

## The Concept of Leakage in Threat Assessment

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**Leakage in the context of threat assessment is the communication to a third party of an intent to do harm to a target. Third parties are usually other people, but the means of communication vary, and include letters, diaries, journals, blogs, videos on the internet, emails, voice mails, and other social media forms of transmission. Leakage is a type of warning behavior that typically infers a preoccupation with the target, and may signal the research, planning, and implementation of an attack. Nomothetic data suggest that leakage occurs in a majority of cases of attacks on and assassinations of public figures, adult mass murders, adolescent mass murders, and school or campus shootings: very low-frequency, but catastrophic acts of intended and targeted violence. Idiographic or case data illustrate the various permutations of leakage. We discuss the operational importance of the concept, place it in the context of other warning behaviors, emphasize the need for further research, and outline risk management strategies for the mitigation of such acts of violence in both law enforcement and clinical mental health settings. Copyright © 2011 John Wiley & Sons, Ltd.**

The concept of leakage in threat assessment was first offered by O'Toole (2000) in her study of school violence. She wrote that leakage occurs when “a student intentionally or unintentionally reveals clues to feelings, thoughts, fantasies, attitudes, or intentions that may signal an impending violent act. These clues could take the form of subtle threats, boasts, innuendos, predictions, or ultimatums. Clues could be spoken or conveyed in stories, diaries, essays, poems, letters, songs, drawings, doodles, tattoos, or videos” (p. 14). She asserted that leakage is considered one of the most important clues preceding an adolescent's violent act.

Since her study was published a decade ago, threat assessment—an idiographic, fact-based, dynamic, and behavioral method of assessing low base rate violence risk toward an identified target—has advanced in a variety of areas. Exploratory research in various domains of intended and targeted violence beyond school shootings, such as public figure assassination and adult mass murder, and the operational development of both threat assessment protocols and threat assessment organizations continues (Borum, Fein, Vossekuil, & Bergland, 1999; Borum & Reddy, 2001; Calhoun & Weston, 2003; Fein, Vossekuil & Holden, 1995; Fein & Vossekuil, 1998; 1999; Meloy et al., 2004a; Meloy, Sheridan, & Hoffmann, 2008). As the nascent science of threat assessment develops, it is judicious to revisit and refine terminology to standardize both practice and further research. It is within this spirit that we focus our attention on “leakage.” In this article we narrow the definition of the term, place it in the context of other “warning behaviors,” review the existing research that has attempted to

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empirically measure it, discuss various case examples of leakage, theorize on the reasons for leakage, and make suggestions for its operational application and further research in both forensic and clinical settings.

## THE DEFINITION OF LEAKAGE

Leakage is the communication to a third party of an intent to do harm to a target. Third parties are typically other people, but the means of communication could vary widely, from planned or spontaneous utterances, to letters, diaries, emails, voice mails, blogs, journals, internet postings, tweets, text messages, video postings, and future means of social communication that are yet to be invented. Our definition is close to the lexical denotation offered by *Webster's Encyclopedic Dictionary* (1990) – “the act of secret or restricted information becoming known to people not intended to have the information” – but it differs in the sense that sometimes leakage is quite intentional on the part of the subject for a variety of social and psychological reasons. Leakage can also vary in specificity as to when, where, what act will occur, and what the target will be, all variables that likely affect its predictive power. We are limiting our definition to leakage that could be discovered prior to the act by threat assessment and other mental health professionals even if the intent to be discovered is not clear or fully conscious for the subject.

## WARNING BEHAVIORS

Leakage is one type of several “warning behaviors,” which, in turn, we broadly define as any behavior that precedes an act of targeted violence, is related to it, and may, in certain cases, predict it. Warning behaviors, moreover, are fact-based, dynamic, acute, and often accelerating. They distinguish themselves from more distal and static violence risk factors. Meloy, Hoffmann, Guldemann & James (in press) offered a preliminary typology of warning behaviors within which leakage is one type, and may be important when determining the imminence of an attack. This is, however, an empirical question yet to be answered by the extant research.

