Chapter 18
Indicated Prevention of Severe Targeted School Violence: NETWorks Against School Shootings (NETWASS)

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Between 1999 and 2012, Germany experienced 12 incidents of homicidal violence targeting schools, resulting in the deaths of 20 teachers and 16 students (Leuschner et al., 2011). This means there have been more cases in Germany than in any country other than the United States (with more than 60 cases since 2001). In addition, German schools are confronted with hundreds of threats of severe school violence. In 2009, police recorded 231 rampage threats to schools in the federal state of Baden-Wurttemberg (Ziehfreund, 2010), 223 in Hesse (Bannenberg, 2011), and 136 in Berlin (Der Polizeipräsident in Berlin (DPiB), 2011). In response, all federal states have implemented emergency response plans designed to guide staff and students. Although such plans are important and necessary, emergency response by definition cannot prevent violent acts like school shootings. In order to promote prevention at an earlier stage, we developed the NETWASS program (Networks Against School Shootings) to enhance staff awareness and attentiveness, and increase their confidence in handling a student's development towards acts of severe targeted school violence. In terms of the Institute of Medicine model of prevention (universal, selected, indicated), NETWASS is an indicated prevention program,

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which addresses populations identified on the basis of initiation behavior and individual risk factors (Gordon, 1987; Mrazek & Haggerty, 1994).

In the present chapter, we describe the theoretical framework of NETWASS, putting the program into the context of a developmental perspective on school shootings, grounded in contemporary empirical research. Then, we discuss structural problems of violence prevention in schools, which are important for the NETWASS implementation strategy. The third section describes the different stages of the NETWASS model of crisis prevention. Section four gives an introduction to the evaluation design. We present preliminary data about the situation in schools regarding teachers' self-assessment of agency and fear of school shootings, and critical incidents at schools as reported by school principals and teachers before they started the training. Finally, we report selected results on how well schools implement NETWASS and discuss what kind of critical incidents were reported within a time period of 7 months after program implementation.

18.1 Adolescents on a Pathway to Severe Targeted School Violence

Research into the phenomenon of severe targeted school violence, especially school shootings, has produced three central insights that represent the theoretical foundation of NETWASS. The first is that such offences are not spontaneous, affect-driven acts resulting directly from the present situation, but involve critical long-term developments in the later perpetrator (O'Toole, 1999; Verlinden, Hersen, & Thomas, 2000; Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). Although these critical developments are not yet properly understood, several developmental models and offender typologies suggested during recent years indicate multiple developmental pathways towards an offense (Böckler & Seeger, 2010; Bondü, 2012; Cornell & Sheras, 2006; Langman, 2009; Levin & Madfis, 2009). All authors conclude that a developmental pathway toward a violent act such as a school shooting is accompanied by stressful events which are closely linked to the motives for the violent acts (Bondü & Scheithauer, 2009). Given the offenders' age, these stressful events are mainly experienced during adolescence and may include rejection by peers, the subjective impression of having been rejected, disciplinary actions by school authorities, loss of attachment figures, or the experience of unjustified teacher behavior (Kidd & Meyer, 2002; Leary et al., 2003). Additionally, previous research suggests that later perpetrators lacked appropriate problem-solving and coping strategies, impeding coping with these experiences of rejection or loss. Thus, such events cause feelings of "social marginalization" (Harding, Fox, & Mehta, 2002) or "invasion of identity" (Böckler & Seeger, 2010).

Research findings support the thesis that the pathway to an act of severe targeted violence is experienced in terms of what crisis theory (Caplan, 1961) calls a process of life crisis, characterized by stressful events, which represent threats to identity and

well-being. Due to misinterpretation of stressors or lack of ability to cope adequately with them, the crisis state is characterized by the fundamental breakdown of primary and secondary appraisal where rational problem-solving becomes impossible and the later perpetrators have great difficulties managing subjective feelings and frustrations (Lazarus & Folkman, 1984). The probability of experiencing such a crisis increases when the individual is highly vulnerable, for example because of emotional disturbances or mental disorders (e.g. narcissistic personality disorder or symptoms). This argument can also be illustrated by research findings on school shootings: Bondü (2012) reports evidence of heightened vulnerability among seven German offenders, who displayed characteristics like low self-awareness, introversion, dysfunctional coping, social instability, and poor conflict-resolution skills, originating from and interacting with mental health problems in certain cases. Newman, Fox, Harding, Mehta, and Roth (2004) argue that "individual vulnerabilities" are one of five necessary factors for a school shooting (along with marginality, cultural scripts, failure of surveillance systems, and access to guns) which aggravate the impact of social isolation. In his analysis of ten American cases, Langman (2009) reports that all of the perpetrators showed individual problems and could be assigned to one of three types: traumatized, psychotic, or psychopathic.

Because of their lack of coping skills, perpetrators choose inappropriate ways to deal with their situation and express their feelings of despair, revenge, and anger. Cultural scripts such as past school shootings, media violence, and notions of masculinity and whiteness provide powerful—and inappropriate—"problem-solving" models. Former school shooters and avenger figures in comics, films, and computer games negotiate ego-weakness, show virility, and exhibit a godlike power of decision over life and death, and are attractive role models for these adolescents. Such cultural scripts serve a foil for identification and are central to fantasies, as demonstrated by numerous perpetrator's writings, internet presentations, and diaries (Gaertner, 2009; Gasser, Creuzfeldt, Näher, Rainer, & Wickler, 2004). In this manner, painful experiences and crises lead to—or at least reinforce—plans for violence, if the individual lacks adequate problem-solving skills for his or her situation. There is some evidence that the actual realization of an offence is also facilitated by stressful events. Bondü (2012) shows that most of the seven German perpetrators she studied had experienced loss (e.g. of attachment figures, of future perspectives because of suspension) shortly before committing the violent act. Accordingly, we identify two kinds of stressful events on the developmental pathway toward a violent act, differentiated by their proximity: early events are causes for feelings of social marginalization or invasion of identity, while late events are "flashpoints" for concrete realization of an offense. This heuristic description of a developmental pathway illustrates that the student's development towards an offense against his or her school is accompanied or initiated by personal crisis. The crisis may be triggered by a multitude of different events, where there is evidence that spectacular acts of violence against students, school staff, etc. can be interpreted as the perpetrators' way of "dealing" with the crisis.

