

School Shooter Threat Assessment

The National Center for the Analysis of Violent Crime of the Federal Bureau of Investigation (FBI) has also developed a model of threat assessment for school shooters by analyzing 18 school shooting cases (Federal Bureau of Investigation, 2000). The incidents involved both single and multiple offenders. Actual shootings occurred at 14 schools; in the remaining 4 cases, the student or students had planned and made significant preparations but were detected by law enforcement before the shooting took place. These 18 cases were supplemented by an unidentified number of cases in which the center was already preparing a threat assessment.

The FBI study described a process they call "leakage," in which a student intentionally or unintentionally reveals clues to feelings, thoughts, attitudes, or intentions that may signal an impending act (Federal Bureau of Investigation, 2000). These clues can take the form of subtle threats, inappropriate jokes, boasts, or innuendos and can be either spoken or conveyed in stories, journal entries, essays, poems, songs, or drawings. Leakage is considered to be a cry for help and the most important clue that precedes the violent act.

The FBI's findings focus on the personality traits of school shooters; their relationship with parents and the quality of parenting; social relationships at school, including relationships with deviant peers and the

school culture; and the influence of violent media. The authors recommended that any sudden changes in outside interests or drug and alcohol use should be closely monitored. They also noted a copycat aspect to many of these events, as school shooters seem to be influenced by other shooting events that generate intense media scrutiny. The FBI suggests that school administrators, parents, and law enforcement officials should be more vigilant in monitoring disturbing student behavior in the months following a well-publicized incident elsewhere in the country.

GENERAL RESEARCH ON VIOLENCE

The research reviewed above tends to focus on the characteristics of the offenders. It is as though an implicit assumption is being made that the character, motivation, and circumstances of the offender are the principal causes of these events; furthermore, that being able to identify such offenders before they commit these crimes would be the most obvious and most direct means of dealing with the problem. Yet other broad classes of factors may turn out to be important either as significant causes of the events, as important targets for intervention, or both. In the general research on the causes of violence, the emphasis on the offender's individual character and motivations and the role of mental illness is often reduced in favor of other explanatory factors.

One approach emphasizes broad social factors, such as poverty, racism, and a culture of violence, that are expressed in the conduct of particular individuals. Another points to more idiosyncratic situational factors, such as unfortunate combinations of acute problems in an individual's life with the ready availability of weapons. A reading of the general research on violence suggests a broad range of variables that may be contributing to school rampages and provides some insight on the effectiveness of interventions focused less on the stable characteristics of individuals and more on either broad social factors or situational factors.

Violence in General

In 1993, the National Research Council (NRC) published *Understanding and Preventing Violence*. This work is a comprehensive attempt to catalogue what is known about possible causes of violence (National Research Council, 1993–1994, 4 volumes). One of the important results of that work was the development of an analytic framework for identifying the many different possible causes of violence, shown here as Table 10-1. For our purposes, there are several important things to understand about this framework.

TABLE 10-1 Matrix for Organizing Risk Factors for Violent Behavior

Units of Observation and Explanation	Proximity to Violent Events and Their Consequences		
	Predisposing	Situational	Activating
Social			
Macrosocial	Concentration of poverty Opportunity structures Decline of social capital Oppositional cultures Sex-role socialization	Physical structure Routine activities Access: Weapons, emergency medical services	Catalytic social event
Microsocial	Community organizations Illegal markets Gangs Family disorganization Preexisting structures	Proximity of responsible monitors Participants' social relationships Bystanders' activities Temporary communication impairments Weapons: carrying, displaying	Participants' communication exchange
Individual			
Psychosocial	Temperament Learned social responses Perceptions of rewards/penalties for violence Violent deviant sexual preferences Cognitive ability Social, communication skills Self-identification in social hierarchy	Accumulated emotion Alcohol/drug consumption Sexual arousal Premeditation	Impulse Opportunity recognition
Biological	Neurobiologic[a] "traits" Genetically mediated traits Chronic use of psychoactive substances or exposure to neurotoxins	Transient neurobiologic[a] "states" Acute effects of psychoactive substances	Sensory signal-processing errors Interictal events

[a]Includes neuroanatomical, neurophysiological, neurochemical, and neuroendocrine. "Traits" describes capacity as determined by status at birth, trauma, and aging processes such as puberty. "States" describes temporary conditions associated with emotions, external stressors, etc.
SOURCE: NAS, 1993.

First, the NRC panel on violence recognized that one could search for the causes of violence along two quite different dimensions. One dimension involves what could be considered the "structural level of analysis"—that is, one could try to find the explanation for violence either in the aggregate structures of society or in the characteristics of individuals. Furthermore, in looking at the aggregate structures of society, one could look at characteristics of very large aggregates of people and places in society, which presumably do not change very much or very fast, or at characteristics of smaller aggregates, which presumably have wider variation across society and change more quickly. In looking at the characteristics of individuals, one could look at characteristics at either the psychological level or the biological level.[1]

The other dimension involves the way that the potentials for violence that are contained within social structures and individual characteristics are transformed from a latent potential to the actual production of a violent event. In this dimension, the dynamics of time, of situations, of chance combinations of factors that lead toward violent acts are introduced into the understanding of violence. The report explains the importance of addressing these more dynamic, situational processes (National Research Council, 1993:298–299, emphases added):

> A violent event requires the conjunction of a *person* with some (high or low) predisposing potential for violent behavior, a *situation* with elements that create some risk of violent events, and usually a *triggering event*. Development of an individual's potential for violence may have begun before birth: perhaps with conception involving an alcoholic father, or through abnormal prenatal neural development. It may have begun during early childhood in a violent household, or though school failure, or through frequent exposure to violence in the neighborhood or from the media.
>
> A hazardous *situation* for violence could involve a dispute, perhaps aggravated by a miscommunication in a bar because of loud background noise, which was misinterpreted as an insult because of intoxication and escalated because participants were afraid of losing face in bystanders' eyes. The *surrounding community* could be gang turf, the site of illegal drug or gun markets, or a neighborhood where large numbers of unsupervised teenagers reside. It may be the scene of recent aggravating events such as police brutality, or of frequent brawls between members of different ethnic groups. The neighborhood may be experiencing social disruption as stable families move to the suburbs, as businesses close, and as public services decline.

