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Triggers of Brutality: Unraveling the Dialectics of Extreme Violence through an Epidemiological Criminology Lens

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Introduction

This chapter initially aimed to explore the public health responses to violent crime. In our writing journey, we sought to guide the reader along a path where public health and violence intersect. However, our circumstances changed, requiring deeper reflection, where we were caught in a cyclical pattern, revisiting familiar topics in new variations, yet needing to illuminate and rethink how public health responses connect (or need to connect) not only to violent behavioral analysis but more specifically, to extreme violent behaviors. While the intellectual and interdisciplinary landscape is beginning to expand, thanks to emerging books like the one you are reading now, the broader discourse across publishing outlets (e.g., books, articles, essays, journals, news reports, blogs, and various other mediums) still lack or is in search of new and emerging ideas, thoughts, and theories that clearly articulate this nexus between public health responses and crime, a unique distinction to be shared in this chapter.

The literature on this subject is growing significantly, highlighting the intersection between public health and criminal justice and epidemiology and criminology. This is evidenced by the emerging theory and paradigm of epidemiological criminology, as demonstrated in the works by Cressey, 1960; Akers & Lanier, 2009; Akers, Potter, & Hill, 2012; Potter & Akers, 2013; Waltermaurer & Akers, 2013; Rowhani-Rahbar et al., 2024; Wylie et al., 2022; Karystianis et al., 2022; Karystianis et al., 2023; among many other scholars and practitioners.

Yet, this intersection is merely the proverbial “tip of the spear” in our quest to understand what *pushes* individuals beyond violence to extreme violent brutality and what factors *pull* these same individuals into *extreme* acts of violent behavior (Akers et al., 2012, p. 4). This chapter skims the surface of how or why violent acts might have evolved into what we now term “extreme violence,” manifesting in places and contexts previously thought immune to or shielded from such brutality. It is important to acknowledge the many theorists – and their theories in criminology – that have dedicated decades to studying this behavioral phenomenon. Our intent is not to diminish their significant contributions, but rather to build upon them by introducing unique insights, thereby expanding our intellectual horizons.

However, before such an analysis, it is essential to understand how “*push and pull*” factors become crucial (Lee, 1966). When we apply a push-pull perspective within the context of criminology, *push* factors – such as social isolation, economic disenfranchisement, and perceived injustices – can drive, or *push*, individuals *towards* extreme violence as a form of expression or solution to their plight. Conversely, *pull* factors – including the allure of belonging to a group, the promise of a higher purpose, or the attraction of achieving a particular ideological goal or exacting justice – can *pull* or entice individuals down paths that lead to extreme violent behaviors.

These “push” factors are akin to the determinants of health in epidemiology, highlighting how social determinants not only predispose individuals to poorer health outcomes but also to potentially engaging in criminal activities as a coping or survival mechanism. On the “pull” side, the allure of certain behaviors or lifestyles, despite their known health risks or potential for acts of violence, serves as a significant draw. This can be seen in the context of drug use and gang violence, where the immediate gratification or escape it provides *pulls* individuals in, despite the long-term health risks and legal implications.

More specifically, epidemiology is mainly concerned with the study of distribution and determinants regarding health-related states or events in specified populations. Epidemiology has a major focus on population-based research that looks at patterns, causes, and effects of health and disease conditions in groups of individuals. Epidemiologists study the occurrence of disease and health events in populations (e.g., meso or macro), not so much the health outcomes at the individual level. However, individual factors (e.g., micro) in their investigations and explanations set the stage for more broad predictive analysis. While epidemiology primarily focuses on studying populations, individual behavior and cases play a crucial role in epidemiologic research. For instance, in an outbreak investigation, the first identified case of a new infection is typically referred to as the *'index case'* or *'patient zero'*.

Criminology, in contrast, deals with crime as a social phenomenon. The driver of criminology is to focus on the *causes* of criminal behavior, the *nature* of specific criminal events, and society's *response* to crime. Like epidemiology, criminology primarily examines patterns and trends in a population, rather than focusing on individual crimes. However, criminology is also highly concerned with individual behavior, examining why specific individuals commit crimes and how personal factors (such as socio-economic status, family dynamics, psychological characteristics, or personal history, among others) lead to criminal behavior. Thus, criminology

includes both a population-level perspective, looking at crime as a societal issue, and an individual-level perspective, studying the actions of individual criminals.

Epidemiological criminology is an emerging theory and discipline that combines the principles, theories, and methodologies of epidemiology with those of criminology to understand and address the complex dynamics and interplay of crime and violence in society (Akers & Lanier, 2009; Akers, Potter & Hill, 2012). It involves the systematic study of the distribution, determinants, and consequences of crime and violence within populations, employing epidemiological theories and tools such as surveillance, risk factor analysis, and intervention evaluation with criminological theories and methods.

By applying a public health approach, while embedding criminological theory, epidemiological criminology seeks to identify underlying biological, psychological, sociological, and environmental factors that contribute to criminal behavior and victimization. This interdisciplinary way of thinking not only can help researchers, practitioners, students, and policymakers understand the *root causes of crime* and their social determinants *but* can also enables the development of evidence-based interventions and policies aimed at preventing and reducing crime at the population level. This is discussed more fully later in this chapter.

From a public health perspective, violence broadly might also be analogized to the contagion effect, that symbolizes the rapid proliferation of extreme violent behaviors throughout society, akin to the spread of a pathogen, generating shockwaves reminiscent of seismic activity. The interplay between these phenomena underscores the intricate interconnectedness within the fabric of violence, transcending traditional epidemiological and criminological theories. This will also be discussed in greater detail.

