Chapter 13

Predicting School Violence

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INTRODUCTION

It has been over five years since the fateful day in April of 1999 when Dylan Klebold and Eric Harris began a shooting rampage at Columbine High School in Colorado that led to the deaths of 15 students and teachers, including themselves, and injuries to another 23 students. Recently, the release of a videotape showing both Dylan and Eric laughing and shooting trees with automatic weapons and shotguns six weeks before the incident has reinvigorated discussions of how such tragedies could be prevented (Associated Press, 2003). The echoes of this gruesome event have also continued to engage the attention of researchers, the public, and policy-makers and have led to whole scale changes in the security surrounding our schools. In the wake of this event and other high profile cases of school violence, school administrators have implemented myriad policies aimed at reducing the likelihood of these events re-occurring, including any number of safe school and zero tolerance initiatives (e.g., automatic suspensions or expulsions: 1) for weapons brought to school; 2) for threats made against students or administrators; or 3) for violating school drug policies) (Mulvey & Kaufman 2001). In some cities millions of dollars have been spent post-Columbine on the installation of metal detectors and the hiring of additional security guards for their schools (Vossekuil, Fein, Reddy, Borum, & Modzelski, 2002). Yet, these policy attempts to make schools more secure environments have some scholars suggesting that the measures will have the opposite effect by further alienating students from
the school administrators, making it less likely that students will convey possible threats to the faculty (Mulvey & Kauffman, 2001).²

In addition to securing the physical environs of the school, post-Columbine policy has also sought to be proactive in assessing the risk of violence within the student body. School administrators and policy-makers have become fixated on the idea of identifying students or “profiling” those who are more likely to engage in these violent acts in order to avoid future tragedies. Such policies have called on mental health professionals as well as students and faculty to name troubled students. In fact, the principal at Columbine High School circulated a memorandum after the tragic events requesting that students report other students who were acting in an unusual manner (Aronson, 2000). While such attempts to identify and predict school violence are clearly heartfelt, at present a vast number of problems inherent in the prediction of school violence suggest that these attempts will be less than adequate in achieving their stated purpose.

This chapter will first examine rates of school violence with special emphasis placed on “targeted” school violence. Targeted violence is a term first used by the United States Secret Service in another context; it was utilized to define the prediction of whether certain individuals would engage in serious attempts and attacks on public or prominent officials (Fein & Vossekuil, 1998). Most recently, targeted school violence has been adopted by the Department of Education and the United States Secret Service joint task force of the Safe School Initiative to describe “school shootings and other school-based attacks where the school was deliberately selected as the location for the attack and was not simply a random site of opportunity” (Vossekuil et al., 2002, p. 4). As such, targeted school violence will be used in this chapter to describe incidents of school violence like the Columbine shootings, in which the school and its surrounding area were specifically chosen by the perpetrators as the setting for their violent acts.³ Second, recent advances in risk prediction and assessment by mental health professionals will be examined, and the specific limitations of these techniques in predicting targeted school violence will be explored. Finally, several new directions for research and policy-making in this newly emerging subfield will be advanced.

**School Violence**

Although media portrayal of the Columbine incident (one reporter noted that the three major networks—i.e., ABC, NBC, CBS—aired over 296 news reports on Columbine [Stossel, 1999 as reported in Reddy et al., 2001]) and other school violence issues might have the public believing that such incidents happen frequently,⁴ schools remain one of the safest environments
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for today’s youth for both general school violence as well as targeted school violence (DeVoe et al., 2003). Research has found that high-risk youth from the most impoverished neighborhoods are much more likely to be the victims of crime outside rather than inside their school (Snyder & Sickmund, 1999). In fact, for non-fatal violent crimes (i.e., rape, sexual assault, robbery and aggravated assault) generally in 2001, school-aged children were about twice as likely to experience these events away from school as they were to suffer from them at school (DeVoe et al., 2003). From 1995 to 2000, the percentage of students victimized at schools has even dropped from 10 percent to 6 percent, and this trend is true for both violent and non-violent victimization (DeVoe et al., 2003). With the exception of bullying, which has evidenced a slight increase, all other forms of less serious violence in schools, such as physical aggression and petty theft, appear to be on the decline in recent years (DeVoe et al., 2003).

Researchers examining the relationship between the most serious forms of violence and the school setting found that for 1992–1994 and 1997–1998 less than one percent of school-age children’s homicides and suicides occurred in or around schools (Dwyer, Osher, & Wagner, 1998; Kachur et al., 1996). Moreover, for every year from 1995 to 2000, children between the ages of 5 and 19 were 70 times more likely to be murdered away from school than at school (DeVoe et al., 2003). Current estimates of the probability that a child will die at school indicate that this likelihood is extremely remote, with probabilities ranging between one in a million or one in two million (Reddy et al., 2001).