The purpose of this warning behavior typology is to advance threat assessment from unstructured to structured professional judgment, a more reliable and valid method of prediction in violence risk research (Monahan, 2003). Unstructured professional judgment relies on the notion of *ipsi dixit*, literally; “He himself said it,” and when translated into common parlance means the assessor knows it is true because he is the assessor and he knows best. This is a method of prediction that has been shown to have very limited reliability and validity when compared with other methods of risk assessment (Ennis & Litwack, 1974; Faust, 1986; Grove & Meehl, 1996; Hanson, Morton, & Harris, 2003). Structured professional judgment has gained a foothold in the traditional violence risk approaches which are dependent on base rates and more historical factors through the use of instruments such as the HCR-20 (Webster et al., in press), and are intended to estimate probabilities of general violence. The proposed eight warning behaviors for threat assessors are:

1. *Pathway* warning behavior – any behavior that is part of research, planning, preparation, or implementation of an attack (Calhoun & Weston, 2003).

2. *Fixation* warning behavior – any behavior that indicates an increasingly pathological preoccupation with a person or a cause (Mullen et al., 2009)
3. *Identification* warning behavior – any behavior that indicates a psychological desire to be a “pseudocommando,” (Dietz, 1986), have a “warrior mentality,” closely associate with weapons or other military or law enforcement paraphernalia (Hempel, Meloy, & Richards, 1999), identify with previous attackers, or identify oneself as an agent to advance a particular cause or belief system.
4. *Novel aggression* warning behavior – acts of violence unrelated to attack behavior that are committed for the first time. Such behaviors test the ability of the subject to actually do a violent act.
5. *Energy burst* warning behavior – an increase in the frequency or variety of any noted activities related to the target.
6. *Leakage* warning behavior – the communication to a third party of an intent to do harm to a target.
7. *Directly communicated threat* warning behavior – the communication of a direct threat to the target or law enforcement beforehand.
8. *Last resort* warning behavior – increasing desperation or distress through declaration in word or deed.

The concept of “posing a threat,” initially presented by Fein, Vossekuil, & Holden (1995), is a structured professional judgment reached by a threat assessor based upon the cumulative evidence of warning behaviors in any particular case. The decision that a subject poses a threat also invites an opinion regarding the target, likelihood, nature, severity, and imminence of the threat which is posed (Borum et al., 1999). The warning behavior, directly communicated threat, is arguably the least important in a threat assessment, and least frequent, among the acts of targeted violence we are considering: public figure attacks and assassinations, adult and adolescent mass murders, and school shootings. This point is empirically underscored by two studies in the US and Europe (Fein & Vossekuil, 1999; James et al., 2007) which found that among an aggregated sample of 58 public figure attackers and assassins over the past several decades, not one communicated a direct threat to law enforcement or the target before the attack. However, direct threats do occur, and, particularly in the context of the “intimacy effect” (Calhoun & Weston, 2003), i.e., direct threats are more predictive of violence the more intimate the relationship between the target and the perpetrator, they should be taken very seriously (Rosenfield, Fava, & Galietta, 2009).

## RESEARCH ON LEAKAGE

The research on leakage is hampered by less than uniform definitions of the term. The studies are also observational and archival, with no comparison or control groups. In some cases, the subjects are non-random samples of convenience. In other cases, the subjects represent the universe of cases identified during a particular time period. Other control processes, such as measures of interrater reliability, are scant. Given these substantial limitations, the findings are only suggestive that leakage occurs across a variety of acts of targeted violence.

Public figure attack and assassination studies have found a suggestive pattern of leakage. In the Exceptional Case Study Project (Fein & Vossekuil, 1998; 1999), 63% of

their US subjects ( $N = 83$ ) had a history of indirect, conditional, or direct threats about the target, usually to family, friends, co-workers, or others known to the target. There was no direct threat to the target among those who attacked or assassinated ( $n = 43$ ). If near-lethal approachers are included, the direct threat frequency increases from 0 to 7%. In a study of attackers of western European politicians (James et al., 2007), 46% of the attacks ( $N = 24$ ) were preceded "by obvious and often flamboyant warning behaviors in the form of threatening or bizarre communications to politicians, public figures, or police forces" (p. 342). This study, however, did not specifically focus upon the percentage of those attackers who leaked their intent to attack to a third party. However, no attacks were preceded by a known direct threat to the target.

Among adult mass murderers, defined as subjects  $\geq 18$  years of age who killed at least three people in one incident, the majority appear to leak their intent to third parties before they attack. Hempel and colleagues (1999) found that 67% of a sample of 30 mass murderers, a non-random sample of convenience, engaged in leakage. Half of these individuals made a specific threat verbally or in writing, which described the location, victims, or time of the killings. The other half made either a generalized threat (no location or victim pool identified) or a mixed threat (generalized threat combined with a specific threat). An example of a generalized threat is: "I'm going hunting." An example of a specific threat is a suicide note that described the massacre in detail. Again, the contrast with the low frequency of direct threats in this study is notable: 20% of the non-psychotic mass murderers directly threatened their target beforehand, while none of the psychotic mass murderers, who also had the highest lethality rate, directly threatened their target beforehand.