The significance of bringing the dynamic, situational factors into view in the explanation of violence has at least two important implications for our work. First, it increases the importance of thickly descriptive narra-

tive case studies as an important way of understanding the causes of violence. Only case studies can pick up the detail and the narrative flow of events that convert a mere potential for violence into the real thing. The structural factors can identify parts of society in which violence may be more or less likely to occur, and in doing so, highlight high-risk situations and individuals. But they cannot necessarily show everything that went into the creation of a particular event, or the variety of things that could have been done to prevent that particular event (as well as some others more or less like it) from occurring.

Second, it raises the important question of whether there is any reason to prefer interventions that focus on the more or less stable characteristics of social aggregates or the more or less stable characteristics of individuals, over interventions that focus on interrupting small, somewhat idiosyncratic microprocesses and the things that sustain them as they carry a potential for violence into the real thing.

Of course, the benefits of preventing something from occurring rather than reacting to it after the fact are obvious. And there is benefit to eliminating the potential of something bad from occurring as opposed to remaining constantly vigilant, and then scurrying around to try to stop it once it appears. But an important question is whether one kind of intervention should be preferred over another from the outset.

The NRC panel on violence provides some guidance on this matter: "A major problem in *understanding* violence is to describe the probability distributions of predisposing factors, situational elements, and triggering events at the biological, psychosocial, microsocial, and macrosocial levels. The problem in *controlling* violence is to choose among possible interventions" (p. 299). The report goes on to say: "We do not assume that any single level is more fundamental than the others in explaining a particular type of violence. Rather, . . . violent events and community violence levels arise out of interactions across the levels, and these interactive processes differ from one type of violence to another" (p. 296). Finally, the panel observes (p. 300):

> In most violent events, contributing situational elements are most visible in the microsocial encounter that precedes the event. These elements include the dynamics of communications among participants, such as disputes, threats and counterthreats, exchanges of insults, robbery and resistance, and the urgings of bystanders. Both the nature and interpretation of these exchanges may be conditioned by preexisting social relationships among participants: an intimate relationship, a power or status hierarchy . . . or a culturally defined relationship. . . . Because situational elements from all levels contribute to the outcome, the possibility exists that even without full causal understanding, altering one link in a chain of events might have prevented a violent event or prevented an assault from becoming a homicide.

Youth Violence

Much research has been done on the development of serious and violent juvenile offending careers and the risk and protective factors that influence them. In an analysis of this research, the Study Group on Serious and Violent Juvenile Offenders at the U.S. Department of Justice found that the majority of such offenders are male, tend to have problems with substance abuse, mental illness, and school performance, typically display early minor behavior problems that lead to more serious acts, and have disproportionately been victims of violence themselves (Loeber and Farrington, 1998). Serious and violent juvenile offenders differ substantially from juveniles involved in more typical, minor acts of delinquency: they tend to have earlier onset of delinquency and longer offending careers, tend to be chronic offenders, and are overrepresented in inner cities. The study group concluded that violent behavior is a result of the interactions of individual, family, school, peer, and neighborhood factors; joining a gang and becoming a drug dealer were more proximal risk factors (Loeber and Farrington, 1998).

Findings from another study indicate that gun ownership by adolescents is related to a wide range of delinquent behaviors, including gun carrying, gun crime, gang membership, and drug selling (Lizotte and Sheppard, 2001). In this Rochester Youth Development Study, 5 to 10 percent of the boys studied carried illegal guns, and about 6 percent owned a gun for protection by age 15. Joining a gang increased the likelihood of owning a gun for protection, carrying a gun, and having peers who owned guns for protection.

The most important lines of research on the causes of youth violence have focused on what the NRC panel on violence would have called "macrosocial structures." They point to such problems as decaying communities with limited economic and social opportunities, the consequences of which include ineffective socializing efforts of family, school, religion, and neighborhoods, the absence of parental supervision, and the diminished role of the family (Bennett et al., 1996). Neighborhood structural disadvantage and social disorganization have been found to concentrate deviant behavior, such as child abuse, low birthweight, cognitive problems, and later delinquency and violence, in some communities (Sampson, 1997).

However, what was anomalous in the major epidemic of lethal youth violence that peaked in the 1990s was not its social location, but its scale and its dynamics. The epidemic produced a level of youth homicides that was well beyond anything that would have been predicted from the demographic or social characteristics of the period. Moreover, the time profile of the epidemic had features often associated with the spread of

infectious diseases: it did not go up steadily, but zoomed up in a dramatic way and then suddenly dropped. Accounting for this pattern with social demographics is difficult for the simple reason that they did not change so fast or in the same way that the levels of youth violence did. Social conditions may have been setting the stage for the epidemic and channeling its location, but the particular ferocity of the epidemic could not be explained simply by structural characteristics.

