A KGH Pathway to Violence Model: Understanding Precursors to Becoming an Active Shooter

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Executive Summary

This paper presents a pathway to violence (PTV) model that is synthesized from leading concepts and models found in academic, government, and law enforcement literature. Our model is a seven-stage process of progressively escalating risk-based mindsets and behaviors by susceptible individuals that culminate in a violent active-shooter type attack. One of this model's innovative features is the inclusion of a threshold demarcating an end point for most individuals' angry, yet nonviolent mindsets and behaviors, and the decision by others to move from their violent ideations and fantasies to planning and preparing to conduct an attack. The threshold also represents a point indicating whether the timeframes for planning and preparation to launch a violent attack will be reactive (i.e., emotional and quick) or predatory (i.e., involving a lengthier preparatory period). A table and graphic portraying the PTV model are included, as are appendices with a description of the PTV models and concepts that were used in preparing this analysis. The KGH PTV model is intended to serve as a training and reference resource on active shooter identification and prevention for a variety of end users, and as a basis for further analysis of pathways into violence by active shooters and other types of violent actors.

PTV Models: What They Are and How They Are Used

This Concept Paper presents a consolidated overview of leading PTV concepts and models describing the spectrum of progressively escalating stages experienced by those who may be prone to commit intentional violence. The overview is based on a review and analysis of the extensive academic, government, and law enforcement literature on the subject.

Overall, the pathway to violence is a framework for analyzing the types of risk-based mindsets, motivations and activities (i.e., risk factors) that likely precede active shooter incidents from the attacker's standpoint, as he/she evolves to conduct such intentional violence. A PTV model details stages that a potential attacker is likely to progress to reach the end-point of intentionally utilizing violence to respond to perceived injustices and grievances.

The progression of steps to such violence begins with certain crisis-type events that may especially traumatize, anger, and aggravate those affected. These might include school failures, job terminations, failed personal relationships, or other similar events, including psychiatrically-induced hallucinations. Although a clear majority of affected individuals respond to them in socially constructive ways, a minority of susceptible individuals may be unable to do so, and begin to fantasize about rectifying their perceived injustices and grievances through retributive violence.

As mentioned, many types of angry mindsets and behaviors by affected individuals are dealt with peacefully by family, friends, teachers, employers, mental health professionals, or by the individuals themselves; while other angry and vengeful behaviors may require law enforcement intervention to resolve them. The stages described in PTV models are not necessarily static;

some may occur simultaneously, in quick progression—or not at all. At any point along the pathway, risk-based mindsets and activities that could lead to an attack can be mitigated by risk-reducing protective factors.[1]

In general, PTV models are intended to support analysts, administrators, and public safety practitioners by explaining and outlining the risk-based factors that might lead up to an attack. While PTV models may suggest possible future steps toward violence that individuals of concern might take, such stages are not necessarily predictable and may be reversible. A PTV model is also intended to provide insight into intervention points and associated risk characteristics that those who have some association with a susceptible individual can identify and utilize to preempt or prevent continued progression along the pathway to violence.

The KGH PTV Model

OVERVIEW

The KGH PTV model is a synthesis of the research findings described in Appendix B. It presents the pathway into violence as a process of progressively escalating risk-based mindsets, behaviors and activities. This does not imply that the process is necessarily linear in its progression or that the preceding stages prior to an attack must be present in every attack.

What differentiates the KGH PTV model from others is the inclusion of a threshold that represents a distinct boundary or crossing point from what may be considered angry and vengeful, yet nonviolent mindsets and behaviors, to behaviors indicative of an escalating and increasing risk of a potentially violent attack. The threshold also explains the two types of violent responses – reactive or predatory – that are likely to characterize such progression into violence.