Among adolescent mass murderers, both leakage and direct threats appear to be more frequent. Meloy and colleagues (2001) found that 58% of their non-random sample of adolescent subjects ( $N = 34$ ) made threatening statements concerning their mass murder beforehand, usually to third parties. However, the majority of these adolescent mass murderers also threatened their targets. Examples of direct threats included, "Tomorrow you find out if you live or die." An example of leakage included the statement, "Wouldn't it be fun to kill all those jocks?" This was consistent with other research on adolescent mass murderers and school shooters (Meloy et al., 2004b). O'Toole (2000) found among a sample of school shooters in her FBI study that all subjects demonstrated some type and degree of leakage behavior before the shooting. The FBI defined leakage broadly to include a wide range of both direct and indirect forecasting behaviors underpinned by different and/or multiple motivations: what we refer to in this study as various warning behaviors, including leakage. They ranged from subtle threats to innuendos to diary entries, doodling or videotapes. The recurring themes were violence, hopelessness, despair, hatred, isolation, loneliness, nihilism, or an "end of the world" philosophy. Another type of leakage identified by the FBI were attempts by the subject to persuade unwitting or knowledgeable family members, friends, or others to help with preparations for the violent act.

The U.S. Secret Service (Vossekuil, Reddy, Fein, Borum, & Modzeleski, 2000) defined what we call leakage in their study of school shooters as "signaling the attack" behaviors, a broader definition which included other warning behaviors. In 81% of their cases ( $n = 37$ ) at least one person knew the shooter was thinking about or planning the incident, and in 59% of the cases, more than one person knew about the planning. In 93% of the cases, the attackers engaged in some pre-offense "disturbing" behavior that created concern in those around them. These behaviors ranged from actions

directly related to the impending incident, such as accessing a firearm (a “pathway” warning behavior), to writing a poem or essay containing homicidal and/or suicidal themes (a “fixation” or “identification” warning behavior, depending on the details of the writing). There was subject overlap in the FBI and USSS studies, and they should not be treated as independent samples.

Although the research is scant and definitions vary, the findings are suggestive that leakage is a type of warning behavior among some who engage in targeted violence; however, because of the noted methodological limitations across studies, the research findings and frequencies should be treated as suggested estimates.

## **CASE EXAMPLES OF LEAKAGE**

### **Charles Whitman, The University of Texas (August 1, 1966)**

On August 1, 1966, 26-year-old University of Texas student Charles Whitman dragged an arsenal of weapons and survival equipment to the top of the university’s clock tower located in the middle of the Austin campus. Beginning in the late morning, Whitman started shooting randomly but with precision at people walking around the tower and surrounding area, ultimately killing 14 and injuring many more. The siege lasted more than 90 minutes. Whitman’s behavior shocked the entire nation. In 1966 very little was known about mass murder. It was suggested at the time that Whitman might have “snapped” – or that his behavior was the result of a brain tumor subsequently found during his autopsy. Both theories disregarded the significant amount of prior planning that Whitman put into this attack that might have been uncovered if his “leakage” were investigated (FBI, 2009).

Five months before the shootings, Whitman had a one-time session with university psychiatrist Dr. Maurice Dean-Heatly. During this session Whitman told Heatly he had fantasized about “going up on the tower with a deer rifle and shooting people.” In 1966 pre-Tarasoff, Heatly did not report or act on this statement. Days following the shooting, Heatly defended his actions by explaining that similar references of violence were common in other students, and Whitman, “looked like anything but a psychopath.” Heatly said, “I recall very vividly something about him suggested the all-American boy.” But Heatly also commented that Whitman was, “oozing hostility.” During their session Whitman told Heatly he was upset because his mother and father recently separated, his father was a brutal man, and that Whitman himself had “beat” his own wife on two separate occasions. Whitman killed both his wife and his mother before going up on the tower (FBI, 2009), what has been referred to as a bifurcated mass murder (Hempel et al., 1999).