Some criminologists argue that the increase in youth homicide in the 1990s was due to increasing propensities for offending in each age cohort and a demographic increase in the number of adolescents (DiIulio, 1995; Fox, 1996; Wilson, 1995). However, Cook and Laub (1998) showed that there was not an increasing propensity for violence among youth because the increase in rates of offending occurred in all cohorts, not just one, and in 1985 the rates of offending and victimization within these same cohorts were historically unremarkable. So it could not be that the violence was caused by the sudden appearance of a new, particularly violent group of young "predators" who differed from their older brothers. Their older brothers changed, too.

To explain what occurred, analysts turned to explanations that give a prominent role to a set of factors that would be considered microsocial processes, to situational factors, and to the kind of fast-moving cultural trends that are associated with fads. Blumstein (1995) hypothesized that the increase in youth homicide was a result of the nature of the crack cocaine markets. The low price of crack increased the number of transactions, creating a need for drug sellers to recruit a large number of new sellers. The resultant recruitment of adolescents into the drug market led young people to arm themselves for protection, which in turn caused violent encounters to become more deadly.

In a later study, Blumstein and Rosenfeld (1998) argued that the subsequent decrease in youth homicide could be due to increased stability in the crack market. The number of new crack users diminished, and those involved in the drug trade had the opportunity to develop dispute-resolution mechanisms other than violence. As a result, the need to keep recruiting youth as sellers abated, fewer territorial disputes erupted, and the need for youths to carry guns for protection decreased. In addition to changes in the drug markets, Blumstein and Rosenfeld (1998) identified other factors that could have contributed to the decline in youth homicide: economic expansion that created more opportunities for legitimate jobs, and police and community efforts to limit opportunities for the drug trade, remove guns from kids, and reduce conflicts among youth.

If the cocaine epidemic explains the inner-city epidemic of lethal youth violence, then one would have to conclude that the rural and suburban epidemics were of a different kind, for there is no evidence that the school rampages were associated with crack markets. The inner-city epidemic still could have had an influence on the suburban and rural shootings, through the images of violence and spread of a culture that made it imaginable that children would carry guns to school, from the fear and despair that these shootings might exacerbate among other adolescents who were having a difficult time adjusting to adult lives. Such a "second mechanism" might relate inner-city to suburban and rural violence. These influences of the inner-city epidemic on the suburban and rural epidemic of rampages are a different claim than the hypothesis that the two different epidemics were caused by the same external factors.

One could also explain the youth homicide epidemic of the 1990s by giving more emphasis to cultural and subcultural factors. Fagan and Wilkinson (1998) point out that there is no direct evidence of a causal link between adolescents' involvement in the drug trade and homicides committed by adolescents. They argue that the epidemic occurred as guns became an important part of social interactions among urban youth. The possession and use of a gun had become a symbol of power and control, a way to gain status and identity, and a means to enhance feelings of safety and personal efficacy among teenagers. The increased youth demand for guns, the available supply, and the culture that teaches kids lethal ways to use guns had a large and complex impact on the overall level and seriousness of youth violence.

Another explanation lies in the particularly fast-moving aspects of culture that are viewed as fads. Rock music and video games may have helped to spread a culture of violence among kids. The spread of gangs across the country may have provided a medium for the spread of commitments to violence and knowledge about how to use weapons. Gang culture may have spread even more quickly and widely than gang infrastructure, as suburban and rural kids who had never had contact with a real gang member took up the stance and behavior of the gang that they learned from movies. Klein (2002) suggests that, although many gang members migrate to other cities and bring their gang experiences and culture with them, the majority of street gangs are homegrown. The diffusion of gang culture—and youth culture—lends the appearance (and often reality) of similarity among such groups.

In the inner-city case studies in Part I, there is much evidence of the influence of gang culture, and in the suburban and rural case studies little evidence of it. There is some evidence of the influence of violent games and media in both the urban and the suburban and rural cases, but given the general popularity of these things among all adolescents, it is hard to know whether the communities and youth we examined are unusual in their enthusiasm for this sort of media. The shooters in the suburban cases may have been influenced by violent media, but not many of the

other kids were, and the subcultures one sees in the communities in which the rampages occurred were very different from the adolescent subcultures of the inner cities at the height of the crack epidemic.

Research on youth violence also points to the importance of "social information processing deficits" among adolescents (as summarized by Gottfredson, 2001). Impulsiveness and self-control are linked with problem behavior through cognitive processes. Antisocial adolescents tend to misinterpret social cues. They attribute hostile intentions to peers when none may exist. They have difficulty evaluating the likely consequences of their actions and considering alternatives. They also have trouble regulating behaviors in communication, including using appropriate eye contact and tone of voice. Several studies have linked these cognitive and behavioral deficits with peer rejection (e.g., Dodge et al., 1986; McFall, 1982; Perry et al., 1986).

Finally, contagion mechanisms may have played a role in producing the unexpected dynamics of the inner-city violence, and these mechanisms may have played a role as well in spreading the inner-city violence to the suburban and rural areas, or in producing the spate of school rampages independently of the inner-city violence. The important focus here could be imitative behaviors spread through an interested and open youth subculture by the media. It may be that the school rampage shooters took their inspiration from the youth violence of the inner city. Or it could be that one school rampage shooter took his inspiration from an earlier school rampage shooting with little connection to inner-city violence.

School Violence and Bullying

Many of the youth school shooters were reported to experience bullying. Bullying is not particular to schools; it also goes on outside schools and, like other forms of victimization, is imported. Although there is no universal definition of bullying, there is widespread agreement that it includes several key elements: physical, verbal, or psychological attack or intimidation intended to cause fear, distress, or harm to the victim; an imbalance of power, with the more powerful child oppressing the less powerful one; absence of provocation by the victim; and repeated incidents between the same children over a prolonged period (Farrington, 1993).