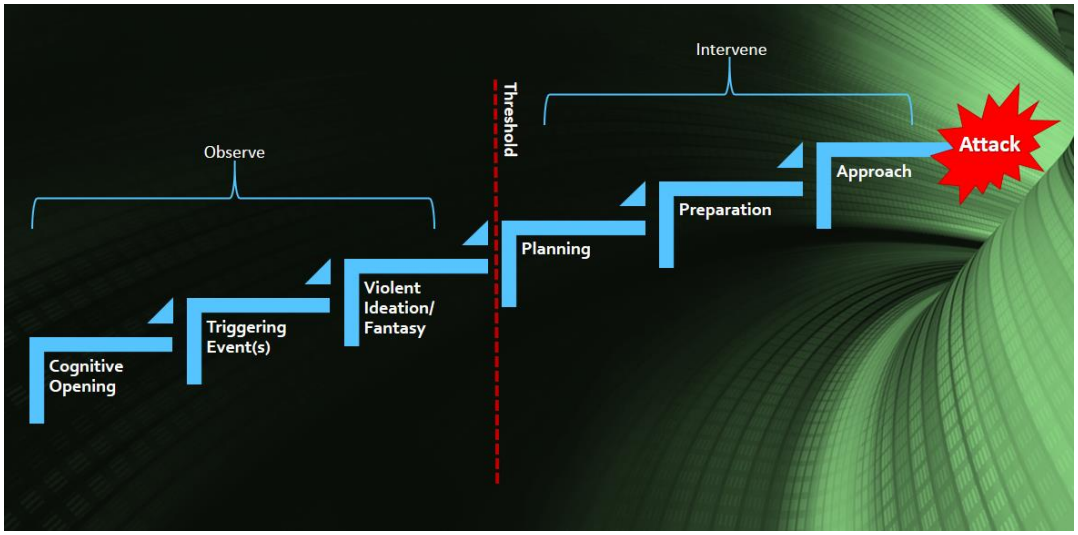

Figure 1. KGH Pathway to Violence Model

The KGH PTV model also is designed to capture the temporal aspect of the trajectory to violence. Once the threshold is crossed a reactive or predatory type of violent response will likely result. The timeframe then between each additional planning and preparatory stages within a violent response is likely to be shorter and compressed, increasing the need for a rapid and effective intervention. However, depending upon which violent response, whether reactive or predatory is utilized, the length of time between the threshold being crossed and the actual attack will vary, with predatory violence taking longer in the pre-attack phases. As noted above—and it must be stressed throughout—of the number of individuals who exhibit commonly shared risk-based mindsets and behaviors at the early stages of the pathway, only a tiny minority will cross the threshold and begin to actively plan and/or carry out an attack.

Finally, as this PTV model is further refined, it will be tested against a sufficiently large and representative sample of cases to validate its utility as a possible tool kit.

Note, therefore, that the KGH PTV model is intended for illustrative and analytic purposes, and should not be considered as diagnostically valid for clinical purposes since it has not been validated scientifically. Although the model's risk and protective factors are drawn from the psychological literature on these issues, over time it will be tested against the psychological and behavioral characteristics of past cases of active shooters to validate it so that it can be used as a diagnostic tool kit.

DESCRIPTION

Awareness of the risk factors that contribute to individuals' pathways into active shooter-type violence has increased in recent years due to numerous high profile incidents and extensive case studies about their pre-incident, risk-based mindsets and behaviors. **Risk factors** are defined as "the presence or absence in a given case of factors which have been found through research to be statistically associated with violence."[2]

Awareness of risk factors is also crucial to understand how **protective factors**, which mitigate potential escalation into violence, function as critical intervention variables to reverse a trajectory toward violence. Since active shooter attacks are usually the end of identifiable pathways of varying timeframes from the initial triggering event(s), it is important to understand such multi-stage trajectories into violence, so that those in their immediate surroundings can be alerted by their risk-based mindsets and behaviors prior to their attacks for possible preemption and peaceful resolution.

It is also important to note that susceptible individuals may change their mind about engaging in violence on their own, so the presence of indicators associated with protective factors can be observed through training and awareness by those in their surroundings.

In general, the pathway of engaging in active shooter-type violence results from an interaction among four primary factors:

1. An individual's perception of a lack of alternatives to engaging in violence to redress grievance(s) due to their psychological disposition.
2. Traumatizing triggering events or enabling conditions in one's environment.
3. An individual's capability to embark on violent action through the acquisition of weapons and training in employing them in an attack.
4. The absence of internal and external protective factors to preempt or prevent such violence.

The KGH model is based on a seven-stage framework that incorporates factors involved in violent responses to perceived grievances. As such, these stages map the risk factors that are likely to illustrate an individual's progression into potential violence via the responses that might occur, whether reactive or predatory, as well as the protective factors that might mitigate escalation. This framework is further organized into two categories of counter-action intervention opportunities: "Observe" (three stages), "Intervene" (four stages). Further, a threshold is inserted to signify an individual's transition from the "Observe" to the "Intervene" stages, indicating a higher probability of violent response. In many cases, the threshold into violence is unlikely to be crossed from the initial observation stages if appropriate protective factors are present and such risky mindsets are recognized early on. Subsequently, only a minority of susceptible individuals are likely to cross into the later stages which require intervention.

Stage 1: Cognitive Opening

The first stage within the KGH PTV model is the presence of a cognitive opening. Cognitive opening is a term that describes an individual's conscious and unconscious mental and psychological predispositions which foster adaptive (i.e., protective) or maladaptive (i.e., risk factor) responses to stressors and traumatizing events, such as personal crises or perceived injustice by others. Adaptive (or constructive) coping responses involve strategies to reduce such stressors that are nonviolent and seek supportive relief. Maladaptive coping responses, on the other hand, involve unhealthy and neurotic response strategies. In extreme cases, these maladaptive responses carry an unrestrained intensity that increases an individual's likelihood to consider utilizing violent means to address their perceived grievances and thus, embark on a trajectory into violence. (A detailed description of the risk and protective factors that comprise the cognitive opening is found in Appendix A.)