### **Eric Harris and Dylan Klebold, Columbine High School (April 20, 1999)**

Eric Harris and Dylan Klebold killed 12 students and one faculty member and injured 24 others at Columbine High School in Colorado. The homicide investigation indicated that Harris and Klebold engaged in extensive planning and preparation for this attack. Associated with their planning was significant “leakage” prior to the event. This leakage included writings on Harris’ website, saying, for example, “Kill ’em all!!!” Some were explicitly threatening in nature, and others portrayed themes of homicide and suicide. In addition, the pair recruited a friend to buy them a semi-automatic assault pistol, a

“pathway” warning behavior. They also filmed a video in a wooded area featuring both Harris and Klebold and several of their friends practicing with firearms which they would ultimately use against their classmates: both a “pathway” and an “identification” warning behavior. Other examples of significant leakage were not discovered until after the shooting. During the search of Harris’ bedroom additional videotapes and writings were found which provided detailed information about the planning of the shooting and the mental states of the shooters (Columbine Review, 2001; Cullen, 2009).

### **Matti Juhani Saari, Kauhajoki School of Hospitality, Kauhajoki, Finland (September 23, 2008)**

Twenty-two-year-old Matti Saari killed 10 people at his culinary arts school located 200 miles north of Helsinki, Finland. The day before the shooting, law enforcement officers interviewed Saari because of videos he had posted on YouTube showing him at a shooting range firing a weapon he would use the next day against his classmates, a “pathway” warning behavior. Saari’s YouTube profile also included references to the Columbine High School shooters. Following the law enforcement interview, Saari was allowed to keep his weapon because it was properly licensed and no Finnish laws were broken. The next day Saari entered his school and carried out the massacre (CNN, 2008).

According to the findings of the Finish Ministry of Justice, Saari engaged in leakage behavior prior to the shooting. Some examples of this leakage behavior identified by the commission include the following. In 2006, Saari showed a video clip on school shootings to a friend, telling the friend he wanted to do something like that. Following the school shooting at Jokela High School, Tuusula, Finland in November 2007, Saari commented to his half-sister: “Maybe I should go to my school and start shooting.” His sister thought he was joking. Just five days before the shooting, Saari visited friends in the town where his mother and her family lived. He reportedly stopped people in the streets, asking them: “Humanity is overrated, isn’t it?”, which was the same slogan printed on a T-shirt worn by Pekka-Eric Auvinen, the shooter in the Jokela shooting. Auvinen can still be seen wearing this T-shirt in an internet photo (Investigation Commission, 2010).

### **Maurice Clemmons, Seattle, Washington area (November 29, 2009)**

On the morning of November 29, 2009, Maurice Clemmons walked into a coffee shop and killed four police officers seated at a table doing their paperwork on their laptops. The night before, he told some people, “Watch TV tomorrow. I’m going to shoot some cops.” Clemmons had been released on \$190,000 bail the week before the killings on pending felony charges of raping a 12-year-old relative and assaulting police officers in May, 2009. He had been granted clemency nine years earlier by then Arkansas Governor Mike Huckabee after he had served 11 years of a 100-year sentence for robbery and burglary convictions when he was 17 years old. He had moved to Washington in 2004 following another prison term in Arkansas (Yardley, 2009).

### **Debindra Chantyal, New York City (September 11, 2009)**

Debindra Chantyal, a 30-year-old immigrant from Nepal, attempted to kill his taxi driver partner, Pema Sherpa, 28, with a meat cleaver in Queens on September 11, 2009.

He then committed suicide by jumping off a Manhattan bridge. He appears to have decompensated over the previous months, becoming increasingly paranoid and desperate due to his career failures in the U.S., jealousy of his wife's relations back in Nepal, his parents' divorce, and his inability to pay for his siblings' education. He also appeared quite envious of his friend Pema's successes. He leaked his general intent to his uncle in an e-mail the night before: "Even though there are many who have caused me pain, giving pain to the ones I am able to has become my obligation" (Kilgannon, 2009).

### **Sirhan Sirhan, The Ambassador Hotel, Los Angeles (June 5, 1968)**

In early January, 1968, Senator Robert F. Kennedy voted to sell 50 Phantom fighter jet bombers to Israel. For Sirhan Sirhan, a Palestinian Arab, this was both a personal and national betrayal. Within days he vowed to assassinate the Senator before the anniversary of the Six Day War in June, 1968. Over the course of five months, he planned and prepared for his attack, which came just after midnight on June 5. Robert Kennedy had won the California Presidential primary, and was likely to be the Democratic candidate for President. Sirhan hid in the large kitchen pantry, and in the midst of 77 people, killed him with multiple rounds fired from a .22 caliber Iver Johnson revolver.