Bullying is surprisingly common. In his review of the research, Farrington (1993) suggests that over half of children have been victimized and over half have been bullies. Data from the National Crime Victimization Survey suggest that the prevalence of bullying is lower than what Farrington reports, but it still represents a large problem. In 1999, the percentage of students ages 12–18 who reported being bullied at school

during the previous 6 months was 10 percent for students in grades 6–7, 12 percent for students in grades 8–9, and 7 percent for students in grades 10–11. In a recent national survey of youth in grades 6 through 10, 30 percent reported some type of involvement in moderate or frequent bullying, as a bully (13 percent), a target of bullying (11 percent), or both (6 percent) (Nansel et al., 2001).

The prevalence of bullying is of great concern, as it causes immediate harm and distress to the victim and has negative long-term consequences for the victim's mental health. It also has negative consequences for the bully, since the bully may become more likely to engage in other aggressive behavior. Understanding bullying is important because it is related to crime, criminal violence, and other types of aggressive antisocial behavior (Farrington, 1993).

Farrington (1993) observes that bullies tend to be aggressive in different settings and over many years. Adolescent bullies tend to become adult bullies and then tend to have children who are bullies (Farrington, 1993). Like offenders, bullies tend to come disproportionately from families with lower socioeconomic status and poor childrearing techniques, tend to be impulsive, are more likely to be involved in other problem behaviors such as drinking and smoking, and tend to be unsuccessful in school (Farrington, 1993; Nansel et al., 2001). Olweus (1992) reported that individuals with a history of bullying had a fourfold increase in criminal behavior by the time they reached their mid-20s. Victims of bullying tend to be unpopular and rejected by peers and tend to have low school attainment, low self-esteem, and poor social skills (Farrington, 1993). There is evidence that social isolation and victimization tend to persist from childhood to adulthood, and that victimized people tend to have children who are victimized (Farrington, 1993; Nansel et al., 2001). Males who are bullied tend to be physically weaker than males in general (Olweus, 1978). Boys are bullies more than girls, but girls and boys are equally victimized (Farrington, 1993). Boys are overwhelmingly bullied by boys, and girls are bullied equally by boys and girls.

In general, bullying incidents occur when adult supervision or surveillance is low (e.g., playgrounds during recess). The most common location is the playground. Not all bullying incidents come to the attention of teachers, and teachers and other children do not always intervene to prevent bullying (Mellor, 1990; Whitney and Smith, 1991; Ziegler and Rosenstein-Manner, 1990).

Successful bullying prevention programs generally aim to alter the school environment to make norms against bullying more salient (Farrington, 1993). These programs provide information to the school community about the definition, level, and consequences of bullying. Prevention efforts seek to establish clear rules against and consequences for

bullying and to consistently enforce them. Attempts to create more communal social organizations are likely to be effective for reducing this form of victimization. Schools that tolerate bullying increase the level of bullying as well as the risk that an unusual act of retaliation will occur.

RESEARCH ON VIOLENCE CLOSELY RELATED TO SCHOOL RAMPAGES

In looking in detail at some of the characteristics of the school rampages, one can think about them as more or less similar to specific categories of violence. In this section, we examine research on the phenomena of mass murder, public rampages and work violence, and murders followed by suicides or crime sprees that look as though they were designed at least in part to produce a "suicide by cop."

Mass Murders

Mass murder is a very rare event. Defining a mass murder as an incident with four or more victims, one analysis of FBI Supplementary Homicide Report Data from 1976 through 1995 found 483 mass murders involving nearly 700 offenders and over 2,300 victims (Fox and Levin, 1998). This amounts to less than 1 percent of the more than 400,000 homicides committed during that period.

That analysis also compared mass murders with single-victim murders and noted a number of noteworthy differences. Mass murders are more likely to occur in small town or rural settings (43 percent) compared with single-victim murders (34 percent). Mass murders are not concentrated in the South, unlike single-victim murders. Mass murders are more likely to involve firearms (78 percent) than single-victim crimes (66 percent). And 40 percent of mass murders are committed against family members and almost as many involve other victims acquainted with the perpetrator, such as coworkers; this is more pronounced for mass murders than for single-victim crimes.

Mass murderers are usually older than single-victim murderers. While more than half of all single-victim homicides occur during an argument between the victim and the offender, it is relatively rare for heated disputes to escalate to mass murders (23 percent). Many mass murders are committed to cover up other felonies, such as armed robbery (39 percent). However, in the FBI data, an equal number of mass murders have unspecified circumstances (39 percent) because these crimes involve a wide array of motivations, including revenge.

Fox and Levin (1998) argue that a majority of mass killers have clear-cut motives—especially revenge—and their victims are chosen because of

what they have done or what they represent. Most commonly, the mass killer seeks to get even with people he knows—with his estranged wife and all her children or the boss and all his employees. The more specific and focused the element of their revenge, the more likely it is that the outburst is planned and methodical. Also, the more specific the targets of revenge, the less likely it is that the killer's rage stems from extreme mental illness. These observations on the nature of mass murderers fit well with the revenge motives and premeditated attacks described by the available research on youth school rampage shooters.

Levin and Fox (1996) developed a typology of mass murderers that divides revenge into three categories: (1) individual-specific, in which the offender targets particular people, most often an estranged spouse and children; (2) category-specific, in which the murders are motivated by hatred for particular groups or categories of people; and (3) nonspecific, in which killing is precipitated by the offender's paranoid perceptions of society. In the authors' view, the final two categories involve acts that are primarily instrumental—mass murders inspired by profit, such as contract hit men, armed robbers shooting witnesses, and murders that result from acts of terrorism.