The fact that research amply demonstrates that schools overall are relatively safe environments for children does not, however, suggest that our society should be unconcerned with the recent rash of targeted school violence tragedies nor does it suggest we should be unconcerned with preventing such incidents. A joint task force between the United States Department of Education and the United States Secret Service has catalogued 37 targeted school violence events perpetrated by 41 individuals over a 25-year period, 1974–2000. The number of these incidents, unlike other areas of school violence, has remained fairly constant between 1994 and 1999, with three to five events occurring each year. Two thirds of these incidents resulted in the deaths of the perpetrators or other students, faculty, and school administrators (Voskuil et al., 2002). Although these targeted events represent a very small proportion of an already small number of school crimes, the loss of life associated with them, the destruction these events caused to the community in which they occurred, and the horror they hold for the general public all suggest that additional policy steps need to be undertaken to prevent future incidents. While hindsight is twenty-twenty, facts, such as that the vast majority of these attacks were pre-mediated and often others knew well in advance specific details of
the perpetrators’ plan, indicate that at least some of these tragedies may have been preventable (Dwyer et al., 1998). Other key findings identified by the joint United States Secret Service and Department of Education task force relating to incidents of targeted school violence conclude that: 1) attacks were rarely sudden and impulsive; 2) most attackers did not directly threaten their targets; 3) attackers often engaged in some behavior over the period prior to the attacks that indicated that they needed help; 4) attackers often evidenced difficulty dealing with significant loses; 5) attackers were often subject to being bullied, persecuted, or injured; 6) attackers often possessed access to weapons and used weapons prior to the attack; 7) no accurate or useful profile of attackers exists; 8) attackers were often stopped by means other than law enforcement (Vossekuil et al., 2002). The common belief that mental health professionals will be able to predict which individuals are most likely to engage in targeted school violence, however, is not a scientific or policy-making avenue that is likely to lead to success.

**RISK PREDICTION AND ASSESSMENT**

There are a number of different techniques that mental health professionals could utilize in attempting to categorize and predict which students are most likely to engage in targeted school violence. These include: 1) a prediction based on the assessor’s intuition and years of clinical experience (i.e., “pure” clinical prediction); 2) a prediction based on an actuarial assessment instrument designed to assess such violence (i.e., an actuarial prediction); 3) a prediction based on a combination of clinical judgment and actuarial factors (i.e., a guided clinical prediction); 4) a prediction based on the profiles of past perpetrators, (i.e., prospective profiling); 5) a prediction based on techniques designed by the Secret Service to “identify, assess, and manage individuals who pose a risk of violence to an identified or identifiable target” (Reddy et al., 2001) (i.e., threat assessment approach). Yet, all of these techniques suffer from significant weaknesses in predicting violence in general, and therefore suffer from significant weaknesses that suggest their application to the prediction of targeted school violence would be problematic. Moreover, the prediction of targeted school violence also presents a number of unique issues that renders these techniques less useful (Mulvey & Kauffman, 2001; Verlinden et al., 2000). Similar to, and expanding on, the framework suggested by Reddy et al., (2001), each of the general problems of these prediction techniques will be discussed in turn with specific difficulties that targeted school violence present for these methods highlighted.
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Pure Clinical Predictions

A large body of empirical literature suggests that mental health professionals relying solely on their clinical hunches are incorrect a majority of times in their predictions of future violence (Faust & Ziskin, 1988; Grisso & Appelbaum, 1992; Hart, Webster, & Menzies, 1993; Lidz, Mulvey, & Gardner, 1993; Melton et al., 1997; Monahan, 1981; Monahan & Steadman, 1994; Otto, 1992; Showalter, 1990). However, more recent research suggests that mental health professionals may not be as inaccurate as was originally believed for long-term predictions of violence (e.g., Mossman [1994] finds in his meta-analysis on this topic that clinical predictions were appreciably better than chance), and they may be even more accurate for short-term predictions of violence (Mossman, 1994; McNeil, Sanders, & Binder, 1998). Yet, a variety of other prediction techniques have demonstrated superiority to pure clinical predictions in various contexts (see e.g., Gardner, Lidz, Mulvey, & Shaw 1996; Harris, Rice, & Cormier, 2002).

Perhaps, the greatest weakness with mental health professionals relying on their judgment and clinical experience in making predictions of violence is that they often ignore the base rates associated with the event being studied. A base rate refers to the frequency of the event among the chosen population. Events with low base rates of occurrence, such as violent behavior generally and targeted school violence predictions in particular, tend to be over-predicted by clinical decision-makers, with these errors in judgment tending to increase as the base rates of the predicted event decreases (Grove & Meehl, 1996). As a result, clinical decision-makers often make false positive errors, predicting an individual will commit violent acts when he/she will in actuality not commit such an act (See Figure 1 for a 2 × 2 depiction of the types of errors a clinician can make).