Stage 2. Triggering Events

The second stage within the KGH PTV model is the experience of a traumatizing triggering event or cluster of related events as a triggering event initiates or precipitates a course of action (and reaction). Potential triggers for those who might be susceptible to desiring violent rectification include extreme life setbacks such as significant failures in school, employment, military service,

or romantic relationships, as well as facing major disciplinary or legal issues.[3] Triggers may also be external in nature, such as a susceptible individual's identification with portrayals of violence in social media, the propagation of extremist ideologies and role models, extremist preachers or political leaders, as well as peer encouragement.[4] Although a single traumatizing event may serve as a trigger, it is equally likely—if not more so—that there is a cumulative process leading up to the actual triggering event.

Stage 3. Violent Ideation/Fantasy

The third stage within the KGH PTV model is Violent Ideation/Fantasy. Ideation itself is the act of forming ideas, and may include thinking of how to put ideas into action. In the behavioral context of someone on the pathway to violence, it is viewed as "A psychological state in which an individual generates alternate scenarios, creates fantasy worlds, or otherwise imagines things in a way that may contradict external reality. In this context, ideation may be constructive or escapist, creative or destructive, depending on the lens through which this state of mind is being observed. Ideation might include suicidal scenarios in which an individual may think about putting vengeful ideas to action."[5]

In the PTV context, violent ideation is likely to include thoughts of committing homicide, suicide, or both. Suicidal ideation, in this context, is a medical term to describe "thoughts about suicide, which may be as detailed as a formulated plan, without the suicidal act itself."[6]

Examples of violent ideational/fantasy manifestations within the PTV model include self-identification as a potential shooter through the glorification of past shooters, use of "pseudo-commando" language, paranoid expressions, injustice collecting (retention of cumulative perceived injustices), a strong fixation and focus on perceived grievances, destructive envy, and a nurturing of feelings of persecution.

Threshold

The KGH PTV model inserts a threshold which signifies a distinct separation point between an individual who is merely thinking or fantasizing about engaging in violence and an individual who decides to begin taking active, operational steps toward carrying out a violent attack. As previously mentioned, as individual's response to the preceding three stages, will not cross into violent aggression when "individual and contextual protective factors [are present] that can reduce the negative impact of a risk factor or otherwise act to diminish the probability of a violent outcome."[7] Such protective factors include a strong social support network, strong and positive social bonds, an openness to intervention, and "resilient personality traits."[8] It is when an individual's maladaptive or negative coping mechanisms take over, that a person is likely to launch into potential preparing and conducting an attack.

As the threshold is crossed an individual embarks towards carrying out retaliatory violence, with a violent response ranging from reactive (i.e., impulsive and quick) to predatory (i.e., a longer timeframe for planning and preparing for an attack).

Stage 4. Planning an Attack

In the fourth stage of the KGH PTV model an individual embarking along the PTV will begin to plan his/her attack. It is during this stage that the shooter will decide on "who, what, where, and when" to attack. There is a wide range of sophistication in tactical planning, with some shooters doing little to no planning and attacking impulsively as is seen in reactive violent responses, while others engage in extensive planning, including preoperational surveillance of their intended targets as exhibited by those conducting predatory forms of violence.

Some potentially observable activities during the planning stage include social withdrawal, research on target selection, researching and sympathizing with or glorifying past mass murderers, deciding the type of weapon to be used, threatening communication against the target, and, in some instances, surrounding oneself with like-minded individuals (who may share one's sense of grievance).

Stage 5. Preparation for Attack

The fifth stage of the KGH PTV model is when the potential shooter begins preparing for his/her attack and is signified by a monetary and/or time investment. During the preparation stage, the shooter will attempt to obtain the weapon(s), ammunition, and supplies necessary to carry out the planned attack. The weapon(s) will be obtained legally or by theft and may require modification for or of the attack plan. The weapons will usually be hidden in a designated place. The shooter will attempt to become proficient in using the weapon(s), and surveil the target, if necessary.

Some potentially observable activities at this stage may include collecting elements of his/her attack day "costume" through purchasing symbolic clothing specifically for the attack, practicing at a shooting range, weapon/ammunition acquisition, and last resort behaviors such as preparing a will and giving away personal possessions. Conducting physical surveillance of the potential target location may also attract scrutiny, however, so it is likely to be done surreptitiously.

Stage 6. Approach Target

This sixth stage in the KGH PTV model, approaching the target, is the most immediate, compressed, and threatening timeframe prior to the actual attack. It may take several days (e.g., traveling from another city to the location of the intended target) or a matter of a few

hours or minutes. The shooter will be armed, unless the weapon(s) have already been prepositioned close to the attack location.

Stage 7. Conduct Attack

At this final stage, the shooter will breach and penetrate the target, and execute the shooting attack, whether indoors or outdoors.