But how do we detect a student's critical development toward severe violent acts? The answer to this question revolves around a second insight from contemporary research. Retrospective studies of school shootings show that in most cases

perpetrators engaged in "conspicuous" behaviors that pointed toward the planning of an act of violence and/or exhibited so-called leaking, in the form of written, spoken, or pictorial announcements of violent intentions (direct leaking) or communication of violent fantasies or an intense interest in previous school shootings, weapons, and death (indirect leaking; Heubrock, Hayer, Rusch, & Scheithauer, 2005; O'Toole, 1999; Vossekuil et al., 2002). Leaking, generally repeated, has been observed prior to every school shooting in Germany analyzed to date (Bondü, 2012) and in most international cases (O'Toole, 1999; Vossekuil et al., 2002). It did not pass undetected, but caused others to be concerned (Bondü, 2012). Therefore, identifying leaking is the most promising approach for prevention efforts. Because leaking is a "construct," usually based on retrospective analysis, it cannot be used as reliable predictor for school shootings. However, leaking can indicate a personal crisis or critical psychosocial/emotional development and thus represents a possibility for detecting students who need attention. Anyway, as results from the Berlin Leaking Project demonstrate, not all of the students who showed conspicuous behavior in terms of leaking would or could have ever realized an act of targeted school violence (Bondü et al. in press).

The third insight of school shooting research is that such acts cannot be explained by "single causes" but rather by multiple factors. There is a broad scientific consensus that school shootings result from complex interactions of psychological, sociocultural, structural, and situational risk factors (Bondü & Scheithauer, 2011; Newman et al., 2004). Typical risk factors include peer rejection, negative experiences with teachers, fantasies of violence and revenge, lack of parental control, mental abnormalities, suicidal tendencies, extensive consumption of violent media, and easy access to weapons (Leuschner & Scheithauer 2012). These factors are not sufficient conditions for school shootings, in the sense of "causal risk factors," but can usually be found in various combinations in retrospect. So, while there is no consistent perpetrator profile for school shooters, considering these (psychosocial) risk factors in combination with leaking behavior offers a promising approach (Bondü, 2012).

What did we derive from international research for the NETWASS program? On the basis of the first insight—preoffense developmental pathways—NETWASS follows a developmental approach recognizing severe targeted school violence, especially school shootings, as an extreme endpoint of a critical, individual development trajectory, a stepwise process moving towards violence that can be interpreted as the expression of a personal psychosocial crisis. If school staff become aware of a student's personal crisis and intervene, a critical development towards violence may be stopped and thus an act of severe targeted school violence may be prevented. For this reason the NETWASS project offers a crisis prevention model to help teachers to intervene early.

The second insight, that leaking represents observable behavior relating to violence as an individual strategy for dealing with life events or crises, may be observed by school staff, and is much more specific than general risk profiles, makes leaking the central starting point for the NETWASS prevention approach.

The third insight—that school shootings have multiple causes—is reflected in the NETWASS approach by combining the detection of leaking behavior with an

assessment of risk factors in a dynamic understanding of the student's individual development. This strategy reduces false positives and false negatives. If school officials follow up signs of leaking, for example by considering further information about the student supplied by other teachers, and initiate suitable crisis (pre-)intervention measures, a critical development towards a crisis may be averted. Thus, while severe targeted school violence cannot be predicted with great accuracy, it may still be prevented. Sensitizing school staff to leaking behavior and critical developments in students creates the possibility of early intervention and flexible reaction in individual cases while simultaneously avoiding hysteria and stigmatization by underlining the unlikelihood of school shootings and drawing teachers' attention to students in crisis.

18.2 Structural Problems of Prevention in Schools

For the development and implementation of effective prevention at the school level, scientific findings on individual developmental pathway (risk factors and leaking) are a basic but insufficient requirement. Knowledge must also be transformed into "practical frameworks" that can in fact be implemented by school staff and others. Thus, it is necessary to analyze the organizational structure of schools and other relevant institutions and the behavior of responsible individuals. Several structural problems concerning the handling of threats of violence and the detection of psychosocial risk factors at the school level must be taken into account. In their case study of two school shootings, Fox and Harding (2005) found that loss of information within the school system caused by "organizational deviance" was one reason why school staff often failed to recognize leaking behavior or other indications of emotional trouble prior to acts of violence. Organizational deviance includes institutional memory loss and task segregation, which lead to structural secrecy and fragmentation of information across individuals within schools and across schools within school systems. From the experience of NETWASS implementation in Germany, we can add the problem of information transfer between schools and the wider network of relevant institutions, such as police, school psychologists, and youth welfare departments. Effective prevention approaches must ensure that no information is lost within schools or the wider social support system. This implies the need to establish effective organizational prevention structures within schools to guarantee information flow and assign responsibilities.

A second problem is school staff's lack of knowledge about contemporary youth culture, normative youth development, and dynamic group processes. Our research in German schools shows that teachers have only marginal knowledge of these issues and may have problems distinguishing critical developments from expressions of youth culture or specific lifestyles (Leuschner et al., 2011). If teachers do not know about first-person shooters or popular cultural scripts among youth (e.g. music and films that glorify violence), they have no possibility to detect leaking. For this reason, prevention approaches must take up the challenge of expanding not only

specific knowledge about leaking and risk factors but also general knowledge about youth culture and normative youth development.

As already mentioned, research shows that in a large majority of cases later offenders directed threats and leaking towards peers. The transmission of this information to teachers or other officials enhances the likelihood of preventing a violent act (Daniels, Bradley, & Hays, 2007; Vossekuil et al., 2002). Unfortunately, adolescents often avoid speaking about peers' problems or conspicuous behavior to school staff or other adults. This has been termed the "code of silence" (Fein et al., 2002). Prevention of severe targeted school violence thus requires efforts to unlock the code of silence, for example by fostering a good school climate and establishing trusting relationships between staff and students.