With regard to targeted school violence, this suggests a substantial problem with a pure clinical prediction because the base rate associated

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<td>School Violence Act</td>
<td>True Positives</td>
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<tr>
<td>False Positives</td>
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<td>No School Violence</td>
<td>Misses or False Negatives</td>
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<td>True Negatives</td>
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*Figure 1. Different possible outcomes of predictions of targeted school violence.*
with such incidents is extremely low. For example, assume the base rate for committing a targeted violent act is ten in a million (it is actually closer to one in a million) and clinical accuracy in predicting such an event is 60 percent (which is far higher than any clinical method is likely to achieve).

As highlighted in Figure 2, of the million students in the sample, six would be correctly identified as likely to be violent, but 399,996 students would be misidentified as violent when they were not actually violent (i.e., 399,996 false positives). These false positive students would be subject to the stigmatization associated with being highlighted as high risk for violence, social service resources would be misused by focusing on counseling and treatment for these identified individuals, and these individuals would likely suffer additional restrictions on their freedom and behavior (Verlinden et al., 2000). Such attempts at labeling will harm a large number of students because these identified students, while still potentially benefiting from any treatment provided, are more likely to be injured by existing policies that suspend them or expel them from school. Even when these misidentified students are allowed to return to school (if they are ever allowed to return) the stigma associated with the label of being high risk for targeted school violence is likely to color others’ (i.e., friends, families, and school officials) perceptions as well as their own perceptions of themselves for years to come. Moreover, four actual perpetrators of future targeted school violence would have gone undetected (i.e., false negatives), and four school tragedies would have resulted. Given the low likelihood of an individual actually committing an act of targeted school violence, the costs associated with misidentifying such a large number of students as violent when they are not, and the likelihood that a substantial number of events would still occur, it appears that pure clinical predictions are extremely ill-suited for predictions of targeted school violence.
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It might, however, be possible for mental health professionals using such a technique to limit the pool of individuals (i.e., decrease the number of likely individuals from 1 million to a 100 or fewer) that might engage in an act of targeted school violence. This assumes that the mental health professional understands the factors that lead to such violence, and that they could use them in an optimal way in their decision-making. A limited amount of research in this area suggests the former is an incorrect assumption (Furlough & Morrison, 2000; Reddy et al., 2001), and a vast body of empirical literature indicates that even if the former were true the latter would still not be a fair assumption (e.g., Grove & Meehl, 1996). Research on mental health professionals’ risk assessment decisions demonstrates that clinicians engage in a number of cognitive errors that inhibit them from being accurate decision-makers in this context, including: 1) often relying on risk factors that they believe are related to violence risk which the empirical literature demonstrates that they are not (i.e., a diagnosis of a mental illness); 2) placing excessive weight on one or a couple of risk factors (i.e., the perpetrators employment instability) to the detriment of other more predictive factors; and 3) placing excessive weight on easily retrievable or salient factors (i.e., the heinousness of a previous violent act). Many of these problems in decision-making have also been demonstrated to exist even if the clinician is warned of these biasing tendencies (Grove & Meehl, 1996). In the end, it is unlikely that pure clinical predictions of targeted school violence will be accurate, and it is likely that such prediction will lead to a large number of students being misidentified as violent when in fact they are not.

Actuarial Predictions

Actuarial based predictions of general violence have demonstrated superiority over pure clinical predictions in several head to head comparisons (Gardner et al., 1996; Harris et al., 2002), but significant problems with this method are also unlikely to make them appropriate for the predictions of targeted school violence. Actuarial instruments are created from empirically verified risk factors (i.e., past history of violence, psychopathic personality, prior arrests, etc.), which have been demonstrated to predict the appropriate outcome for the population being studied (Monahan & Steadman, 1994). These factors are subsequently statistically combined in a manner that maximizes their ability to predict the intended outcome (Harris & Rice, 1999). In the area of violence risk assessment among those suffering from a significant mental illness, actuarial instruments have been developed, such as the Violence Risk Appraisal Guide (VRAG), which predicts such violence at a relatively high rate (Quinsey, Harris, Rice, & Cormier, 1998). This 12-factor instrument normed on a large sub-sample
of Canadians has been demonstrated in a number of studies to possess a classification accuracy close to 75% for violent offenders (Harris et al., 2002). An iterative decision tree developed by Monahan et al. (2001) on a diverse U.S. sample of civilly committed individuals has even demonstrated a substantially higher classification accuracy.

Yet, while generally superior to clinical predictions of violence, actuarial instruments suffer from a number of flaws generally, and have more specific additional problems that detract from their applicability to targeted school violence prediction and assessment. Researchers have questioned the utility of actuarial prediction instruments for general violence prediction on a number of grounds (e.g., Melton et al., 1997; Monahan et al., 2001). Scholars have criticized: 1) the generalizability of these instruments beyond their original sample; 2) the failure of these instruments to incorporate very rare but important risk factors, for example, a risk factor that would not be relevant to a large population of offenders but might be especially significant to a particular case (i.e., a significant physical disability); and 3) the failure of these instruments to include protective factors, characteristics that lower an individual’s risk (i.e., a supportive family) (Monahan, 2003).