Table 1. KGH Pathway to Violence Model: 7 Stages

Category	Stages	Cognitions & Behaviors
Observe	1. Cognitive Opening	Negative Coping Mechanisms
		Maladaptive Stress Responses
		Personal Social Stressors
		Family Dynamics
	2. Triggering Events	Interpersonal Conflict
		Life Setbacks (e.g., academic failure, divorce, job termination)
		Strong Grievances (e.g., bullying, etc.)
		External Influences (e.g., extremist ideologues/preachers)
	3. Ideation/Fantasy	Fixation and Focus on Perceived Adversary
		"Collecting" Injustices
		Sudden Negative Behavioral Changes
		Pervasive Paranoia
		Suicidal/Homicidal Ideation
		Self-identification as "Pseudo-Warrior"
		Use of Pseudo-Militaristic Language
		Indoctrination into Extremism
		Strong Arousal of Hostility Against Others
Threshold		Presence of Risk Factors v. Protective Factors
		Engage in a Reactive or Predatory Response
Intervene	4. Attack Planning	Social Withdrawal
		Target Research/Selection
		Decision on Weapon/Ammunition Type
		Decision on Likely Attack Date
		Seek Like-minded Friends to Join Conspiracy
	5. Attack Preparation	Acquire Weapon/Ammunition
		Practice Attack
		Prepare Attack "Costume" (e.g., Kevlar vest)

	Target Surveillance
	Cache Weapon(s) for Retrieval
	Prepare Will
	Give Away Personal Possessions
6. Approach Target	Travel to Target Location Retrieve cached weapon(s)
7. Attack	Breach and Penetrate Target
	Attack Indoors or Outdoors

OPERATIONALIZING THE KGH PTV MODEL

The KGH PTV model posits factors that may predispose an individual to be at risk for choosing retributive forms of violence. As the framework evolves, the presence of particular risk factors might make someone vulnerable, with life setbacks serving as triggers leading to violent fantasies, and moving him/her through the continuum toward violence.[9]

Throughout this pre-incident process, potential shooters may leave verbal, written, or behavioral clues or "leakage"[10] in which they communicate their intentions and plans indirectly. Cumulatively, the sequencing of these factors is not always applicable to every shooter, so there is considerable variation in the risk-based mindset and behavioral dynamics that play out along each shooter's pathway to violence.[11] Regardless, when assessing risk, three levels of threat need to be examined. These are: low (a threat "which poses a minimal risk to the victim and public safety")[12], medium (a threat "which could be carried out, although it may not appear entirely realistic"),[13] and high (a threat "that appears to pose an imminent and serious danger to the safety of others").[14]

In this framework, the model's first six stages include risk-enhancing variables (risk factors). Also, included in the overall framework are significant risk-reducing variables (protective factors). These provide indications that some, or all, of the risk factors may be lessening, thereby reducing the likelihood of the first three stages leading to an act of violence.[15]

Early identification of susceptible individuals at risk of engaging in violence is critical to active shooter prevention. When those in their immediate surroundings hear, or observe such individuals' ideas and plans for violence prior to their incidents, understanding how to pick up this "leakage" of risk factors is critical to preempt potential violence at the earliest stage possible. While the leakage of potential intentions to carry out an attack might be more prevalent once the threshold is crossed into the intent and capability stages, there may be less time to act upon it. Noticing leakage during the initial observation stages may allow for the fortification of personal and professional protective forces.

There is no single methodology or formula for determining an individual's likely risk of imminent violence, and this is especially so when considering a potential active shooter. In general, as demonstrated by PTV models, unless there are a greater amount of protective as

opposed to risk factors present in each case, the further an individual is likely to progress towards committing an attack.

THE WAY FORWARD

The KGH PTV model synthesizes existing PTV concepts and models from the social and behavioral science literature and forms the basis for several potential applications across the government and private sectors. The KGH PTV model can be adapted and built upon for the following uses:

- A PTV component of KGH AS curriculum and workshops.
- A free-standing multimedia informational briefing for public and private sector stakeholders.
- With appropriate validation, a diagnostic and analytical tool for use by HR departments and threat assessment teams in places such as educational institutions, workplaces and other organizations.

The KGH PTV model attempts to succinctly outline the risk factors that likely lead an individual to embark on an active shooter attack. The next analytical step will be to apply it to past incidents to test its validity, including the relative proportion of reactive versus predatory responses and their corresponding differences, and then derive policies and measures capable of effective prevention, preemption, or mitigation.

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Appendix A: Defining and Classifying Cognitive Opening Stressors

The literature highlights significant psychological risk factors or stressors that may drive such susceptible individuals into committing violence. These can be organized into four general types of risk factors.[16] These are not mutually exclusive and are intended for illustrative purposes. As previously noted, exhibiting such psychological characteristics does not imply that such individuals will necessarily progress along the pathway to violence and that most individuals exhibiting them will remain nonviolent.

1) **"Clinical Disorders."** Stressors are "personal."[17] In one formulation, these consist of individuals with psychopathic, psychotic, or traumatized personalities.[18]

2) "**Social Disorders**." Stressors are social in nature, and affect a predisposed individual's interaction with others in society. These are exhibited by individuals with personalities that can be characterized as paranoid, borderline, and anti-social. In terms of personal dynamics, these might include delusions of persecution by the intended target,[19] negative coping mechanisms to crises, and a grandiose and narcissistic sense of entitlement in expecting "victory and special treatment [that] mask an underlying sense of inferiority,"[20] and that one is, therefore, beyond normal rules in the way they act towards others. Other personal dynamics might include increasing social isolation because they "marginalize" themselves as "secretive individuals who do not want others to know them,"[21] bizarre beliefs that others find strange, and they might strongly internalize wrongdoing to them or shame in their social interactions as part of an "injustice collecting" process.[22]