Finally, there are structural problems of response. Even if school staff are able to detect indicators for critical developments, they need external support to react adequately. Often schools possess only limited capacity for dealing with a student's crises or threats because of lacking pedagogical knowledge, time, and internal social support. Only a few schools in Germany have their own social worker or school psychologist. These problems often lead to deficiencies in response strategies. In addition, cooperation between schools and social support agencies is often underdeveloped or deficient due to staffing shortages, data protection issues, or inadequate communication. Therefore, effective violence prevention means embedding schools within a wider network of social support agencies, facilitating strategies to link schools together and encouraging them to establish professional networks.

18.3 The Networks Against School Shootings Prevention Model

To find out how prevention of severe targeted school violence could work at the school level, we conducted a pilot study as part of the Berlin Leaking Project, evaluating training for teachers to identify and report leaking behavior among students in eight schools in Berlin (Bondü & Scheithauer, unpublished manuscript). In each school, a 30–60-min information meeting was conducted. introducing the project to teachers and informing them about leaking, risk factors for school shootings, and emergency responses. They were asked to choose a "leaking appointee" from their department to function as a contact person for teachers who witness leaking or threats and as a coordinator for collecting information about leaking. Teachers were asked to report leaking incidents during a 6–9 month period. The participating teachers completed a questionnaire after the information meeting (t1) and 6–9 months later at the end of the reporting period (t2). Most teachers evaluated the information meeting positively. They reported feeling less worried and having a broader repertoire of reactions to leaking and greater knowledge of emergency responses. After some initial skepticism, teachers accepted the idea of having a leaking appointee at their school (t1: $M = 2.45$, $SD = 0.97$; t2: $M = 3.57$, $SD = 1.09$; $t78 = -5.52$, $p < 0.001$, $d = 1.08$; five-point scale with $1 = \textit{very bad}$ to $5 = \textit{very good}$). Despite these results, teachers also reported feelings of insecurity about their ability to assess leaking and expressed a strong wish for further support from the police and

school psychologists. The pilot study concluded that teachers had little knowledge of leaking and other risk factors, but were open and receptive to instruction in a brief training session. It also seemed that they responded best to interactive training sessions accompanied by practical examples.

Based on these experiences and the international research findings on school shootings and threat assessment (Reddy et al., 2001), as well as an analysis of the legal and administrative conditions applying to German schools, the NETWASS project was established to continue and expand the work of the Berlin Leaking Project and develop a prevention model. The NETWASS crisis prevention model combines the advantages of the threat assessment approach (Cornell et al., 2004; Cornell, Sheras, Gregory, & Fan, 2009) with a more general perspective of crisis prevention and crisis intervention in schools. The central goal is not merely to deal with threats but to help students in crisis. The NETWASS crisis prevention model provides a developmental perspective and an organizational structure for effective school-based crisis prevention. The comprehensive goals of the program are to protect students and staff against severe targeted school violence, to deal with threats and leaking, and to improve the security situation in German schools.

For several reasons it did not seem pertinent to copy U.S. threat assessment approaches (Cornell & Sheras, 2006) one to one in German schools. First of all, it appeared difficult to implement threat assessment without generating negative conceptions of "student as threat." Teachers are very sensitive and critical towards security measures that create any outward impression of reducing students to potential security risks. Instead, NETWASS strives to avoid stigmatization and hypersensitivity by focusing on identifying crises and initiating help. Formal emergency guidelines and legal considerations place tight constraints on internal evaluations of the seriousness of student behavior (especially in cases of direct threats of violence, suicide, or rampage, or possession of weapons). The legal framework requires the development of a threat assessment/crisis prevention system specific to the situation at schools in different German states (in Germany, the federal states rather than the state government are responsible for education).

18.3.1 The NETWASS Crisis Prevention Model

The main objective of the NETWASS prevention model is the early indicated prevention of school shootings and severe targeted school violence, addressing threats and leaking behavior as indicators of a critical development towards violence. This may mean threats expressed in words or gestures or incidents of violence against others or self (including special interest in violent cultural scripts). Risk factors for school shootings identified and discussed in relevant studies (e.g. bullying, use of violent media content, mental stress) are also considered. However, as the psychosocial risk factors for school shootings have a broad scope and cover general problem behaviors of adolescence, the NETWASS prevention model encounters not only critical developments specific for violent behavior, but also critical developments of students in general. Combining behavior assessment with an assessment of

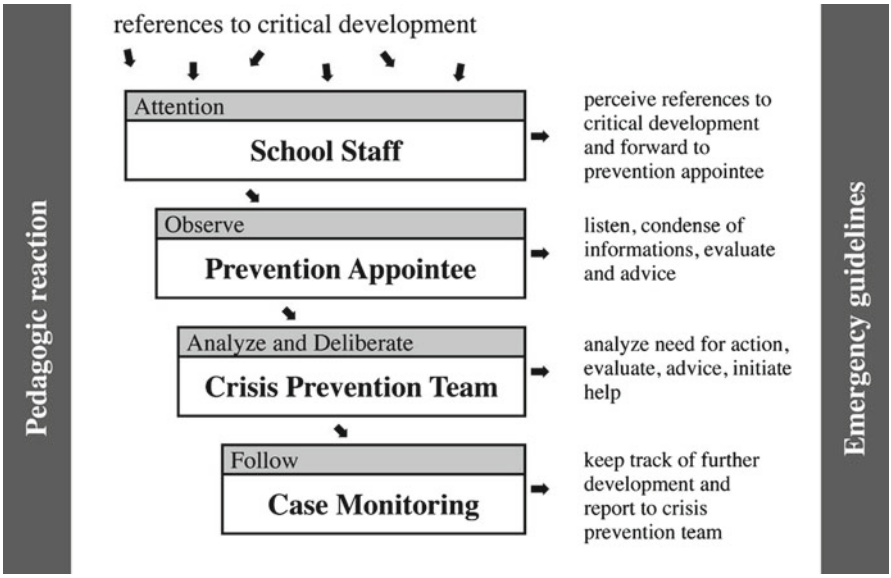

Fig. 18.1 NETWASS crisis prevention model. *Source*: Panno et al. (2010), p. 30, translated

psychosocial risk factors is a productive strategy for crisis prevention and intervention. The core approach of the NETWASS prevention model is to enhance teachers' awareness of and attentiveness to signs of leaking behavior, threats, and risk factors, and to strengthen the sense of responsibility among teachers and students (Leuschner et al., 2011). Secondary school teachers in particular can learn to differentiate relevant indicators from unproblematic situations and behaviors. Relevant indicators for student crisis should be bundled and discussed in one central place within the school so as to be able to initiate action and support for students at risk. The prevention model works like a filter in which information is collected and centralized, with only the most serious cases passed on for consideration by a crisis prevention team. Altogether the prevention model divides into four process steps, which are described below (Fig. 18.1).