As advances in risk prediction have occurred, investigators have also moved away from static (i.e., unchanging traits that predict violence like past criminal acts), dispositional (i.e., the person has a violent personality), and dichotomous (i.e., the person will either be or will not be violent) predictions of violence, and moved towards dynamic (i.e., predictor variables that may change over time, like employment stability), contextual (i.e., examining violent behavior as being controlled by a complex array of person-situation variables), and continuous risk assessments (i.e., people are either more likely or less likely to commit violent acts, and these acts can be prevented) (Borum, 1996; Borum, Fein, Vossekut, & Berflund, 1999). Actuarial predictions to date, while allowing for more graded predictions of violence, do not often incorporate dynamic or contextual factors in their assessment (Monahan, 2003). As a result, they often fail to allow for changes in an individual’s risk or place insufficient weight on the situational factors that might lead to greater violence for an individual.

Perhaps most troubling is the fact that no actuarial instruments currently exist for the prediction of school violence or targeted school violence, and there are a substantial number of reasons to believe that the existing instruments designed for prediction of serious violence among adults would not generalize well to this population (Mulvey & Kauffman, 2001; Reddy et al., 2001). First, with few exceptions, targeted school violence perpetrators have been adolescents. Many personality characteristics and behaviors are in flux during this turbulent developmental time period and often little stability in traits exists (Ollmanns & Emery, 2003). This lack of stability in criminal behavior in particular, has been aptly demonstrated by
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empirical findings (e.g., Moffit, 1993), and has caused the Diagnostic and Statistical Manual of Mental Disorders, 4th edition Text Revision (DSM-IV TR) as well as earlier iterations to recognize the normality of adolescent limited criminal behavior. The volatility associated with characteristics during the adolescent years is likely to cause actuarial instruments based on adult predictors to be less accurate for adolescents. For example, half of the 12 variables contained in the VRAG are simply not applicable to adolescents (e.g., marital status, failure on a prior conditional release, diagnosis of psychopathy, diagnosis of a personality disorder, number of previous non-violent offenses, diagnosis of schizophrenia). Furthermore, even if an actuarial instrument could be developed for this specific type of prediction for an adolescent population, its reliance on static, dispositional predictors would likely also cause its predictive accuracy to suffer (Mulvey & Kauffman, 2001).

Second, the type of prediction called for in a targeted school violence assessment is a far more specific outcome than the outcome called for by the commonly available actuarial prediction schemes. All the existing actuarial measures use serious violent incidents as their outcome measure. This outcome includes instances of assault, battery, and other serious behavior that would be of less interest to policy-makers interested in solely predicting targeted school violence incidents. Consequently, a prediction based on one of the existing measures might be generalizable to violent student acts in general but have limited utility in predicting specific targeted school violence events. Furthermore, the more general the prediction outcome becomes, the less likely the instrument will be able to predict the most serious and least common instances of violence (Mulvey & Kauffman, 2001). For example, if the broader outcome variable of bullying, physical aggression, and homicidal acts was used as the variable of interest in an actuarial scheme, the larger number of bullying instances and fights would make the instrument a better predictor of these outcomes rather than instances of homicidal acts.

Unfortunately, the limited existing research suggests that the risk factors for general adolescent school violence may be significantly different from those for targeted school violence. Verlinden et al. (2000) in their review of the available warning sign checklists for both general school violence and targeted school violence found that over 1/3 of the variables contained in targeted school violence checklists were not included in the more general warning signs for adolescent violence. In particular, recognized general school violence warning signs, such as: 1) poor achievement in school, 2) low commitment to school, 3) a history of school discipline problems, 3) bringing a weapon to school, and 4) being a victim of abuse or neglect, have not been similarly determined to be important risk factors in targeted school violence incidents (Verlinden et al., 2000). As such, any
actuarial instrument that focuses on broader school violence outcomes may be especially susceptible to failing to identify individuals who are the most likely to commit targeted school violence acts.

Third, actuarial instruments are not immune to problems associated with predicting low base rate events. Outcome variables with low base rates are more difficult to develop predictor variables because insufficient data exists to find and test useful variables. Both the VRAG and Monahan et al.’s (2002) interactive decisional tree relied on large population of high risk individuals (over 500) with a substantial plurality of them engaging in the specified outcome variable (over 30 percent). These large numbers of both future offenders and non-offenders allow researchers to narrow the field of appropriate predictor variables and develop the optimal manner for combining the relevant variables to predict the outcome of interest. Although the Secret Service and Department of Education’s intensive review of 41 perpetrators of school violence is a start, researchers are far from having a means to identify a large enough number sample of high risk children for targeted school violence who will also attempt to commit the identified act at a sufficient base rate (i.e., a substantial portion will actually attempt to engage in targeted school violence). Without this sample, investigators cannot determine which potential variables are the most accurate predictors, nor can they determine the most optimal means to combine the existing variable for accurate future predictions.