The leakage in this case took two forms: by late January, 1968, Sirhan was repetitively writing in his diary "RFK must die," and continued this for months, believing that this writing would bring the event to pass. He also told a garbage collector weeks prior to the killing that he would assassinate Robert Kennedy. The collector did nothing. Sirhan killed for political reasons that were highly personalized. He also demonstrates the nexus between a political assassination and a psychiatric disorder, since both the defense and prosecution experts diagnosed him with either a mental disorder or a personality disorder (Meloy, 1992).

### **Jeffrey Weise, Red Lake High School Shooting, Red Lake, Minnesota (March 21, 2005)**

Jeffrey Weise had been expelled from Red Lake High School in 2004 when he was suspected of making a threat to "shoot up the school" on the anniversary of the Columbine High School shooting. He was subsequently placed into a home schooling program. By midday on March 21, 2005, 16-year-old Jeffrey Weise had killed 10 people, including himself, and injured seven more. His attacks began early in the morning when he shot and killed his grandfather and his grandfather's girlfriend as they were sleeping in bed. He stole his grandfather's pistol and shotgun, and drove his grandfather's police car to Red Lake High School. He parked the squad car right in front of the main entrance and sauntered inside, walking through the metal detector. One of the two unarmed security officers at the entrance attempted to confront Weise and was immediately shot and killed. Weise then walked through the hallways of the school, shooting and killing five fellow students and a teacher who were huddled in different classrooms. At the end of his assault, when confronted by police, Weise committed suicide (*New York Times*, 2006; Robertson, Gunderson & Stawicki, 2006; Stawicki, 2005; CNN.com, 2007).

Weise's leakage was extensive and it became a critical part of the investigation and subsequent prosecution of one of Weise's associates. Investigators found evidence of Weise's leakage in his email communications to several of his friends regarding his intentions to commit a Columbine type shooting at the high school. When federal

prosecutors believed the leakage rose to the level of a conspiracy, they filed charges against one of Weise's friends for conspiracy to commit murder. Weise's friend ultimately pled guilty to the lesser charge of making threatening interstate communications, and was sentenced as a juvenile (*New York Times*, 2006; Robertson, Gunderson & Stawicki, 2006; Stawicki, 2005).

### **Kimveer Gill, Dawson College, Quebec, Canada (September 13, 2006)**

At lunchtime on September 13, 2006, 26-year-old Kimveer Gill entered the main doors of Dawson College and headed toward the cafeteria, which was crowded with students. Gill shot and killed one student and injured 19 others before he committed suicide. Gill's leakage could be found on his extensive internet postings. He referred to himself on vampirefreaks.com as "Angel of Death" and wrote that he wanted to die "under a hail of bullets." He wrote about his strong feelings of hatred for society and people in authority. Gill also posted photographs of himself brandishing his weapons, an "identification" warning behavior. In one of these photos that is particularly menacing, Gill is seen dressed in black pointing a semi-automatic weapon directly into the camera. When he arrived on the Dawson campus on the afternoon of the shooting, Gill was dressed in black, and armed with a rifle – just like in his photograph (Ha, Peritz, & Picard, 2009; *Montreal Gazette*, 2007; Singh, 2006).

### **George Sodini, LA Fitness Center, Pittsburgh, PA (August 4, 2009)**

For years 48-year-old George Sodini had been trying to get a date. Professionally successful, and devoid of any obvious mental disorder symptoms – although a self-directed video tour of his apartment viewed by the first author revealed a complete absence of any photographs of human beings – Sodini appeared to be mystified, and increasingly angry and envious, that he could not form a sexual pair bond with a woman, and could not even find a woman with whom to have casual sex. After one failed attempt at mass murder in January, 2009, during which he retreated at the last minute, he did finally launch a surprise attack during a women's aerobics class on August 4, entering the room, turning off the lights, and killing three women with a 9 mm pistol before he committed suicide.