At every step it is possible to initiate a standard pedagogic response or an immediate safety measure according to the needs of the case.

18.3.1.1 Step 1: Awareness—Sensitizing School Staff for Warning Signs

The crisis prevention procedure starts when a member of staff becomes aware of leaking or other indicators of critical developments, including reports and observations by other students. Students also may observe leaking, so the NETWASS project encourages teachers to foster an atmosphere of trust between students and staff. Students are not be asked to observe their peers or to "snitch," but encouraged to share concerns and seek help for students who seem to be troubled.

At the first step all members of school staff are asked to report all warning signs (leaking and certain risk factors) they become aware of that are not clearly explainable by the concrete situation to a central crisis prevention appointee (see below). Staff are asked to consider one central question in particular: Can the observed or reported conspicuous behavior (leaking, threats) or situation be explained by the actual situation and, if not, does it contain signs of critical development or individual crisis? A fight following a verbal insult would be an example of a "situational" explanation. In such cases, the teacher intervenes to bring about a pedagogical resolution that is accepted by students. Nor do teachers need to report incidents without sustained intention to harm (e.g. symbolic "shooting" while playing cops and robbers), misunderstood humor (e.g. "I'm gonna kill you" said as a joke), or situational expression of anger if followed by an apology (e.g. spoken threat after a defeat in a soccer game).

In any other case, information should be reported to the crisis prevention appointee. If in doubt, teachers should report their observations and thoughts to the crisis prevention appointee. As well as observing facts, school staff are also asked to trust their "gut feeling": their acquired professional perception that in combination with training allows them to identify maladaptive developments and behaviors. Situations which cause bad feelings or anxiety should also be taken seriously, as should situations where teachers are doubtful because their information is incomplete or based on rumor.

There are several reasons why it is important that the school's internal reporting should be in writing. First, writing down observations requires teachers to find time for reflection within stressful working day and fosters serious answers to the central question, avoiding hasty conclusions and possible stigmatizations. Second, written reports can function as emotional relief and as a formal safeguard. Finally, written reports are important for internal bundling of information about critical developments. In order to prevent information loss and task segregation it is very important that the crisis prevention appointee collects and merges all documents. The NETWASS project offers reporting templates that can be adapted to specific requirements.

The NETWASS model differs from some other threat assessment approaches in that teachers are asked to consider not only threats but also other forms of conspicuous behavior that could be signs of leaking, such as intensive preoccupation with violence, weapons, or past school shootings (Fein et al., 2002). Additionally, teachers should be aware of a coincidence of several risk factors such as social isolation, rejection, or experiences of loss.

18.3.1.2 Step 2: Overview—Crisis Prevention Appointee

Building on the Virginia Model for Student Threat Assessment (Cornell & Sheras, 2006) and the experience with "leaking appointees" in the Berlin Leaking project, the NETWASS crisis prevention model asks schools to nominate a central contact person, the "crisis prevention appointee." This responsibility is formally held by the school principal, but may be delegated to a specially trained teacher or school social worker.

The crisis prevention appointee should be a person that is accepted by the entire school staff as well as the students, and should ideally be provided with additional time for this function. Schools are recommended to appoint at least two crisis prevention appointees to allow for absence and illness and to create opportunities for exchange and deliberation. Our experience shows that larger schools tend to nominate more than two prevention appointees, for example one per department.

The crisis prevention appointee functions as the main contact person for all staff members who notice leakage or risk factors or would like to share concerns about a critical development in a student. The main objective of having a central contact person is to bundle information within the school and counteract "organizational deviance" (Fox & Harding, 2005). The crisis prevention appointee has an information advantage compared to other staff members who always have only selective information about the situation of a student.

The prevention appointee is thus able to consider not only single pieces of information, but the totality of observations, and may therefore identify the necessity for urgent intervention or the collection of further information (Fox & Harding, 2005; Vossekuil et al., 2002). To prepare such a decision the crisis prevention appointee is asked to collate the existing information about any student who comes to his or her attention, such as reports, class register entries, and student files.

Once the prevention appointee has been approached by a concerned colleague, he or she will look for a near-term opportunity for a closer discussion of the concern. This structured conversation should follow a simple interview guide, starting out with the question, what caused the colleague's concern, followed by questions about the student's family, school performance, and social situation among peers, leisure activities, friends, and characteristics. Here, additional information is systematically collected in a concerted exchange about the student's situation. Possible misunderstandings and misinterpretations may therefore be resolved. Additionally, the member of school staff who reported the incident can be disburdened, because she or he knows that the report is taken seriously. After the consultation, the crisis prevention appointee must decide how to proceed. If the case cannot be explained by the concrete situation on consideration of all additional information, or the crisis prevention appointee is in doubt or needs more information, he or she must call the crisis prevention team into action. It is strongly recommended that schools provide supervision possibilities for the crisis prevention appointee.

18.3.1.3 Step 3: Consultation and Threat Assessment—The Crisis Prevention Team

The crisis prevention team is the heart of the NETWASS crisis prevention model. It consists of the crisis prevention appointee, the school principal, other members of staff who have received NETWASS training, and possibly the homeroom teacher, a social worker, or other staff who know the student well. Forming a multidisciplinary team (teachers, school social worker, school psychologists) creates heterogeneity, reflects different perspectives, and advances the deliberation process. As police in

Germany are obliged to file a charge as soon as they become aware of any statutory offence, schools may be reluctant to notify a law enforcement representative immediately. As the experience from our pilot study and the data presented below show, schools are very reluctant to invite any external partners to the first consultation on a critical development in a student. The NETWASS approach encourages schools to invite a law enforcement professional and other relevant partners to the crisis prevention team when needed, but leaves it up to the principal to decide whether to involve outside instances immediately or later in the process (except for cases that require immediate police action under state emergency guidelines). School psychologists can also be members of the crisis prevention team, but they may not be able to participate in all cases because of their responsibility for multiple schools. Some German states, for example Berlin, have school psychologists with special expertise in violence prevention and conflict management who can support crisis prevention efforts. For this reason, we leave it to the school and the school psychologist to determine when to involve them in the team.