Even if an actuarial prediction instrument could be developed that contained relevant variables that were sufficiently predictive of targeted school violence, however, the actuarial instrument would likely still suffer from the problems associated with high false positive error rates.

To return to our 2 × 2 table and our previous example, it is likely that an actuarial prediction scheme would be a more accurate predictor of school violence than a pure clinical prediction method. Yet, even if the

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<td>9</td>
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<tr>
<td>True Hits</td>
<td>False Negatives</td>
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<tr>
<td>No School Violence</td>
<td>99,999</td>
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<td>False Positives</td>
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Figure 3. 2 × 2 table of actuarial prediction when the base rate is 1 in a 1,000,000 and the predictive accuracy is 90%. 
predictive accuracy of such a device reached 90 percent (the points mentioned previously suggest that such an achievement is extremely unlikely), it would still produce a large number of false positives. If the number of actual incidents of school violence was again 10 and the number of potential perpetrators was again 1 million, then 99,999 false positives would still result from the use of the instrument. These 99,999 students would confront the problems and liberty restrictions associated with being classified as high risk for such a behavior. In addition, one non-predicted incident of targeted school violence would still occur and one community would have to face the devastation that such an event evokes. The development of appropriate predictor variables or research examining useful warning signs for a high risk adolescent might allow the pool of potential assailants to be substantially limited (i.e., developing initial factors such that a high-risk population sample could be generated which evidenced a one in one-hundred risk of committing an act of targeted violence rather than one in one million), which could significantly decrease the false positives associated with an actuarial prediction. Yet, current research is a far from being able to successfully limit the field of potential assailants in this manner, and for all the reasons mentioned previously, it is unlikely that investigators will be able to achieve this goal in the near future.

To summarize, although actuarial risk assessment has shown considerable success in predicting serious adult violence for certain populations, no actuarial instruments currently exist for either general adolescent school violence or targeted school violence. It is also unlikely that useful actuarial predictors will be able to be created for targeted school violence because of the low base rates associated with these events, and actuarial instruments based on more general adolescence school violence are unlikely to generalize to this specific area. Finally, even if an actuarial instrument could be developed specifically for targeted school violence, it is likely that its accuracy would be such that a large number of false positives and significant number of false negatives would result from its use.

Guided Professional Judgments

Partially in reaction to problems inherent in actuarial schemes (i.e., poor generalizability, neglect of rare or protective risk factors, and neglect of dynamic or contextual variables), investigators have developed prediction methods that combine the flexibility of clinical judgments with the scientific accuracy of actuarial decision-making. These risk assessment methods utilize risk factors that have been empirically demonstrated to be linked to risk in the research literature, but they allow mental health professionals to determine how much weight to afford to each of the predictive factors in their final decision-making as well as afford them the opportunity
to add additional factors into their calculus (Webster, Douglas, Eaves, & Hart, 1997). The HCR-20 represents one example of the guided clinical judgment approach, and it is designed to assess risk of future violence in adults. It consists of a checklist of twenty items, 10 assessing past or “Historical” factors related to risk, 5 assessing present risk “Clinical” risk factors, and 5 assessing future “Risk” factors. Each item is scored either 0 (absent), 1 (possibly or partially present), or 2 (definitely present). Based on the scoring of the twenty items, the practitioner is supposed to offer a statement assessing whether the assessed individual is low, medium, or high risk (Webster et al., 1997).

The same criticisms that have been leveled against pure clinical predictions also have bearing on guided clinical judgments. In particular, the errors associated with assigning non-optimal weights to factors and combining factors in a manner that is subjectively appealing rather than empirically derived is still a significant problem for this method of assessment. This and other problems have led some scholars to suggest that guided clinical judgments are unlikely to be the equal of well-validated actuarial predictions of dangerousness in most contexts (Quinsey et al., 1998). The addition of clinicians being able to adjust assessments with outside factors (i.e., rare or protective factors) or their ability to use these factors in the risk assessment calculus, as allowed by most guided professional judgment instruments, is also controversial. While some commentators have argued it would be unethical for a mental health professional to rely exclusively on a guided professional judgment assessment or even an actuarial risk prediction scheme when a factor not represented in the instrument could be highly predictive in a specific case (Hart, 1997; Hanson, 1998; Monahan et al., 2001), others have suggested that adjusting either an actuarial instrument or guided professional judgment assessment with an outside factor is likely to decrease predictive accuracy (Harris et al., 2002).