Sodini leaked his desire to carry out a mass murder for months on his personal blog, identifying his intent and timing, but not the exact location. Examples are as follows: "Planned to do this in the summer, but figured to stick around to see the election outcome" (November 5, 2008); "Writing all this is helping me justify my plan and to see the futility of continuing... this guy teaches (and convinced me) you can commit mass murder then still go to heaven" (December 31, 2008); "Can do this. Leaving work today I felt like a zombie just going through the motions... this log is not detailed. It is only for confidence to do this. It is 6:40 pm. Only an hour and a half to go. God have mercy... I wish I had answers. Bye... It is 8:45 pm. I chickened out! Shit! I brought the loaded guns, everything. Hell" (January 6, 2009); "What is it like to be dead? I always think I am forgetting something, that's one reason I postponed" (May 4, 2009); "To pull the exit plan off, it popped into my mind to just use some booze... the list idea yesterday is working. I carry it in my wallet and add to it. I am feeling too good to carry this out, and too bad to enjoy ANYTHING. My life's dilemma" (May 5, 2009); "Took off today, Monday, and tomorrow to practice my routine and make sure it is well polished. I need to work out every



detail, there is only one shot. Also I need to be completely immersed into something before I can be successful. I haven't had a drink since Friday about 2:30. Total effort needed. Tomorrow is the big day... last time in January I chickened out. Let's see how this new approach works. Maybe soon I will see God and Jesus. At least that is what I was told... any of the practice papers I left on my coffee table I used or the notes in my gym bag can be published freely. I will not be embarrassed because, well, I will be dead. Some people like to study that stuff. Maybe all this will shed insight on why some people just cannot make things happen in their life, which can potentially benefit others" (August 3, 2009).

**Andrew Joseph Stack III, Internal Revenue Service, Austin, TX  
(February 18, 2010)**

Fifty-three-year-old Joe Stack, a computer engineer, smashed a small Piper single-engine airplane into a seven-story office building in a residential and shopping area of Austin which housed 190 Internal Revenue Service employees. He was killed instantly, along with one other person in the building. Generally described as easygoing and a talented amateur musician, he nurtured an increasing grudge against the IRS. His major focus in his suicide note was Section 1706 of the 1986 Tax Reform Act, which made it extremely difficult for information technology professionals to work as self-employed individuals, forcing them to become company employees.

In the weeks prior to the attack, his wife complained to her parents of his escalating anger and her fear. She left their home with their 12-year-old daughter the night before the plane attack, and returned the next morning to find their home in flames. In a six-page statement posted on a website connected to his wife, Stack singled out the tax agency as the source of his suicidal rage. He concluded with vague but ominous leakage: "Well, Mr. Big Brother IRS man, let's try something different, take my pound of flesh and sleep well" (Brick, 2010). Stack's behavior suggested a desire for maximum lethality: he chose an airplane as a weapon, a time of day when the building was fully occupied by employees, and maximized his fuel capacity. The construction of the building and the employees' actions appeared to greatly minimize the casualties.

## **WARNING BEHAVIORS WITHOUT EVIDENCE OF LEAKAGE**

**Andrew Kehoe, The Bath, Michigan School Bombing (May 18, 1927)**

There are many cases of targeted violence where leakage is not found. One such case is the worst school massacre in United States history. While there were many other warning behaviors in this case, this offender was extremely secretive, cunning, and mission-oriented in achieving maximum lethality during his crime. From a historical perspective, there is no available evidence that Andrew Kehoe leaked his intentions to anyone.

Kehoe was born seven years after the end of the Civil War, in 1872. At the time of the Bath school massacre in 1927, he was 55 years old. He lived with his ailing wife Ellen on a farm in this rural community just outside of Lansing, Michigan – a town where everyone knew each other. Kehoe was a tax protestor and investigators concluded this was a key motivator for his crimes. For several years Kehoe was a member of the Bath Consolidated School Board and served as its treasurer before losing re-election in 1926. Described as a person who held on to grudges, Kehoe was upset over the imposition of a tax to fund the

construction of a new school building, and he was quite vocal about his opposition to this tax and repeatedly attempted to have it repealed. Kehoe blamed the high taxes for his financial problems. At the time of the bombings, foreclosure proceedings had been initiated against his uninsured farm and farm assets, including equipment and animals, all of which he destroyed the morning of May 18, leaving nothing for the tax collectors (Bernstein, 2009; Ellsworth, 1927).

Kehoe's preparation and planning for the Bath school massacre were detailed and required time, effort, and commitment. For months, he installed an elaborate system of explosives underneath the school's buildings where he was working part-time as a handyman and electrician. On the morning of May 18, 1927, Kehoe detonated his explosive network, killing 45 people and injuring at least 58 others. Most of the victims were children in the second to sixth grades (Bernstein, 2009; Ellsworth, 1927).