The crisis prevention team discusses and evaluates all indications and additional information in three steps:

1. Firstly, a threat assessment to evaluate the probability of a violent act based on 11 questions developed by the U.S. secret service (Fein et al., 2002). These include: What are the student's motive(s) and goals? Have there been any communication suggesting ideas or intentions to attack? Does the student have the capacity to carry out an act of targeted violence? Is the student experiencing hopelessness, desperation, and/or despair?
2. After the threat assessment, the crisis prevention team should evaluate the overall situation of the student in relation to further risk factors, guided by the central question: Is the student in a critical development phase or an individual crisis? All risk factors known from research on school shootings (see Sect. 18.1) should be considered (e.g. rejection by peers, suicidal tendencies, extensive consumption of violent media content).
3. Finally, the crisis prevention team gathers all information about protective factors. Given that research on school shootings and threats of violence says little about protective factors in relation to the developmental pathway to severe targeted school violence, the team should use general protective factors from youth violence research, for instance a positive relationship to an adult, integration in school and leisure time activities, good class climate, self-efficacy, and compliance with norms (Scheithauer, Rosenbach, & Niebank, 2008).

It is obvious that the NETWASS prevention model focuses not only on the assessment of threats and leaking, but also on the general overall psychosocial situation. This perspective also allows schools to use the model for cases where a threat of violence is not obvious but an individual crisis of a student can be detected.

As a structural guideline for evaluating the situation, the crisis prevention team can use a documentation form to list the answers to threat assessment questions and all risk and protective factors. Following this "evaluation," the crisis prevention team chooses appropriate interventions. Mirroring the three steps of assessment, the

team has to identify measures that will end the threatening situation, minimize the risk factors, and maximize the protective factors. The team should find an adequate measure for every factor identified. Which measures are adequate depends on the individual case and available school resources. Possible measures vary from a parent–teacher interview through anti-bullying-training with the entire class to a referral to a psychotherapist or the involvement of police.

After initiating support for the student, and in many cases for his or her family as well, the school has the task of monitoring the process. The last decision within the consultation process is to appoint one or more staff members to monitor the case. Throughout the whole evaluation process it is important that all decisions be made by the team where possible, even if the team leader has formal authority (e.g. in case of disagreement). Furthermore, all legal provisions concerning documentation of information about students, data protection, and duty to inform parents must be respected. Responsible handling of data must be ensured to avoid stigmatization.

In order to find effective measures in individual cases, the support of a professional network in the regional environment is necessary. Every school should search for reliable partners within the community. Thus, another part of the NETWASS approach is to initiate regional professional networks of school psychologists, law enforcement personnel, youth welfare officers, and mental health professionals. During the NETWASS training, schools are encouraged to invite all professional partners to join the school's internal crisis prevention team when necessary. In addition to the school-specific local networks, a phone help-line (TEBESKO) providing schools with contacts for professional advice was launched in December 2011 as a pilot project in Berlin.[1]

18.3.1.4 Step 4: Case Monitoring

Case monitoring is the fourth and last step of the NETWASS procedure. As the crisis prevention model focuses not only on preventing an immediate threat but also takes into account underlying critical developments and individual crises, and supports teachers in initiating appropriate intervention measures, permanent case monitoring is necessary (Cornell & Sheras, 2006). It must be ensured that the actions suggested by the team are effective and a critical development is averted. A feedback should be given to the crisis prevention team whether measures have started, were rejected, canceled, or ended, or whether another important event occurred, which requires a new assessment by the team. The task of monitoring the case should be taken on by a staff member, who can contact the student easily and has a good relationship to him or her. This can be for example the homeroom teacher, but also other persons, such as the school social worker or school counselor. In some

[1] In cooperation with Accident Insurance Berlin (UKB), Berlin Emergency Service for Child Protection (BNK), and the Institute for Work and Health (IAG) of the German Statutory Accident Insurance (DGUV). Early experience shows that the phone help-line is well accepted by school staff and parents.

cases it might be necessary to appoint several persons for monitoring the course of development, because the follow-up on measures may implicate different tasks in everyday life. Case monitoring ends, when the crisis prevention team decides that the critical development of the student is averted.

18.4 Evaluation Study

In the following section we describe how the NETWASS prevention model will be evaluated and present descriptive results about the pretraining situation and implementation process in the participating schools.

By 2011, the NETWASS training program had been implemented in 108 schools in Germany. Participating schools in three federal states (Berlin, Brandenburg, and Baden-Württemberg) were randomly allocated to four intervention-implementation conditions in a comparative quasi-experimental design:

- In the "direct condition," a crisis prevention team consisting of 3–12 people completed 2-day training. Teaching and management staff received 1 h of training. In both cases training was provided by psychologists from the NETWASS team.
- In the "multiplier condition," the crisis team was instructed either by school psychologists or by police officers who had themselves received specific NETWASS-multiplier training. In contrast to the direct condition, school staff were instructed by the school principal or another member of the crisis prevention team.
- The "information brochure" condition consisted of a 2-h briefing to introduce an information brochure to the school staff and the crisis prevention team. While the brochure included the same information as presented in the three training conditions, separate training for the team was not included.
- A "blended learning tool," which is subject to a separate evaluation study, was introduced to another group of schools. The blended learning tool consists of online training for all staff (including the same information as the face-to-face training) and modified face-to-face training for the crisis prevention team.

All of the participating schools were provided with regular telephone support over a 7-month period following the training. This implementation design allows for a comparison of different commonly practiced training methods. The prospective, longitudinal evaluation comprised three points of measurement (pretraining, posttraining, and 7-month follow-up) utilizing separate questionnaires for principals, staff, and crisis prevention team members. The questionnaires included vignettes presenting cases of threat and critical development, options for action, and a self-assessment. In a multimethod design, qualitative interviews with the crisis prevention teams were conducted at the 7-month follow-up. Additionally, participating schools were requested to document all cases addressed using the crisis prevention model (event sampling design). Finally, protocols of the implementation process and case management were made available for qualitative analyses.