With regard to the specific prediction of targeted school violence, there are also a number of factors that caution against the use of guided professional judgments for these assessments. Similar to the discussion of actuarial instruments, there are currently no valid guided professional judgment instruments available for the prediction of targeted school violence, and it is unlikely that schemes developed for other risk prediction contexts would generalize appropriately in this area. As previously noted, the warning signs that have been created for general adolescent school violence are also ill-suited for transfer to the area of targeted school violence prediction. However, some of the factors highlighted in the Secret Service and Department of Justice report on targeted school violence might one day be informative in fashioning a guided professional judgment instrument. It remains to be seen whether such an instrument would still produce a significant quantity of false positives, but the low base rate associated
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with targeted school violence incidents indicates that this hypothetical instrument would likely be a significant problem for this approach as well.

Prospective Profiling

Popular media, the public, and even a number of administrators believe that “profiling” potential targeted school violence perpetrators is likely to be an effective means of preventing future Columbines. Unfortunately, the scientific community, with good reason, does not share the optimistic pronouncements that are sometimes voiced for this method of prediction (Borum, 1996). As opposed to general profiling, which uses elements of the crime to focus the investigation on particular suspects, prospective profiling utilizes a description or characteristics of past individuals as a means to describe the likely characteristics of a future perpetrator (Pinizzotto, 1984). Under this rubric, it is believed that a sufficiently small quantity of past assailants’ personality characteristics or traits exist that can identify future perpetrators of similar acts with significant sensitivity so that the vast majority of individuals who will commit such crimes will be identified and that the profile or characteristics used to identify these assailants will be sufficiently specific so that they will not describe a large number of individuals who will not commit similar future acts. In a variety of areas, prospective profiling has not been found to be exceptionally accurate, often producing large numbers of both false positives and false negatives (Wrightsmann, 2001). One has to go no further than the attempts of certain profilers to describe the likely characteristics of the Washington, D.C. area sniper of 2002 to find evidence of considerable problems with this methodology. At that time, these profiles suggested that it was likely that the Washington sniper was a white male, 20–30 years of age, who was working alone and was likely to engage in a police confrontation that would end in his death (Court TV, 2002). This profile clearly failed to describe the African-American, two-person team who were apprehended by police without either perpetrators’ death. Similarly, it has been the conventional wisdom for years that three characteristics, bed-wetting, cruelty to animals, and fire setting, were predictive of the development of serial killers. This profile also has not garnered empirical support when it was further investigated (Reddy et al., 2001).

Given the low base rate associated with targeted school violence events, it is even more likely that any constructed profile of a school shooter will suggest a large number of false positives and a significant number of false negative results (Cooper, 2000; Morse, 2000; Reddy et al., 2001; Voskeiul et al., 2002; Sewell & Mendelson, 2000). Again, such a technique will likely result in a substantial number of students being identified as
high risk for violence with all the concomitant detrimental effects such a
label is likely to connote. That is not to say that “profiles” of the school
shooter have not already entered popular culture as well as the policies
of schools but only to highlight that such profiles are particularly likely
to be inaccurate because they are often based on limited, insufficient, or
no data (Reddy et al., 2001). A number of common profiles, including the
“classroom avenger profile” and the “school shooter” profile, indicated
that targeted school violence perpetrators were white males who were
loners and social outcasts. Unfortunately, the existing evidence does not
support these statements (Vossekuil et al., 2002). Such profiles have also
been questioned because they could be used as a means to identify stu-
dents based on existing societal prejudices, such as race, religion, or other
distinguishing features of individuals (Morse, 2000).

Much like other risk assessment measures, profiles are also likely to of-
er school administrators, students, and the public a false sense of security
in their schools. Results from the Secret Service’s study demonstrate that
there is no single set of criteria that describe most targeted school shooters
(Vossekuil et al., 2002). In fact, the often-reported shooter profile char-
acteristic, that is, as an individual who has been a school discipline problem,
was not supported in the majority of 37 incidents nor was the commonly
reported characteristic of the individual coming from a broken home (e.g.,
Vossekuil et al., 2002, found that two thirds of the perpetrators came from
two parent families and two thirds had never been in trouble at school).
In addition, while schools may devote all their counseling and treatment
resources to students who meet their profile, other at-risk students who
would benefit from such treatments are likely to be ignored, and they are
just as likely to become the next perpetrator of a targeted school violence
incident.