Kehoe evidenced "pathway" warning behaviors in the months, weeks and days before the bombing, but his behavior was ignored, explained away or overlooked. Some of these warning behaviors included the purchase of a significant amount of explosive materials, but in small amounts at different stores in the area so as to avoid detection. Explosions were heard on Kehoe's property, and when questioned about it he explained he was experimenting with dynamite and timers – "pathway" warning behavior, and perhaps "novel aggression" warning behavior. Just days before the massacre, nearby neighbors noticed Kehoe stringing wires between the structures on his property and carrying straw into his tool shed. They told investigators they thought this behavior was odd because there was no reason to put straw inside a tool shed (Bernstein, 2009; Ellsworth, 1927).

On the morning of the bombings, several people noticed the fire on Kehoe's farm as he worked to destroy his own property. They responded to offer assistance and described a very composed Kehoe who told them to go to the school. These people watched Kehoe drive his "truck bomb" to the school which he then detonated, killing himself and several others. Kehoe also killed his wife the morning of the 18th, or shortly before (Bernstein, 2009; Ellsworth 1927).

During the search of the remnants of the school buildings, investigators found a significant amount of undetonated explosives, along with an alarm clock precisely timed to trigger an even more massive explosion. The time and effort to install such a complex system of explosives became apparent. However, Kehoe, a part-time handyman, had never been questioned about all the time he spent at the school, and what he was doing there. Kehoe's odd, obsessive behavior at the school was noticed by others who worked there, including the school janitor, but it was explained away, rationalized or simply ignored. However a "Coroner's Inquest" following the disaster exonerated the janitor as well as the school board employees of charges they failed to prevent the disaster by recognizing Kehoe's behavior (Bernstein 2009; Ellsworth, 1927).

## DISCUSSION

### Motivations for Leakage

The motivation for leakage can be either intentional or unintentional, of course, depending on the perpetrator's relationship with the person who hears, reads, or sees the leakage. It seems most likely that leakage is not singly motivated, but rather occurs for a number of reasons. These motivations could range from the need for excitement,

a sense of accumulating power, a desire to frighten or intimidate, a seeking of attention, to simply fear and anxiety concerning the impending act. In some cases, it may reflect an inability of subjects to contain within themselves the emotions associated with the anticipated violence. They may regret the leakage as soon as it has been uttered or communicated in some form. In other cases, such as the Sodini case, it may be a prolonged and deliberate seeking of attention, perhaps from anyone, before the act; and a desire to memorialize their leakage in cyberspace following their death. This latter behavior, much more deliberate than spontaneous, may be a product of pride investment, or narcissistic inflation concerning the act itself and the notoriety it will bring to the subject after death. Often this pathological narcissism is compensatory: the fantasy of the act, and all the planning and preparation, have brought a resolve and meaning to a life that is emotionally blighted and socially aimless (Hempel et al., 1999; Meloy et al., 2004b). Historical acts of martyrdom, even if not motivated by religious belief, can contain within them both homicidal and suicidal motives, and a desire to be memorialized by others (Menninger, 1938). What is clearly apparent in our work, but still often misconstrued by others, is that leakage is not generally motivated by a desire to be caught or stopped, which would imply the anticipation of remorse, or recognition that the impending act is desired, but morally repugnant. This would suggest a level of maturity, stability, and conscience development that appears woefully absent in many of these cases.

### Evaluating Leakage

Leakage during psychotherapy may either permit or mandate a duty to protect a third party in the majority of statewide jurisdictions in the United States.<sup>1</sup> First enunciated by the California Supreme Court as a duty to warn in 1974, and then expanded to a duty to protect in 1976 (*Tarasoff v. Regents of the University of California*, 1976; Lipson & Mills, 1998) and subsequently codified in Section 43.92 of the California Civil Code, the evolution of such a duty has taken a meandering, and sometimes paradoxical, course (Felthous, 1989; 2001; Werth, Welfel, & Benjamin, 2009). In California, for example, the duty was recently expanded by case law which found that a family member of a patient could communicate a threat to the therapist that could obligate the therapist to act on the belief that the patient posed a risk of grave bodily injury to another person (*Ewing v. Goldstein*, 2004). In Texas, however, the Supreme Court in 1999 refrained from imposing on mental health professionals a duty to warn third parties of a patient's threats because their legislature had established a policy against such a common law course of action (*Tharpar v. Zezulka*, 1999).