3) "**Medical/Physical Disorders**." Stressors include an individual having "body/biological"-related issues,[23] such as "chronic illnesses and physical defects."[24] These are significant, according to Peter Langman, because some studies on "the connection between biological problems and violent behavior" have "found that male murderers had more chronic illnesses and physical defects than their brothers who did not commit murder."[25] As Langman concludes, "Interestingly, a surprising number of school shooters experienced biological challenges that may have affected their identities or added to their distress."[26]

4), "**Psycho-Social and Environmental**." A susceptible individual's psychological stressors are exacerbated by difficulties with societal support structures such as marriage (e.g., troubled divorce), educational environment (e.g., academic failure, conflicts with teachers or other students), occupational problems (e.g., job termination), or other types of stressors in his/her environment.

As these four types of psychological disorders play out, whether individually or in correlation with one another, a susceptible individual's potential to engage in potential violence can be assessed through several tools. One such tool, the HCR-20, is designed to assess an individual's risk for interpersonal violence, which is defined as "actual attempted, or threatened harm to a person or persons."[27]In this definition, actual physical harm is not required to be present, with the "*threatened* or *attempted* harm" fitting the definition of violence.[28] The HCR-20 consists of

20 factors (hence its name): three scales are intended to cover an individual's past (10 risk factors), present (five risk factors), and future (five risk factors) risk possibilities. As a tool kit, the HCR-20 includes a professional manual that provides information about violence risk assessment, describes each of the risk items and how they are coded, and instructions for reaching a final risk decision and formulating risk management plans.[29]

The HCR-20 derives its name from the three scales below.

Phase 1: **Historical (Past) Items** (Previous Violence, Young Age at First Violent Incident, Relationship Instability, Employment Problems, Substance Use Problems, Major Mental Illness, Psychopathy, Early Maladjustment, Personality Disorder, Prior Supervision Failure).[30]

Phase 2: **Clinical (Present) Items** (Lack of Insight, Negative Attitudes, Active Symptoms of Major Mental Illness, Impulsivity, Unresponsive to Treatment).[31]

Phase 3: **Risk Management (Future) Items** (Plans Lack Feasibility, Exposure to Destabilizers, Lack of Personal Support, Noncompliance with Remediation Attempts, Stress).[32]

Finally, it is important to note that the psychological theories and terms outlined in this stage of "Cognitive Opening" are intended for general illustrative, not clinical, purposes, since there is no single profile of a potential active shooter and most individuals who may have psychological disorders will not engage in violence. Moreover, as Stanton E. Samenow, a psychologist, has pointed out, "Information about the personality makeup and motives of mass shooters is usually slow to dribble out. Security and privacy issues make it difficult to learn a great deal about these individuals until a fair amount of time elapses and sometimes not even then."[33]

Appendix B: Table of Literature Resources Used

Title	Author(s)	Summary
Manual for the Structured Assessment of Violence Risk in Youth (SAVRY)[34]	Borum, Randy, Bartel, Patrick and Forth, Adelle	SAVRY is a risk assessment protocol for adolescent violence and provides a structured model for assessing and scoring an individual's proclivity to embark along on a pathway to violence. This risk assessment protocol consists of an assessment of three distinct categories of risk factors and a additional consideration of the presence of a protective mitigating factor which can potentially reduce the level of violence risk. The three categories of risk factors include 1.) historical risk factors, 2.) social/contextual risk factors, and 3.) individual/clinical risk factors.
Threat Assessment and Management Strategies: Identifying the Howlers and the Hunters[35]	Calhoun, Frederick S. and Weston, Stephen W.	Calhoun and Weston offer a "blue collar approach to threat management," situated largely on their model of approach for identifying and evaluating an individual's signaling of intentional violence, which they introduce as identifiable behaviors along a "pathway to violence." More specifically, Calhoun and Weston put forth a sequential stage model accompanied by corollary behaviors which flag an individual as posing a potential threat for committing targeted violence. Calhoun and Weston's model is composed of six distinct and progressive stages an individual goes through and actively experiences as he/she embarks on a path culminating in targeted violence. Everyone's pathway contains the same six stages, although they are experienced by each person to different degrees for different lengths of time. While not a necessarily linear model of progression, each stage is an evolution of its former and does remain sequential. Accordingly, the stages are 1.) grievance, 2.) ideation of violence, 3.) research and planning, 4.) preparation, 5.) breaching, and 6.) attack.
Coding Guide for Violent Incidents: Instrumental Versus Hostile/Reactive Aggression[36]	Cornell, Dewey G.	Within his structured coding guide, Cornell differentiates between two types of aggression: reactive/hostile and instrumental. The two main characteristics of reactive/hostile aggressions are reaction to provocation and arousal of hostility, described as a relatively primitive response to a perceived threat as in a form of self-defense. Instrumental aggression however, involves deliberate goal directedness and planning to obtain an objective or goal where the violence or aggression is representative of more than causing physical injury. Due to the premeditation and relatively symbolic nature of instrumental aggression, this is the form of aggression which can mapped by the PTV model. Although Cornell offers no sequential phases for instrumental aggression, one can surmise them as three distinct phases which include 1.) goal directedness, 2.) planning, and 3.) aggressive act.
Predatory Violence Aiming at Relief in a Case of Mass Murders: Meloy's Criteria for Applied Forensic Practice	Declercq, Frederic and Audenaert, Kurt	Declercq and Audenaert present two categories of violent aggression: affective and predatory and further discuss a continuum between the two types where most violence occurs. The authors identify affective aggression as reactionary aggression utilized against a perceived threat. As such, affective aggression tends to be impulsive and relatively uncontrolled. Predatory violence, on the other hand, is characterized by the authors as being forms of aggression which are purposeful and instrumental in achieving an end other than threat alleviation.