These researchers also suggest a range of factors associated with the commission of mass murder that cluster into three types, reflecting themes of the 1993 NRC report on violence.

The factors are described as: (1) predisposers—long-term and stable preconditions that become incorporated into the personality of the killer; (2) facilitators—conditions, usually situational, that increase the likelihood of a violent outburst but are not necessary to produce that response; and (3) precipitants—short-term and acute triggers or catalysts. Predisposers include frustration and externalization of blame.

A critical condition for frustration to result in violent aggression is that the individual perceives others are to blame for his personal problems. The mass killer sees himself not as the perpetrator but as the victim. It may take years for this frustration to build; hence, mass killers are usually older. Given both long-term frustration and an angry, blameful mind set, certain situations or events can precipitate or trigger violent rage.

In most instances, the killer experiences a sudden loss or the threat of a loss, which from his view is catastrophic. The loss typically involves an unwanted separation from loved ones or termination from employment (Fox and Levin, 1998). Books, manuals, and magazines may provide technical guidance in committing mass murders. Anecdotal evidence on copycat mass killings is highly suggestive. A rash of schoolyard slayings, beginning with Laurie Dann's May 1988 shooting at Winnetka, Illinois, and ending with Patrick Purdy's January 1989 attack in Stockton, Califor-

nia, suggests the possibility of a fad element in which mass killers inspire each other (Fox and Levin, 1998).

With respect to likelihood, mass killers are frequently isolated from sources of emotional support. Many are cut off from the very people who could have supported them when times got tough. Some live alone for extended periods of time. Others move far away from home, experiencing a sense of anomie or normlessness. Of course, it is important to recognize that most people who feel angry, hopeless, and isolated do not commit mass murder; in many cases, they simply do not have the means. The availability of firearms is important as a facilitator to mass murder (Fox and Levin, 1998).

Public Rampages and Workplace Violence

Since schools are work settings for the faculty, staff, and administrators, youth school rampage shootings could be viewed as an extreme form of workplace violence. The U.S. Occupational Safety and Health Administration uses a three-part typology to describe the range of workplace violence: Type I, violence by people unrelated to the workplace (e.g., robbery); Type II, acts committed by people who are related in some way to an employee (e.g., domestic assault); Type III, violence between employees (includes the revenge killer).

In 1998, there were 709 workplace homicides in the United States, 4 percent of the 16,910 homicides committed that year (Bureau of Labor Statistics, 1999). In 1998, homicide was the second leading cause of death at work, accounting for 12 percent of 6,026 occupational deaths (highway accidents was number one at 24 percent). Like homicides generally, workplace homicides have been declining in recent years. Since the Department of Labor began collecting data in 1992, the number held steady at about 1,050 per year (0.9 per 100,000 workers) through 1994, and it has since fallen each year since 1995, reaching a seven-year low of 709 (0.5 per 10,000 workers) in 1998. The Bureau of Labor Statistics (1997) data also suggest that 80 percent of the homicides committed at work were committed during a robbery or commission of some other crime. Disgruntled workers, clients, or personal acquaintances (husband, ex-husband, boyfriend, ex-boyfriend, relative) committed the remaining 20 percent.

The U.S. Postal Service (USPS) experienced a widely publicized series of homicidal rampages by disgruntled current or former employees. In 1986, letter carrier Patrick Henry Sherrill killed 14 coworkers and himself at the Edmond, Oklahoma, Post Office. This was the first instance of a worker of "going postal," and some believe that it spawned a series of copycat crimes that lasted over the next several years. For example, five years later in 1991, letter carrier Thomas McIlvane killed four coworkers

and himself at the Royal Oak, Michigan, Post Office. From 1986 to 1999, 29 workplace homicide incidents involved postal employees either as victims or offenders (U.S. Postal Service Commission, 2000). There were 54 homicide victims in these incidents, including 48 postal employees. Non-employees were responsible for 14 of the postal worker homicide incidents. The motives were varied in these incidents; six were robberies, and others involved a dispute over debt, anger over mail not delivered when expected, and intimate relationships.

The U.S. Postal Service Commission on a Safe and Secure Workplace (2000) closely examined the 15 incidents of workplace homicides committed by current or former employees since 1986. Guns were used in all 15 incidents, and all incidents had a single offender. The motives included robbery, actual and desired intimate relationships, and workplace disputes. The commission observed that 14 of 15 perpetrators had troubled histories of violence, mental health problems, substance abuse, or criminal convictions. Five exhibited behavior prior to employment that should have excluded them from being hired.

Six homicide incidents committed by postal workers involved multiple victims; five of them involved retribution for personal matters, such as a spurned intimate relationship, or work-related troubles, such as termination from job or perceived unfair treatment. Of these five killers, three committed suicide at the end of the event. One mass murder was committed to cover up a robbery by a postal employee who was a cocaine abuser; he did not kill himself. The commission reported that in some cases of homicides committed by postal workers, there were warning signs. Three perpetrators had been fired for threatening behavior. In several cases, managers, coworkers, union officials, physicians, or counselors mistakenly assessed the perpetrators as unlikely to commit violence despite warning signs; in at least two cases, managers did not even report the threats to the Postal Service's Inspectional Services.

In its broader assessment of the risks of violence in Post Office facilities, the U.S. Postal Service Commission (2000) concluded that "going postal" is a myth. Postal workers were no more likely to physically assault, sexually harass, or verbally abuse their coworkers than employees in the national workforce. Postal employees were only a third as likely as those in the national workforce to be victims of homicide at work.