Such civil duties to warn and protect were intended to overcome the human resistance to decisively intervene and help someone at imminent risk, often a stranger to the professional, while balancing the privacy needs of the patient. The evaluation of leakage by a threat assessor during a focused and formal consultation may also be quite different from the evaluation of such information in a clinical practice or hospital setting. In the latter, there are likely to be more financial and time constraints to assess the credibility of the

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<sup>1</sup> Thirty-two states currently mandate a duty to protect; 18 states or Canadian provinces do not mandate any particular action when clients disclose violent intent to their therapists, but permit a breach of confidentiality; 14 jurisdictions currently remain silent as to whether a duty to warn or protect third parties exists (Werth, Welfel & Benjamin, 2009).

leakage through other independent sources. Some jurisdictions may also require an overt act of violence rather than an indirect threat to a third party (leakage) or a direct threat before civil commitment proceedings can be implemented. Leakage actually heard by a percipient witness who has the legal authority to involuntarily commit is more likely to meet the particular jurisdictional standard of proof for such a civil detention than if reported as hearsay by a third party. Whatever the clinical or forensic setting, we recommend that evaluators make all reasonable efforts to investigate the details of the leakage, assess its credibility, and not lose sight of the importance of leakage, direct threats, and other warning behaviors in cases where the violence appears to be intended and the target is specific (Borum & Reddy, 2001; Calhoun & Weston, 2003).

The weak link in the identification and assessment of leakage is the layperson who sees, reads or hears about it, and has no prior training or education regarding third party threats. If such a witness lacks the knowledge or will to tell someone with the experience to evaluate it or "connect the dots," it remains useless. Often the psychology of the witness is to rationalize ("I was too busy to do anything"), minimize ("I thought he was joking"), or deny ("He didn't say that") what he or she has seen or heard as a means of managing anxiety about such an impending event. Such post-offense commentary by those who were privy to leakage, and did nothing, may also serve to justify personal passivity. Paradoxically, social psychology experiments have shown for decades that the more people who know about or witness a crime being committed against another, the less likely it is that any one person will act to prevent the injury – the Good Samaritan or bystander effect (Latane & Darley, 1969). This may also apply to anticipated targeted violent events when the third party knows that other people know of the threat, or at least assumes that they do.

### **Operational and Research Suggestions**

The early identification and correct interpretation of leakage are essential to its ultimate value to warn of and interdict targeted violence. Having access to multiple examples of leakage can allow threat assessors and other mental health clinicians to evaluate its significance more accurately. It can also lead law enforcement professionals and forensic and clinical evaluators to discover other forms of leakage, and, most importantly, other warning behaviors, including actual evidence of planning and preparing for the attack. Review of our case studies also indicates that the threatener's warning behaviors varied according to the closeness of the observer. For example, while a family member might observe the acquisition of weapons at home, a pathway warning behavior, a co-worker or fellow classmate – unaware of the behavior at home – may be privy to the leakage warning behavior. Furthermore, if leakage behavior is ignored, normalized ("Others make similar comments") or explained away, additional and more specific leakage may be missed until after the violent act occurs.

We believe it is essential to assess and evaluate leakage in the context of other behaviors in which the individual is engaged – the totality of the circumstances – in order to determine its dangerousness and predictive value, and to set it apart from meaningless or harmless remarks or writings. The evaluation of a single example of leakage, without looking for additional leakage or other warning behaviors, will likely result in an inaccurate and incomplete threat assessment. As in the case examples described earlier, leakage was made by the attacker prior to the event, and was often accompanied by other warning behaviors. However, the leakage was ignored,

misunderstood, or unreported, and therefore not used to determine if additional leakage or warning behaviors existed.

Further research concerning leakage is necessary. Most importantly, our narrowed, and we believe, more precise definition needs to be systematically applied to a large sample of targeted violence cases to see if it can be reliably assessed by professionals, and whether or not it has any concurrent or predictive validity. Where leakage is discovered subsequent to an act of targeted violence, such cases need to be compared with cases wherein leakage did not lead to targeted violence (false positives), and cases wherein targeted violence occurred but there was no leakage beforehand (false negatives). The relationship between leakage and other warning behaviors may be critical for prediction, but this is an empirical question yet to be answered. It may also be determined that certain aspects of leakage are more predictive of actual targeted violence than others, and may apply to certain kinds of targeted violence events and not to others. We believe the standardized and parsimonious definition of threat assessment terminology is a first step in this scientific pursuit, and will help to advance this particular idiographic methodology, bringing it closer to the more scientifically established, probabilistic, and general violence risk approaches in the field of forensic psychiatry and psychology (Otto & Douglas, 2009).

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