Title	Author(s)	Summary
Commentary: Approaching and Stalking Public Figures - A Prerequisite to Attack[37]	Dietz, Park and Martell, Daniel A.	Dietz and Martell discuss the physical pursuit or stalking of public figures which the authors recognize generally consist of excessive, although usually non-violent, unwanted attention by mentally unstable persons. The authors further offer a conceptual framework with the purpose of predicting the likelihood of a public figure situation resulting in an act of violence. Within this vein, the authors have formulated a framework that can be outlined as a four-stage escalatory pathway to violence. The four stages include 1.) psychological predispositions, 2.) exhibiting a delusion, 3.) threatening communications, and 4.) act of violence. The model's first three phases can be considered as risk-enhancing variables (risk factors). Also, included in the overall framework are risk-reducing variables (protective factors), as well. These provide indications that some or all the risk factors may be lessening, thereby reducing the likelihood of the first three phases leading to an act of violence. This framework is of interest because some of its pre-incident pathways into becoming stalkers and assassins are similar to those who become active shooters.
Historical-Clinical Risk Management-20 (HCR-20) Violence Risk Assessment Scheme: Rationale, Application, and Empirical Overview[38]	Dough, Kevin S. and Reeves, Kim A.	The HCR-20 is designed to provide a tool for assessing an individual's risk for interpersonal violence, which is defined as "actual attempted, or threatened harm to a person or persons." In this definition, actual physical harm is not required to be present. HCR-20 consists of 20 total factors which are divided into three phases, with the three HCR scales cumulatively covering an individual's past, present, and future risk possibilities. More specifically, the tree scales include 1.) historical or past items (10 risk factors), 2.) clinical or present (five risk factors), and 3.) risk management or future (five risk factors) risk possibilities. As a tool kit, the HCR-20 includes a professional manual that provides information about violence risk assessment, describes each of the risk items and how they are coded, and instructions for reaching a final risk decision and formulating risk management plans.
Threat Assessment in Schools: A Guide to Managing Threatening Situations and to Creating Safe School Climates.[39]	Fein, Robert A., Vossekuil, Bryan, Pollack, William S., Borum, Randy, Modzeleski, William and Reddy, Marisa	Fein, et al. present an encompassing practitioner's guide integrating a behavioral threat assessment process adapted from the U.S. Secret Service and applied to address the 1999 Safe School Initiative's 10 key findings in order to foster future prevention of school violence. The purpose of the guide is to prepare those using it, namely school administrators and law enforcement officials, to more effectively incorporate the process of threat assessment within their school setting, in addition to facilitating the evaluation and management of targeted violence into effective mitigation strategies. The guide's utility as a tool for developing threat assessment resources is predicated on investigation and information seeking in five specific areas outlined in its fifth chapter. These five areas include 1.) examining the facts and situation which drew the student to attention, 2.) collecting general life and psycho-social information about the student, 3.) gathering information about "attack-related behaviors" displayed by the student, 4.) investigating the motive behind their concerning behavior, and 5.) discovering what the future intended target is.