18.4.1 Sample

The 108 participating schools were recruited in three federal states of Germany, with Berlin being urban, Brandenburg mainly rural, and Baden-Württemberg combining both characteristics. Within each state, six school districts were selected, to represent rural and urban areas, eastern (former GDR) and western settings, and different socioeconomic contexts (average income, unemployment, gross domestic income, educational measures). As Germany's federal school system consists of numerous school types, four aggregated types were considered: primary schools (up to fourth or sixth grade); "secondary schools" (*Hauptschule* and *Realschule* preparing students mainly for nonuniversity professions); *Gymnasium* (students for university education); and "vocational schools" (2–3-year practical nonacademic training for students from the age of 16). Invitations to the NETWASS training were sent to all schools included in these four types, except for primary schools, where, due to the large numbers, only a random sample was invited.

The final sample consisted of 108 schools—35 were in Berlin, 30 in Brandenburg, 42 in Baden-Württemberg, and one European School in Bavaria. The school types were 29 primary schools, 30 secondary schools, 31 *Gymnasiums*, and 18 vocational schools. Direct training was conducted at 32 schools, 37 schools were instructed by external trainers, seven by blended learning and the information brochure was implemented in 29 schools. Before main program implementation three schools had been trained and evaluated during a separate pilot study.

Because data collection is still in progress at the time of writing, we can only present preliminary results from the first point of measurement (t1), to demonstrate the pretraining situation, and describe the implementation process. The following results refer to quantitative data we collected at 98 schools (excluding three pilot schools and seven blended learning schools) where staff completed questionnaires at the first measurement point (pretraining) and qualitative data collected at 82 schools (including the three pilot schools). The qualitative data consists of phone interviews with crisis prevention officers during the implementation phase, case documentations prepared by the schools, and expert interviews.

18.5 Preliminary Results

18.5.1 Self-Assessment of Fear and Confidence

In order to record the situation in schools before training and detect possible problems of a special crisis prevention system, we asked school staff about their fear of school shootings, their professional confidence, and the perceived number of violent incidents.

At first point of measurement, staff ($n = 3{,}509$) were asked whether they feared a case similar to the Erfurt school shooting occurring at their school. Most of the staff

stated they had little or no fear. On a scale ranging from 1 to 5 (from *no fear* to *very strong fear*), 69% reported having no or little fear, 22% reported an intermediate level of fear, 6% some fear, and 2% very strong fear.

Before the NETWASS training, staff were presented with the following vignette:

> A student says to his friend, "Next Monday something terrible is going to happen to the teacher Ms. X, I will make sure of that." The friend has reported this to you, as you are his homeroom teacher. How well can you assess the seriousness of this threat?

On a scale ranging from 1 (*not at all*) to 5 (*very well*), 32.8% said they would feel hardly or not at all competent to assess the seriousness of such an unspecific threat against a colleague, 38.4% rated their competence as average, and 28.9% said they were capable of assessing the situation well or very well (SD = 1.02, $n = 2{,}471$). The members of the crisis prevention teams—many of whom are social workers or teachers with training in violence prevention—felt slightly more confident about assessing threats. However, prior to the training, 28.7% of them felt hardly or not at all competent to assess a threat (9.4% *not at all*, 19.3% *not well*, 39.0% *average*, 27.4% *well*, 4.9% *very well*) (SD = 1.01, $n = 467$). Altogether, crisis prevention team members and school staff in general feel averagely capable of assessing an unspecific threat made by a student, with a wide variance. Staff were also asked whether they felt those responsible at their school would know what to do in the event of a threat of a school shooting or other forms of severe violence at their school. Here, 20.4% said those in charge would hardly or not at all know what to do, while 31.6% said their ability was average ($n = 3456$). This shows that in the eyes of a large proportion of teachers, the ability of their schools to handle threats could be improved.

Before starting the training, teachers were asked to report incidents of violence or risk factors during the previous 12 months ($n = 3560$). A large proportion of teachers had been confronted with a considerable number of different forms of violence, threats, and risk factors. Bullying had been observed by 86.0%, while 66.7% reported having been worried about sudden changes of behavior in a student. Serious physical fights had been observed by 42.5%. Suicidal thoughts of students had been witnessed by 23.3%, and 14.2% of teachers had overheard a student openly threaten to kill another student. Moreover, 13.1% had been personally threatened with violence by a student, while 6.8% reported that a student had actually used violence against them. Altogether 9.2% said they had heard a student threaten a school shooting. Interestingly, the information given by principals differs from those given by teachers and other staff. More principals reported about having been worried about a sudden change in behavior (79.5%, $n = 73$), and more had witnessed serious physical fights (56.8%, $n = 74$), suicidal thoughts of students (51.4%, $n = 74$), or a student threatening to kill a peer (32.4%, $n = 74$). Fewer principals reported having been threatened with violence personally (6.8%, $n = 74$), having been attacked by a student (2.7%, $n = 75$), or having heard threats of a school shooting (7.6%, $n = 74$). Looking at schools as a whole, the gap between teachers' and principals' reports becomes larger. At 76 schools, at least one teacher had observed a student's threat of a school shooting, but at only 65 did the principal report having witnessed such a threat.

18.5.2 Implementation Process

The preliminary results of the implementation study show that within 7 months after training, 86 of 98 participating schools (88%) had installed a crisis prevention team and a crisis prevention officer. The teams usually consisted of the principal, sometimes a deputy, a school social worker if available, and teachers. Some of them had other special functions within the school; many had training in violence prevention and counseling. Some schools appointed nonteaching staff to the team, such as the secretary or, more rarely, external persons, such as educators working for partners or other institutions. At 40 of 98 schools, the team reported they had carried out one or more consultations on students who had shown direct or indirect leaking or other behavior causing serious concern. At 13 schools, the crisis prevention officer had been addressed by a teacher, but the problem had been situationally explainable and was dealt with without a team consultation, usually done by the homeroom teacher in cooperation with the principal, and, where available, the social worker. At a number of schools first experiences with the NETWASS prevention program were documented. There are differences in the way schools adopt the program. Some schools use the NETWASS structure strictly for cases of leaking and risk factors; others have opened it for handling other concerns, such as drug abuse. There are various obstacles to schools implementing the model, one a serious lack of time resources.