**Threat Assessment Approach**

Unlike the other risk assessment methods discussed, the threat assessment
approach is explicitly a risk management strategy rather than simply a pre-
diction scheme; that is, it is focused on both identifying individuals who are
most likely to commit violent acts as well as investigating means to lessen
these individuals’ risk to commit these acts (Fein & Vossekuil, 1998). Three
specific principles have been advanced as underlying the threat assessment
approach: 1) targeted violence follows from a specific process of cognition
and behaviors; 2) targeted violence is caused by an interaction among the
perpetrator, past stressful events, the current set of circumstances, and the
targets of the violence; and 3) successful prevention of incidents requires
that assessors pay special attention to behaviors that have been found to
precede violent acts (Borum et al., 1999).
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Although the threat assessment approach has resulted in the collection, examination, and dissemination of the most useful information concerning incidents of targeted school violence, and has also led to the debunking of the myth of a uniform school shooter profile, there are still a number of significant difficulties with this approach that argue against its whole scale adoption. First, this time intensive investigative approach was developed by the Secret Service in their attempts to protect public officials from potential assassins. As such, even its advocates acknowledge that it is unclear how well this management strategy will generalize to school violence incidents (Reddy et al., 2001). This generalizability issue is especially salient in the school violence context because the Secret Service is a specially designed organization whose primary purpose is to prevent future acts of violence against public officials. No similar organization exists in schools to undertake the intensive investigations necessitated by this approach. School officials are only likely to receive a minimal level of training in these techniques, and then they will be confronted with the problems of attempting to utilize this approach with limited resources, few or no trained investigators, and limited amounts of time. As a consequence, it is likely that school administrators and faculty will understand, utilize, and perform the threat assessment less ably than Secret Service agents whose primary job responsibility is to perform these assessments.

A second significant problem for the threat assessment approach is that it is not clear how individuals come to the attention of authorities using this approach. According to its advocates, a threat assessment may be initiated by any communication or concern for a student, but threats are not necessary for steps to be initiated. In fact, Voskuil et al.’s (2002) own data suggests that it unlikely for a direct threat to precede an incident of school violence (83% of assailants in his sample did not offer direct threats). Therefore, the question remains when using the threat assessment approach: how do you decide when to start to more actively investigating a youth? If there are no clear criteria when to implement the approach, then it is still very likely that a large number of false positives and a significant number of false negatives will result from well-meaning school administrators trying to prevent future violent incidents.

Moreover, this particular problem is likely to be exacerbated by the lack of training school officials have undergone in the threat assessment approach. A large body of psychological literature on decision-making suggests that when outcomes are ill-defined, less-trained evaluators (i.e., school officials) are more likely to revert to existing stereotypes and prejudices in making these decisions (Grove & Meehl, 1996). Therefore, school administrators are more likely to focus on factors irrelevant to risk in determining which students should be thoroughly assessed using the threat assessment approach, and a substantial number of false positives will result.
One possible indication for the implementation of a threat assessment by school officials would be evidence of one or any combination of several signs found in the Secret Service and Department of Education’s intensive study. Several key findings from their study might serve as initial factors in determining which students need more intensive supervision, including evidence of a student 1) planning an attack (93% of the school shooting incidents examined were premeditated) and 2) telling another student of his plans (81% of perpetrators told another party about their planned attack and smaller portion even planned the attack with another party); 3) experiencing a major loss (98% of assailants examined in the study experience such a loss with 66% experiencing a loss of status and 51% loss of a loved one); 4) experiencing bullying or persecution by school peers (71% of school shooter examined in the study felt that they were bullied or persecuted by other students); and 5) having possession of or access to weapons (61% of perpetrators in the study had possession of or access to handguns before the attack) (Vossekui et al., 2002).

Yet, while these factors offer insights into the characteristics of targeted school shooters who did carry out their plans, they offer less information concerning differentiating a “true” school shooter from a potential false positive. Without additional data examining how normative these risk factors or behaviors are among adolescents who do not engage in targeted school violence, it is not possible to determine how specific these attributes are to school shooters. For example, within a normal adolescent population 60% of students may have access to or possession of hand guns, in which case the Secret Service finding, that 61% of school shooters had access to or possession of a hand gun, would have no useful predictive accuracy in identifying a potential school shooter. Although many of these factors may still be predictive of targeted school violence when data on normative behavior of adolescent is collected, it still may be the case that using such indicators may cause a large number of students to be misidentified as potential school shooters (i.e., false positives). To carry this example further, the portion of the entire adolescent population that might engage in planning an attack on a school may be relatively small, but even a small percentage of the total number of adolescents, given the low base rate of targeted school violence events, would likely lead to many students being falsely highlighted as possible school shooters. Hypothetically, imagine that 1% of a sample of one million students have engaged in planning of an attack against their school. Such a finding only narrows the population of potential assailants to 10,000. Even if school administrators could accurately predict which students of these were most likely to engage in targeted school violence (which they likely cannot), there would still be a large number of misidentified students. Additionally, a large number of resources would have to be devoted to investigating these high-risk
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students, and these students would be stigmatized by the additional scrutiny they would face.