Title	Author(s)	Summary
Threat Assessment: An Approach to Prevent Targeted Violence[40]	Fein, Robert H., Vossekuil, Bryan and Holden, Gwen A	Within this work, the PTV is presented in the context of describing the formation and use of Threat Assessment Teams in schools and places of work. The functions of an effective threat assessment program are to identify the (potential) perpetrator, assess the risks the perpetrator may pose to potential victims and/or the community at large, evaluate the likelihood of the potential perpetrator to carry out an attack, and finally to put together and manage the individual's case until he/she is no longer a potential threat. The PTV model emerges during the evaluation stage of the threat assessment process, based on the information collected about the potential perpetrator. The authors give examples of behavioral indicators or actions that can be seen as a progression of ideation, planning, preparation, and finally, implementation. Examples include expressing interest in possible targets (ideation), communicating with or about potential targets (ideation), considering harm to self or others (ideation), obtaining and/or practicing with weapons (preparation), following or approaching potential targets (planning/preparation).
The 'Pseudocommando' Mass Murderer (Part I & II)[41]	Knoll, James L., IV	Within the two articles, Knoll provides a conceptual, psychological understanding of a particular kind of mass murderer, which he typified as a "pseudocommando." Knoll accomplishes this through an examination of the statements of two "pseudocommandos:" Seung-Hui Cho (2007 Virginia Tech shooter) and Jiverly Wong (2009 Binghamton, New York shooter). Knoll highlights that a pseudocommando mass killer is set apart from other killers by the long deliberation he/she contributes prior to utilizing violent means. Knoll further typifies a pseudocommando as heavily armed and suicidal, killing indiscriminately, while also targeting those who he feels treated him badly. While Knoll does not describe a pathway to violence per se, he does delineate that the pseudocommando's grievances are a toxic mix of envy and narcissism, then which leads to fantasies of revenge and sacrifice.
Mass Murder and the Violent Paranoid Spectrum[42]	Knoll, James L., IV and Meloy, J. Reid	Knoll and Meloy develop a model for analyzing the psychology of mass murderers through analyzing the writings that they leave behind. The authors note that while the mass murderers studied may not meet the clinical definition of psychosis, they do display elements of paranoia that fit into a progression that can be tracked along a spectrum of paranoid behavior from exhibiting paranoid traits to psychotic delusion. The authors portray their model in four stages: Perception, Contemplation, Decision, and Resolution. These stages correspond mostly to the Grievance, Ideation, and Planning stages of PTV. Knoll and Meloy offer little new in terms of an intervention strategy: raising awareness; inculcating a sense of social responsibility so that the public will feel able to report concerning behavior; and for mental health professionals, the need for clinical risk assessment and management.

Title	Author(s)	Summary
School Shooters: Understanding High School, College, and Adult Perpetrators[43]	Langman, Peter	Langman's PTV model, which primarily looks at school shooters, is a psychological conception and explores the motives and other factors that drive individuals to carry out such attacks. This collected information is applied to classify these individuals per the author's typology of psychopathic shooters, psychotic shooters, and traumatized shooters to explain the factors leading to their attacks and allow for comparisons with other shooters. While the author has not formally laid out his own model, his approach can be conceptualized into five factors that generally drive active shooter attacks. These five factors include 1.) body-related issues, 2.) psychological issues, 3.) triggers, 4.) external influences, 5.) leakage.
Mass Murder at School and Cumulative Strain: A Sequential Model[44]	Levin, Jack and Madfis, Eric	Levin and Madfis devise a model to analyze what causes individuals to carry out massacres at educational institutions. They state that the primary element found in school attackers is "strain," (life pressures and difficulties), and devise a scale or sequence of increasing levels and types of strain that may eventually lead to an attack. Causes of strain among school attackers can be bullying, abuse at home and at school, family instability. The authors note that most people have adequate coping and support mechanisms for everyday strains, while only a few turn to violence. Individuals who lack these coping and support mechanisms may be subject to a greater level or intensity of strain, which may lead them to marginalize themselves. The final iteration of strain is what the authors describe as "acute," or a catalytic event, such as rejection by a romantic partner, expulsion or transfer from school. In some cases, this will push an individual into a mindset that considers violence as a means of restoring or augmenting his/her self-worth.
Suicidal Mass Murderers: A Criminological Study of Why They Kill[45]	Liebert, John A. and Birnes, William J.	Liebert and Birnes examine why suicidal mass murderers kill. The book uses Seung-Hi Cho (Virginia Tech shooter) as its principal case study. While the book is a comprehensive study of all elements of the Virginia Tech shooting, it also reviews psychological aspects of mass murderers. Of particular value to PTV is the section on warning signs of violence. They note that in many cases, these warning signs may appear long before the subject turns to violence, and that in cases of suicidal mass murderers, the future perpetrator may announce his intentions beforehand.
The Role of Warning Behaviors in Threat Assessment: An Exploration and Suggested Typology.[46]	Meloy, J. Reid, Hoffman, Jens, Guldimann, Angela and James, David	Meloy, et al. propose a unified behavioral framework for understanding an individual's accelerating risk towards violence by presenting a typology of eight noticeable "acute, dynamic, and particularly toxic" behavioral changes which further flag a person as potentially posing an actual threat of targeted violence. The behavioral model presented by the authors is not intended to represent a risk factor classification, rather they suggest its utility is applicable as a means for conceptualizing changing patterns of behavior and term their typology as one of warning behaviors. The warning behavior typology consists of 1.) pathway warning behaviors, 2.) fixation warning behaviors, 3.) identification warning behaviors, 4.) novel aggression warning behaviors, 5.) energy burst warning behaviors, 6.) leakage warning behaviors, 7.) last resort warning behaviors, and 8.) directly communicated threat warning behaviors. Within this piece, Meloy, et al. explicitly suggest that such behavioral changes are actual evidence of an increasing risk towards targeted violence which require an appropriate operational response.