The levels of violence throughout the American workplace are unacceptably high: in 1999, 1 in 20 workers was physically assaulted, 1 in 6 was sexually harassed, and 1 in 3 was verbally abused (U.S. Postal Service Commission, 2000). One researcher suggests that bullying is a large problem in all workplaces and leads to the violent victimization of the person being bullied (Barron, 2000). Postal workers are no more likely to be the victims of these crimes than other U.S. workers. However, given the

publicity generated by the Post Office slayings, postal workers are more fearful than employees in the national workforce about violence in their workplace. Postal workers are six times more likely to believe that they are at greater risk to be the victim of violence from coworkers.

Homicide Followed by Suicide of the Perpetrator

Suicide following homicide is fairly rare. In the United States, city-level studies suggest that only a small fraction of homicides lead to the perpetrator's suicide. In Philadelphia, one study found that 4 percent of homicides lead to the perpetrator's suicide (Wolfgang, 1957). In Chicago, another study found that less than 2 percent of homicides lead to the perpetrator's suicide (Stack, 1997); the author speculates the perpetrators suffer from frustrated personal relationships, ambivalence, jealousy, morbid jealously, separation, helplessness, depression, and guilt. In Canada, where national data are available, homicide offenders commit suicide in about 10 percent of the cases; as the tie between the offender and victim is closer, the probability that the offender will commit suicide increases (Gillespie et al., 1998). The probability of suicide increases with offender's age and education, is higher when the offender uses a gun, and is higher when the victim is female (Gillespie et al., 1998). Homicide-suicide offenders, particularly incidents involving multiple victims, share some common elements with the youth school rampage shooters.

A review of the available research on homicide-suicides found that more than 90 percent of the perpetrators were male (Felthous and Hempel, 1995). When the victims are immediate members of the family or children, the proportion of female killers increases. The predominance of male perpetrators is not so lopsided when homicide-suicides occur in the context of intimate homicides, with some studies reporting as many as 50 percent of the killers as female in this context. The review also found that firearms are used more frequently in homicide-suicides than in spousal homicides alone. In studies in which perpetrators of homicide-suicides are compared with perpetrators of homicide alone, depression was far more common among the homicide-suicide perpetrators. The authors speculate that a core element of the motivation may be loss (Felthous and Hempel, 1995). The individual cannot perceive enduring life without a key element (such as their spouse, family, or job) and cannot bear the thought of the other person(s) carrying on without him, so he forces them to join him in death. When the loss is one of self-esteem, believed to be caused by nameless others or society, a violent, destructive, annihilistic blaze may seem the best final solution.

In the typology of homicide-suicides developed by these authors, two overlapping categories are very similar to youth school rampage shooters

(Felthous and Hempel, 1995). In the adversarial homicide-suicide, the event typically involves a disgruntled employee who feels depressed and bitter over his compromised employment or interpersonal conflicts that led to his dismissal. Although there is often a small kernel of truth to his complaints, the offender usually develops a persecutory delusion that specific individuals conspired to harm him.

In the pseudo-commando homicide-suicide, the offender selects a public place where many people can be slaughtered at once, and then he kills indiscriminately people with whom he has no relationship, formal or informal. The pseudo-commando can attack random people or may target some group of people who share a common characteristic. He brings to the scene powerful weapons, perhaps a small arsenal, and plenty of ammunition. The apparent lack of an escape plan is consistent with the presumption that the offender expects to die himself. The pseudo-commando typically forces the police to kill him. The perpetrator ensures his death by passive or active suicide, but he kills as many people as possible in a last-stand "blaze of glory." The pseudo-commando may be embittered, angry, and resentful; if mentally disturbed, excessive suspicion and paranoid thinking are features of the disturbance. Examples include Charles Whitman's mass slaying of 14 from a University of Texas tower; James Huberty's massacre of 21 people in a McDonald's restaurant in San Ysidro, California; George Hennard's slaughter of 22 people at Luby's Cafeteria in Killeen, Texas; and Marc Lepine's massacre of 14 women at the University of Montreal.

As suggested by the pseudo-commando offender, some suicidal individuals force police officers to kill them. This form of suicide is known as "suicide by cop," a term used by law enforcement officers to describe an incident in which a suicidal individual intentionally engages in life-threatening and criminal behavior with a lethal weapon or what appears to be a lethal weapon toward law enforcement officers or civilians specifically to provoke officers to shoot the suicidal individual in self-defense or to protect citizens (Hutson et al., 1998).

Research suggests that this behavior is uncommon but hardly rare. A review of files of officer involved shootings investigated by the Los Angeles County sheriff's department from 1987 to 1997 revealed that suicide by cop accounted for 11 percent of all officer-involved shootings and 13 percent of all officer-involved justifiable homicides (Hutson et al., 1998). The characteristics of the suicidal individuals included: 70 percent had a prior arrest or conviction, 65 percent abused alcohol or drugs, 39 percent were involved in domestic violence or a domestic dispute, and 63 percent had a psychiatric history (Hutson et al., 1998). Based on a review of five studies, authors of one study suggest that about 10 percent of police deadly force incidents involve suicide-by-cop situations (Homant and

Kennedy, 2000). These incidents rarely involve additional victims. Reviewing 123 cases of suicide by cop, Homant and his colleagues (2000) found that in 7 percent of the incidents, one or more people were killed by the perpetrator, and in another 7 percent of the incidents, one or more people were seriously wounded by him.