The preliminary results show that about 104 cases have been reported to the NETWASS team to date, either in documentations, in phone consultations, or in interviews. In at least 39 cases direct leaking was documented, such as direct threats against the school or against peers, showing a weapon, or placing a list of names along with a threat on an internet platform. Most of the 22 reported cases of indirect leaking were suicidal thoughts of students. An occurrence of direct leaking in combination with risk factors was reported in 19 cases.

18.6 Discussion and Further Perspectives

The large number of staff with no or little fear of a school shooting at their school suggests that teachers and other staff are well aware that the probability of experiencing a school shooting is generally very low. However, at the same time, considerable numbers state some or even great fear. This supports the idea of addressing the topic and providing prevention measures. To reach both groups, the often dramatic tone of media representations must be replaced by a matter-of-factly, qualified approach fitting the actual competences and responsibilities of school staff.

Our results on the confidence of school staff about assessing threats suggest that there is room for improvement. Furthermore, it is possible that school staff still overestimate their ability to assess unspecific threats. Bondü (2012) showed that detailed information, such as where a shooting was going to happen, time, weapons, or names of possible victims, was given in advance by some (but not all) perpetrators.

In her analysis of seven school shooting cases in Germany, she found 87 detailed leaking events. Bondü therefore suggests that further criteria beneath the level of details need to be taken into account to judge the seriousness of leaking appropriately, (2012). With regard to prevention, teachers must therefore be encouraged to take unspecific threats very seriously, as well as leaking. This argument is supported by analyses of case reports of German school shootings. Bondü (2012) found that the perpetrators showed leaking repeatedly, along with many other risk factors, but rarely used direct threats. Also, the vast majority of leaking events in German cases was directed toward friends and other students, and was rarely reported to teachers or other authority figures. However, in one case, where students turned to teachers and reported their knowledge, it was possible to prevent severe harm. This supports the argument that if school staff are informed about leaking and there is no situational explanation, it is highly recommendable, as suggested in the NETWASS procedure, to look for further risk factors. This supports the main idea of the NETWASS training: to increase awareness of school staff about how relevant such leaking may be and how important it is to pass this information on in order to allow the crisis prevention team to systematically bundle specific information about the student. The assessment of school staff on how well the people in charge at their school know what to do in case of a threat of a school shooting also suggests that a considerable number of staff would like their leadership to improve their skills.

The results concerning the occurrence of violent incidents confirm that many school staff are confronted with significant cases of various forms violence, including the threat and actual use of direct violence against teachers and other staff. The different accounts of teachers and principals concerning threats of a school shooting call for further discussion. It is of course possible that teachers overestimate the number of threats of school shootings. On the other hand, qualitative data suggests that principals might have reasons to not report threats of severe violence to outsiders: they could be more hesitant to report such a threat to outsiders in a questionnaire, or felt that not all threats were relevant to report, or perhaps some principals did not know about threats observed by their staff. This underlines the importance of avoiding the loss of information within schools, of encouraging teachers to report such cases, and of appointing a person to whom they should report. It also gives support to the practice of providing schools with the option of an internal crisis prevention system, allowing them to first deal with threats internally, as there seems to be resistance to giving information to outside instances.

Finally, preliminary analysis of the implementation of the NETWASS program by the schools shows that a vast majority (88%) decided to implement the NETWASS crisis prevention system and that most of them use the system to detect students in critical development situations. The fact that within a 7-month period after the training 19 high-risk cases were discussed in crisis prevention teams demonstrates that the NETWASS structure is a functional measure for detecting relevant cases and providing help for students. The cases reported by schools should be understood in the light of a developmental perspective in the prevention of school shootings. Schools report a small number of cases of students with critical developments. This

means that the school staff are able to identify these developments and case consultation seems to be a viable method for dealing with these cases. This means that the developmental approach is a viable way to give schools an instrument to recognize indications of possible critical developments and take action to prevent an escalation towards a serious crisis or severe school violence. But details on the implementation practice at schools and the assessment of the NETWASS structure by teachers will have to await completion of the study.

References

Bannenberg, B. (2011). Umgang mit Amokdrohungen an Schulen. *Zeitschrift für Internationale Strafrechtsdogmatik, 5*, 300–317.

Böckler, N., & Seeger, T. (2010). *Schulamokläufer: Eine Analyse medialer Täter-Eigendarstellungen und deren Aneignung durch jugendliche Rezipienten*. Weinheim & Munich: Juventa.

Bondü, R. (2012). School Shootings in Deutschland: Internationaler Vergleich, Warnsignale, Risikofaktoren, Entwicklungsverläufe. Doctoral dissertation, Department of Education and Psychology, Freie Universität Berlin: http://www.diss.fu-berlin.de/diss/servlets/MCRFileNodeServlet/FUDISS_derivate_000000011902/Bondue_Dissertation_SchoolShootings_vollstaendig_fin.pdf;jsessionid=D65789033C8191D673B196E7516A4910?hosts.

Bondü, R., Leuschner, V., Lippok, A., Scholl, J., & Scheithauer, H. (in press). Leaking-Phänomene und Ankündigungen von Gewalt—Nutzen für die Prävention von schwerer, zielgerichteter Gewalt an Schulen. Befunde aus dem Berliner Leaking-Projekt und dem Projekt NETWASS. In J. Hoffmann & K. Roshdi (Eds.), *Schwere Schulgewalt, Jugend-und Erwachsenenamok—Täterpsychologie—Psychiatrische Aspekte—Risikoanalyse—Bedrohungsmanagement*. Schattauer.

Bondü, R., & Scheithauer, H. (2009). School Shootings in Deutschland: Aktuelle Trends zur Prävention von schwerer zielgerichteter Gewalt an deutschen Schulen. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 58*, 685–701.

Bondü, R., & Scheithauer, H. (2011). Explaining and preventing school shootings—chances and difficulties of control. In W. Heitmeyer, H.-G. Haupt, A. Kirschner, & S. Malthaner (Eds.), *Control of violence: Historical and international perspectives on violence in modern societies* (pp. 295–314). New York: Springer.