Title	Author(s)	Summary
The Study of Violent Crime: Its Correlates and Concerns[47]	Mire, Scott and Robertson, Cliff	Mire and Robertson put forward a theoretical understanding for conceptualizing a direct causal relationship between shame and violence, where shame is defined as an individual's internal concept of negative self-evaluation produced by an experience of profound rejection of the self by others. Shame's pervasive ability to incubate and produce violent behavior occurs when an individual's sense of shame becomes internalized and in doing so compromises his/her ability to feel worthy to others. Once internalized, the individual's experience of shame comes to provide the singular interpretative lens through which he/she experiences most stimuli within his/her life. Instances in which violence is present can therefore be analyzed as a maladaptive response to alleviate one's sense of shame, whereby the implemented violence acts as a protective buffer against forcing the individual to integrate the profound feelings of what has transformed into an internalized rejection of the self.
Assessing and Managing the Risks in the Stalking Situation[48]	Mullen,Paul E., Mackenzie, Rachel, Ogloff, James R.P., Pathe, Michele, McEwan, Troy and Purcell, Rosemary	Mullen, et al. propose an actuarial risk management model for mental health clinicians, suggesting each clinician build a case-by-case general stalking risk profile for each stalker, predicated on the clinician's assessment of five independent domains evaluated in totality to determine a specific level of risk associated with the stalker's overall profile. The five domains include 1.) an assessment of the relationship involved in the stalking situation, 2.) a determination of the motivation behind the stalking behavior including the outline of six distinct types, 3.) the stalker's psycho-social status, incorporating historical and current risks factors in addition to how those two risk categories interact to create potential for future risk hazards, 4.) the victim's psychological and social vulnerabilities to assess the likelihood that the victim's individual composition will aggravate the risks associated with the stalker and 5.) a macro level consideration of the legal and mental health environment in which the stalking takes place.
The Path to Terrorist Violence: A Threat Assessment Model for Radical Groups at Risk of Escalation to Acts of Terrorism[49]	Olson, Dean T.	Olson applies the PTV model, devised by Calhoun and Weston, to domestic terrorist groups and individuals. Olson notes the difference between opportunistic or impromptu violence and intended or targeted violence as described by Calhoun and others; as the latter forms of violence require a degree of premeditation and planning, they can be analyzed along a timeline or pathway. Olson presents his interpretation of the Pathway to Violence mode, which for the purposes of his study he calls the Pathway to Terrorist Violence (PTTV), in graphic form. Olson breaks down the PTTV stages into low-risk (Grievance, Ideation, Research and Planning) and high risk (Preparation, Breach, and Attack), which he also divides into noncriminal and criminal activities. Finally, he inserts what he calls a Dangerousness and Observability Threshold at the Research and Planning stage.

Title	Author(s)	Summary
Radicalization in the West: The Homegrown Threat[50]	Silber, Mitchell D. and Bhatt, Arvin	This report, published by the New York City Police Department in 2007, utilizes a comparative case study approach to provide a conceptual framework embodying the evolutionary process of radicalization into Islamist extremism in Western societies. Within the NYPD's suggested framework, the process of Western Muslims' radicalization into violent extremism is composed of four discrete stages, where each stage has distinct "signatures." While offering a sequential model of radicalization, the report stresses that it is not necessarily linear and that an individual can, at any point, not progress to its culmination or even the next stage. With that said, the stages are 1.) pre-radicalization, 2.) self-identification, 3.) indoctrination, and 4.) jihadization.
Violence Risk Assessment of the Written Word (VRAW^2)[51]	Van Brunt, Brian and The NCHERM Group	The VRAW^2 is a structured assessment tool formulated as a rubric for educational staff to use while working on threat assessment teams in order to explore and analyze a particular student's piece of writing, whether it be an email, note or fictional writing assignment, in order to assess the inherent risk or threat, overtly or covertly, contained within the sample. As a structured rubric, the VRAW^2 consists of five overall factors that can be contained within the writing sample and indicate a potential for future targeted violence. These include 1.) fixation and focus, 2.) hierarchical thematic content, 3.) action and time imperative, 4.) pre-attack planning, and 5.) injustice collecting. Also, contained within the rubric is a numeric scoring key which enables practitioners to quantitatively assess the risk potentially posed. To investigate the presence of an overall factor, an evaluation of five corresponding sub-items under each factor is required. A quantitative assessment is made possible through the ranking of the sub-items, which are specific identifiable qualities within the sample.
Workplace Assessment of Violence Risk (WAVR-21)[52]	White, Stephen G. and Meloy, J. Reid	The WAVR-21 is a 21-item practical risk assessment tool which functions through a user applying predetermined codes to identifiable and discernable modalities of a person's patterns of thinking and behavior across time and from there, determining the level and relative likelihood of targeted violence occurring. The coding criteria it provides facilitates a user's understanding and assessment of the degrees to which risk factors present have a demonstrative relationship with violence, especially considering the interaction of multiple factors within a case. As a structured practitioner's guide, the WAVR-21 addresses both static and dynamic risk factors and underscores the importance of identifying dynamic risk factors as a focus for invention in reducing risk. Of the total 21 items, the WAVR-21 is further itemized into an assessment of 19 violence risk factors addressing historical, situational, psychological and behavioral factors, in addition to an assessment of one "protective" or mitigatory factor, and one organizational impact factor.

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