In the rare events that involve victims, the suicide-by-cop perpetrators share some characteristics with the youth school rampage shooters. According to one researcher, some suicidal individuals may prefer suicide by cop because they may see themselves as victims and set up the situation to prove it (Foote, 1995). He also points out a similarity to murder-suicide cases and warns that such individuals "may not hesitate to kill another to accomplish his or her death." Another researcher suggests that some may be seeking a final catharsis of inner rage by acting out a fantasy of dying in a shootout with police, taking as many people as possible (Gilligan, 1996). In their close review of 143 suicide-by-cop incidents, Homant and Kennedy (2000) identify 31 percent of the cases as involving direct confrontation, in which the subject plans ahead of time to attack police in order to be killed by them. One subtype of this category, the "kamikaze attack" (3.5 percent), involves the use of deadly force to attack a police station or a group of officers in spectacular fashion.

CONTAGION MECHANISMS

Criminologists have long noted that certain types of antisocial acts occur in waves. These are variously termed crime fads (Sutherland and Cressey, 1970), contagious violence (Sears et al., 1985), and deviant epidemics (Turner and Killian, 1987).

However, very little is known about the precise mechanisms that produce these clusters of violent incidents. This question has been most seriously and directly addressed in a literature that examines what are commonly called copycat crimes.

Copycat Crimes

Copycat crimes are very difficult to research. Most studies of the phenomenon rely on anecdotal evidence, which strongly suggests that the copycat phenomenon exists. For example, one study identifies a number of case studies, ranging from four youths who shot and wounded two Las Vegas police officers and who were alleged to be motivated by Ice-T's "Cop Killer" song to a 16-year-old California boy who killed his mother and admitted that he got the idea from the movie *Scream* (Surette, 2002). This study of serious and violent juvenile offenders found that one-quarter reported that they have attempted a copycat crime (Surette, 2002). The

juveniles who believed that the media and close friends particularly influenced their behavior also reported copycat behaviors.

Media coverage of terrorist events is believed to motivate copycat terrorist acts (Poland, 1988). An extensive review of the relationship between terrorism and the media concludes that while other factors are probably at least equally important, media coverage is sufficient to lead to acts of imitative behavior (Schmid and DeGraaf, 1982). According to one researcher, media coverage has two effects (Surette, 1990). First, anecdotal evidence indicates that coverage encourages false threats and pseudo-copycat reactions. For example, a May 1981 bombing at New York's Kennedy Airport was followed by over 600 threats the following week. Second, real copycat events follow in significant numbers in a process called "contagion" in the terrorist literature.

Much anecdotal evidence is available that such events as hostage bank robberies, hijackings, and airline bomb plantings occur in clusters (Schmid and DeGraaf, 1982; Livingstone, 1982). Claims of contagion have also been made about larger-scale incidents of violence, including racial disturbances (Spilerman, 1970), disorders in schools (Ritterband and Silberstein, 1973), political violence (Hamblin et al., 1973), and military coups (Li and Thompson, 1975; Midlarksy, 1970). One study shows that successful hijackings in the United States generated additional hijacking attempts (Holden, 1986). There were no contagion effects of unsuccessful hijacking attempts in the United States or any effects on U.S. hijacking attempts outside the country.

In general, the effect of the media on crime seems to be more qualitative (affecting criminal behavior) than quantitative (affecting the number of criminals) (Huesmann, 1982; Comstock, 1980; Donnerstein and Linz, 1995). Offenders seldom cite the media as a motivating influence. While there are positive correlations between watching violent media and aggressive behavior, people do not become aggressive or violent solely from watching television or violent movies (Philips, 1982a, 1982b; Garofalo, 1982; National Institute of Mental Health, 1982). One study reported that only 12 percent of inmates in their study cite the media as a cause in their criminality, ranking it second to last behind all other possible factors except for "too much junk food" (Pease and Love, 1984). However, the media were endorsed by 21 percent of inmates as a source of information about crime techniques; the media ranked fourth in developing techniques, behind "myself," friends, and fellow inmates. These researchers also conclude that except for isolated cases of mentally ill individuals, copycat offenders possess a criminal intent to commit a particular crime before they copy a particular technique.

Another study suggests that the media can encourage and instruct criminal behavior through priming processes (media-portrayed behav-

iors activating a network of associated ideas), desensitization to violence, and attitude changes, as well as the direct imitation of behavior (Berkowitz, 1984). For individuals who rely heavily on the media for worldly information and escape and have a tenuous grasp of reality, the influence can be significant. The available evidence supports the contention that predisposed at-risk individuals who are primed by media crime characterizations are the primary agents of copycat crime (Comstock, 1980).

One conceptual model shows copycat crime as resulting from the interaction of factors in four areas: the initial crime, media coverage, social contextual factors, and copycat criminal characteristics (Surette, 1990). The model denotes a process in which particular, usually highly newsworthy and successful initial crimes and criminals (after interacting with media coverage) emerge as candidates to be copied. The pool of potential copycat criminals is affected by media coverage and other social context factors, such as norms regarding deviance and violence, the existence of social conflicts, the number of opportunities available to employ a copycat crime technique, the nature and pervasiveness of media coverage, and the size of the preexisting criminalized population. The author concludes that copycat crime appears to be a persistent social phenomenon prevalent enough to influence the total crime picture mostly by influencing crime techniques rather than criminal motivations (Surette, 1990).

Suicide Clusters

The risk of an individual's committing suicide may increase as the number of suicides in his or her peer group or community increases or as the number of suicide reports or publicity increases in the media (Gould, 1990). Both anecdotal accounts and epidemiological research indicate that significant clustering does occur, but it does not account for a large proportion of total youth suicides.

An analysis of National Center for Health Statistics (NCHS) mortality data indicates that clusters of completed suicides occur primarily among adolescents and young adults, but even in this age group such clusters account for no more than 5 percent of all suicides (Gould et al., 1990a, 1990b). Further analyses of the mortality data reveal that significant time-space clustering occurred among teenagers (ages 15–19) and that these outbreaks of suicide occurred more frequently than expected by chance alone. Moreover, the significant clustering of suicide occurred primarily among teenagers and young adults, with minimal effects beyond age 24. Clustering was two to four times more common among adolescents and young adults than among other age groups.