In the end, while the threat assessment approach may offer promise as means to collect and disseminate data concerning the attribute of school violence perpetrators as well as debunk myths concerning a typical school shooter profile, it is unlikely to lead to the prevention of significant number of targeted school violence incidents. The lack of clear criteria for school administrators to use in implementing this approach, the lack of training school administrators possess in the threat assessment approach, the lack of data available on the normative nature of the factors most common among targeted school violence incidents, and the low base rate associated with targeted school violence in general, all point to significant difficulties for the successful use of this approach.

CONCLUSIONS AND FUTURE DIRECTIONS

Given the innumerable problems inherent in predicting targeted school violence incidents, the question becomes, how can we prevent these tragedies if we cannot easily identify high risk students without inaccurately highlighting a large number of non-dangerous students? The answer may lay in the opposite direction of many of the high security measures and restrictive policies that have been implemented in schools following Columbine. The data collected by the Secret Service and Department of Justice clearly point out that the vast majority of these attacks are not impulsive and are clearly planned over a considerable period of time (Vossekuil et al., 2002) found that over two thirds of the perpetrators had created plans at least two days before the tragic event. In addition, it is clear that over three quarters of assailants told another student or sibling about their plan. As such, rather than increasing the security around school or expelling students for bringing a weapon or drug to school, it may be more useful to encourage greater communication among students and faculty and school administrators. Without schools in which students feel comfortable bringing information to the administration, it may be extremely difficult to prevent school shooting tragedies. Draconian penalties appear unlikely to encourage this type of open communication behavior in students, and they are likely to lead to greater levels of an "us" vs. "them" mentality among the students.

Researchers must also begin to investigate the factors identified by the Secret Service and Department of Justice within a normative adolescent population. Further knowledge regarding the prevalence of these behaviors within this group will lead to more useful data and greater potential discrimination between those students who will be more likely to engage in targeted acts of school violence and those who will not. However, it
should be noted that this research when collected, while informative, is not likely to be a panacea to the problem of preventing such acts. Low base rates associated with these incidents will always be a major barrier to identifying high-risk children by using this methodology.

Finally, we should keep in mind that although targeted school violence events have been perceived by the public as an epidemic, these attacks are extremely rare. Overall, schools remain one of the safest environments for our children, and rates of violence other than bullying continue to decline within their halls. It would be a mistake to devote substantial resources to programs and policies designed specifically to prevent these events without considering what effects these policies will have on the larger school environment.

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NOTES


2. This is a point to which I will again return in the final section when I address new directions for research and policy.

3. For discussion of more general school violence see the beginning chapters in this volume. The literature addressing adolescent risk factors for general school violence is also beyond the scope of this chapter; see Verlinden, Hersen, & Thomas (2000) for a review of this literature, and why it may be inappropriate to attempt to apply research on general adolescent risk factors to targeted school violence perpetrators.

4. A Time poll in 2000 indicated that 70% of teens and 59% of parents reported that they were afraid that such an incident could occur in their school (Morse, 2000).

5. Vossekuil et al.'s (2002) report sponsored by the U.S. Department of Education and U.S. Department of Justice indicated that the age range of the assailants in the 37 incidents examined was between 11–21 years of age.

6. Psychopaths are individuals who are superficially charming but lack normal emotional expressions of guilt, remorse, and shame. They also have a strong propensity to abridge the rights of others and to engage in multiple criminal acts. Psychopathy as measured by Hare Psychopathy Checklist (PCL-R), has often been found to be the best predictor of future violent criminal behavior and receives the largest factor weighting in the VRAG (Qunisey et al., 1998). Most recently, a juvenile version of the checklist has been created (see Psychopathy
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Checklist Youth Version [PCL:YV; Forth, Kosson, & Hare, 2003], but it remains to be seen if this construct will be a reliable predictor of adolescent violence in general (see Forthe & Burke, 1998 for some preliminary data on this issue) and targeted school violence in particular.

7. The warning signs that are available for school violence also vary greatly in the degree to which the signs they espouse have been validated by empirical findings (Verlinden et al., 2000); for checklists that appear to contain a large number of researched risk factors, see the American Psychological Association (1999) as well as the National School Safety Center (1998) lists.

8. For example, these scholars suggest that a direct explicit statement by the individual being assessed for violence (i.e., a statement such as, “After I leave here, I will go kill my husband with the gun I have in my purse”) represents a clear instance in which one should deviate from an actuarial scheme. The reasonableness of whether clinicians should deviate from an actuarial prediction based on such data or other less direct data, however, is an area of continuing controversy with proponents on both sides (Monahan, 2003).

9. These factors will be discussed in more detail in the section detailing threat assessment approaches to risk assessment.

10. It should be noted that this finding is in direct contrast to the threat assessment approach advocated by the FBI based on their intensive review of 18 cases of targeted school violence (NCADV, 1998). Their report highlights 28 risk factors in four categories (personality traits, family situations, school interactions, and social interactions), and suggested graded risk should be specifically based on the directness of the threat voiced by the potential perpetrator (NCADV, 1998).

REFERENCES


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