Bondü, R., & Scheithauer, H. (unpublished manuscript). *Treating leaking and threat with murder by students : Pilot study of a short intervention in German schools*. Berlin: Freie Universität Berlin.

Caplan, G. (1961). *An approach to community mental health*. New York: Grune & Stratton.

Cornell, D., & Sheras, P. (2006). *Guidelines for responding to student threats of violence*. Longmont, CO: Sopris West.

Cornell, D., Sheras, P., Gregory, A., & Fan, X. (2009). A retrospective study of school safety conditions in high schools using the Virginia threat assessment guidelines versus alternative approaches. *School Psychology Quarterly, 24*, 119–129.

Cornell, D., Sheras, P. L., Kaplan, S., McConville, D., Douglass, J., Elkon, A., et al. (2004). Guidelines for student threat assessment: Field-test findings. *School Psychology Review, 33*, 527–546.

Daniels, J. A., Bradley, M. C., & Hays, M. (2007). The impact of school violence on school personnel: Implications for psychologists. *Professional Psychology: Research and Practice, 38*, 652–659.

Der Polizeipräsident in Berlin (DPiB). (2011). *Polizeiliche Maßnahmen in Gefahrensituationen (Amoktaten und -drohungen)*. Unpublished presentation, Berlin.

Fein, R. A., Vossekuil, B., Pollack, W. S., Borum, R., Modzeleski, W., & Reddy, M. (2002). *Threat assessment in schools: A guide to managing threatening situations and to creating safe school climates*. Washington, DC: United States Secret Service and United States Department of Education.

Fox, C., & Harding, D. J. (2005). School shootings as organizational deviance. *Sociology of Education, 78*, 69–97.

Gaertner, J. (2009). *Ich bin voller Hass—und das liebe ich: Dokumentarischer Roman aus den Original Dokumenten zum Massaker an der Columbine Highschool*. Berlin: Eichborn.

Gasser, K. H., Creuzfeldt, M., Näher, M., Rainer, R., & Wickler, P. (2004). *Bericht der Kommission Gutenberg Gymnasium*. Erfurt: Freistaat Thüringen.

Gordon, R. (1987). An operational classification of disease prevention. In J. Steinberg & M. Silverman (Eds.), *Preventing mental disorders: A research perspective* (pp. 20–26). Rockville, MD: US Department of Health and Human Services, National Institute of Mental Health.

Harding, D. J., Fox, C., & Mehta, J. D. (2002). Studying rare events through qualitative case studies: Lessons from a study of rampage school shootings. *Sociological Methods & Research, 31*, 174–217.

Heubrock, D., Hayer, T., Rusch, S., & Scheithauer, H. (2005). Prävention von schwerer zielgerichteter Gewalt an Schulen—Rechtspsychologische und kriminalpräventive Ansätze. *Polizei & Wissenschaft, 6*, 43–57.

Kidd, S. T., & Meyer, C. L. (2002) Similarities of school shootings in rural and small town communities. *Journal of Rural Community Psychology, E5*(1) http://corescholar.libraries.wright.edu/sopp/3.

Langman, P. (2009). Rampage school shooters: A typology. *Aggression and Violent Behavior, 14*(1), 79–86.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.

Leary, L. M., Kowalski, R. M., Smith, L., & Philips, S. (2003). Teasing, rejection, and violence: Case studies of the school shootings. *Aggressive Behavior, 29*, 202–214.

Leuschner, V., Bondü, R., Schroer-Hippel, M., Panno, J., Neumetzler, K., Fisch, S., et al. (2011). Prevention of homicidal violence in schools in Germany: The Berlin Leaking Project and the Networks Against School Shootings project (NETWASS). *New Directions for Youth Development, 129*, 61–78.

Leuschner, V., & Scheithauer, H. (2012). Wissenschaftlich begründete Prävention schwerer, zielgerichteter Schulgewalt. *Forensische Psychiatrie, Psychologie, Kriminologie, 6*, 128–135.

Levin, J., & Madfis, E. (2009). Mass murder at school and cumulative strain: A sequential model. *American Behavioral Scientist, 52*, 1227–1245.

Mrazek, P. J., & Haggerty, R. J. (1994). *Institute of Medicine (IOM), Reducing risks for mental disorders: Frontiers for preventive intervention research*. Washington, DC: National Academy Press.

Newman, K., Fox, C., Harding, D. J., Mehta, J., & Roth, W. (2004). *Rampage: The social roots of school shootings*. New York: Perseus.

O'Toole, M. E. (1999). *The school shooter: A threat assessment perspective*. Quantico, VA: National Center for the Analysis of Violent Crime, Federal Bureau of Investigation.

Panno, J., Sommer, F., Neumetzler, K., Fisch, S., Scholl, J., Lippok, A., et al. (2010). *Netzwerke zur Prävention schwerer Schulgewalt etablieren: Leitfaden für Schulen*. Berlin: Freie Universität Berlin.

Reddy, M., Borum, R., Berglund, J., Vossekuil, B., Fein, R., & Modzeleski, W. (2001). Evaluating risk for targeted violence in schools: Comparing risk assessment, threat assessment, and other approaches. *Psychology in the Schools, 38*, 157–170.

Scheithauer, H., Rosenbach, C., & Niebank, K. (2008). *Gelingensbedingungen für die Prävention von interpersonaler Gewalt im Kindes- und Jugendalter: Expertise zur Vorlage bei der Stiftung Deutsches Forum für Kriminalprävention* (2nd ed.). Bonn: DVK.

Verlinden, S., Hersen, M., & Thomas, J. (2000). Risk factors in school shootings. *Clinical Psychology Review, 20*, 3–56.

Vossekuil, B., Fein, R. A., Reddy, M., Borum, R., & Modzeleski, W. (2002). *The final report and findings of the Safe School Initiative: Implications for the prevention of school attacks in the*

United States. Washington, DC: United States Secret Service and United States Department of Education.

Ziehfreund, B. (2010). Nach der Tat ist vor der Tat! Eine Aufarbeitung des Amoklaufs von Winnenden und Wendlingen am 11. März 2009. *Kriminalistik, 3*, 145–152.