Public health researchers have argued that suicide clusters are caused in part by social contagion (Robbins and Conroy, 1983; Davidson and

Gould, 1989). However, the hypothesized mechanism of suicide contagion has not been well defined. Grief, especially prolonged or unresolved grief over the death of a loved one, is known to be a risk factor for suicide (Bunch et al., 1971; Hagin, 1986). There are reports that the risk of suicide may be higher among grieving relatives of suicide victims (Cain and Fast, 1972). Cluster suicides appear to be multidetermined, as are other suicides, but imitation and identification are factors hypothesized to increase the likelihood of cluster suicides. Among susceptible individuals, the route of exposure may be direct (i.e., close friendship with a suicide victim or observing a suicidal act) or indirect (i.e., watching television news coverage of a prominent person's suicide or hearing about a suicide by word of mouth).

In the context of geographically localized suicide clusters, however, there seems to be a third ingredient in contagion, in addition to grief and imitation (O'Carroll, 1990). In some suicide clusters, the tendency to glorify suicide victims and to sensationalize their deaths has frequently fostered a community-wide preoccupation, even a fascination, with suicide. The resulting highly charged emotional atmosphere is believed by many to have contributed to causing suicide. Individual susceptibility (e.g., preexisting mental health problems, family history of suicidal behavior) is probably a major influence on the individual's motivation (Gould, 1990). The occurrence of a suicide or report in the media can also increase the knowledge of how to perform the behavior.

A large body of research literature suggests that various types of suicides and murder-suicides increase following other well-publicized suicides and murder-suicides (Philips 1978, 1979, 1980; Bollen and Philips, 1982). David Philips (1986) reported that suicides increase after reported suicides of famous people and after fictional suicides have occurred in daytime television soap operas. His methodology has been criticized (Baron and Reiss, 1985) and his findings have not always been replicated (Kessler and Stipp, 1984). However, the existence of imitative suicides is supported by more informal evidence and seems to be widely accepted (Platt, 1987; Clarke and Lester, 1989).

Fictional events on television do not seem to have a large effect on imitative suicide. Little evidence suggests that fictional suicides have a grave negative impact on the general population. However, nonfictional events must be viewed differently. Research suggests that teens are more susceptible to imitative suicide when exposed to news stories about suicides; however, imitation theory only accounts for a very small percentage of total teen suicides (Philips and Carstensen, 1986). Kessler and his colleagues (1988) replicated and extended the Philips and Carstensen (1986) study and suggest that only celebrity suicide stories were associated with an increase in teen suicides. However, recent data collected

from the Seattle Medical Examiner's Office and from the Seattle Crisis Center suggests that, although there was a significant increase in suicide crisis calls, there was no significant increase in completed suicides following the suicide of rock star Kurt Cobain in 1994 (Jobes et al., 1996). The lack of an apparent copycat effect in Seattle may be due to various aspects of the media coverage associated with the event that portrayed the act as tragic, selfish, and ultimately wasteful.

CONCLUSIONS

This review of research undergirds our investigation in Part I of six specific incidents of lethal school violence, including four that are considered school rampages. The research reviewed here has directed attention to the following broad classes of potential causes of the violence:

1. Macrosocial structures affecting the communities in which the rampages occurred.

2. Stable characteristics of the offenders that make them unusually susceptible to committing such acts. These characteristics are produced by some combination of social factors operating on individuals, and individual inheritances and experiences that they have.

3. Microsocial processes that create the social dynamics that make it important for the offenders to act violently, directing their violence towards more or less particular targets and enabling the action to be taken.

4. The failure of control mechanisms at the family, community, and institutional level that should have been successful in preventing and controlling the events.

Our interest tends to focus more on the last three of these classes of causal factors for several reasons. First, many of the macrosocial conditions implicated in causing high levels of violence are not present in the communities that experienced school rampages. These communities do experience poverty, discrimination, and alienation, and there are some weaknesses in the quality of the schools. But the communities as a whole seem better off in terms of these characteristics than the communities that have experienced higher levels and different kinds of lethal youth violence.

Second, both the cases of inner-city violence and the school rampage shootings seem to be caused as well as shaped by important microsocial processes that swept the offenders and their victims up in powerful circumstances that drove them to their specific acts. One can look at the events and imagine that if they had gone somewhat differently, the episode might have been prevented from occurring at all.

Third, the school rampage shootings in particular suggest a potentially important role for some kind of mental illness in the individual as a relatively important cause of the violence. Mental illness is apparent in suicide attempts and in symptoms of depression. It is also present in the fact that the grievances that the perpetrators seemed to feel, and the targets they chose to attack, seemed incomprehensible to others in the communities in which they occurred. The exaggerated sense of victimization and the arbitrary choice of victims most strongly suggest the presence of mental illness.

The more we looked at the cases of school rampages, the more they looked like other kinds of rampages rather than other kinds of youth violence or other kinds of school violence. Given the trends in this form of violence, it also seemed important to keep our eyes open to the possibility that there were contagion mechanisms operating during that period to generate the cluster of these events observed in the United States and in the world. In undertaking the case studies, the important goal was to conduct them in ways that would reveal whether these surmises have any supporting evidence.

NOTE

[1]Although one can separate out these different levels of analysis, treating the factors as more or less stable characteristics of either social groupings or individuals, the fact of the matter is that factors at one level influence factors at the next level—either up or down—and that many of these factors change over time both for individuals and for social groupings.