Building on the epidemiological criminology framework broadens our interdisciplinary approach. From this perspective, the convergence of factors can lead to what we term a “singularity of violence”: a concentrated focus on extreme violence by an individual or group. Like a black hole in physics, this “singularity” absorbs surrounding influences until it reaches a point of no return, erupting in a destructive event or where an individual is ready to explode.

This chapter aims to present diverse viewpoints and fresh and novel insights for policymakers, researchers, students, theorists, and the community at large to contemplate when exploring the motivations and triggers behind extreme acts of violence that can shatter communities. By delving into these perspectives, our objective is to encourage readers to expand their mindset and consider novel and emerging ideas, ultimately fostering a more comprehensive awareness to this critical topic of extreme violence.

Defining Extreme Violence

The distinction between "violence" and "extreme violence" is complex due to the multifaceted nature of these phenomena. Violence, broadly defined, encompasses acts that employ physical force to cause harm, injury, or property damage. Examples include assault, battery, robbery, and domestic violence, illustrating the spectrum of behaviors it encompasses. *Extreme violence*, by contrast, at least for the purposes of this chapter, denotes acts of exceptional severity or brutality, often resulting in significant harm or death. Instances such as murder, terrorism, torture, genocide, and mass shootings exemplify extreme violence, which can have profound societal impacts. The financial ramifications are substantial, with the Institute for Economics and Peace (2021) estimating the global economic impact of violence to be around \$17.5 trillion. In conclusion, while violence and extreme violence defy simple definitions, their impact on individuals, communities, and societies is profound, necessitating nuanced approaches from both researchers and policymakers.

The Language of Violent Behavior: A Thought Exercise

For individuals engaged in the study of violence — including students, practitioners, policymakers, and scholars with interdisciplinary interests — the process of distinguishing between violence and extreme violence from both a public health and criminology mindset is crucial. From our perspective, words matter! The ability to analyze and interpret the “language of violent behavior”, from “violence” to “extreme violence”, is key to understanding and unlocking its impact and motives.

Across the social and behavioral sciences, it has been said that behavior is a language. To grasp the subtle dialect of behavioral expressions necessitates a profound exploration – a deeper dive – into our cognitive processes and the methods by which we manifest our thoughts into tangible actions. It is recommended to initiate this type of analysis and exploration with a 'thought exercise,' as inspired by Wittgenstein (2021). This approach helps to frame our insight, perspectives, and actions.

For example, Wittgenstein posits that language serves as a reflection of reality, constructing 'logical pictures' of facts. In our case, how we define or understand one *state of violence* to another *state of extreme violence* can best be understood within the constraints of how facts (e.g., shootings in an educational setting) are logically organized and represented through language. In other words, our ability to discuss and understand concepts, such as violence, public health and crime responses, extreme violence, etc., is dependent upon or a function of whether our perspectives (e.g., language) is grounded more as public health researchers or as researchers of criminology. For example, the former might use the health-related term “mass shooting incident” or “gun violence”, while the latter would use the legal-based term “mass murder”.

Yet, blending these two seemingly disparate sciences is, by definition, a thought exercise. A thought exercise serves as a catalyst for generating innovative perspectives, theories, actions, insights, and initiatives. Moreover, thought exercises are not just for those in the academy, but rather, can be applied to and used by community members and practitioners of health and crime prevention. Its purpose is to enrich our comprehension, feed our ideas, or reformulate our analytical perspective of the world; ideally anchoring this process in empirical or contextual observations. This mental exploration excites the mind and engages the intellect by considering various hypothetical situations, and by introducing nascent theories, ideas, or analogies. The ultimate goal of a “thought exercise” is to reveal and nurture fresh insights, thereby refining our cognitive processes.

In this chapter, we approach the study of extreme violence and its relationship with health as a thought exercise within the context of epidemiological criminology. This necessitates a more precise framing: we are examining the nexus between public health and extreme violent crime – an area often relegated to the domain of the “conventional” criminologist.

Extreme Violence in Educational Settings: A Stark Reality

However, as scholars and practitioners deeply engaged at the intersection of public health and crime, we have been profoundly awakened to reality in recent months. This awakening has been spurred by an escalating 'epidemic' of shootings in elementary and high schools, as well as on college and university campuses.

Although this chapter does not chronicle every instance of such violence nor does it focus specifically on these types of extreme violence, or their weapons of choice, it leverages these tragic events to underscore a critical crossroad, asking the question: *Do we embrace the theories of old, or do we adopt new thinking and emerging theories to transform our paradigms?*

Discarding the old and adopting the new are not mutually exclusive. These tragic experiences illustrate the journey from real-world extreme violence to theoretical constructs, confronting and addressing our most profound fears, and marking the point where academic theories and disciplines are thrust together, fused, creating new realities, new perspectives. More poignantly, now is the time for disciplines to collaborate more closely or play in the same sandbox.

From Theoretical Constructs to Stark Realities: The Impact of Extreme Violence on Academic Communities

As we stood at the threshold of completing this chapter early on, a straightforward task at first, our efforts crumbled when these bastions of learning – these citadels of higher education – were struck in a manner both direct and personal. For one author, this insidious tide of extreme violence surged beyond the confines of academic contemplation, manifesting as a blunt and brutal reality in the streets of Baltimore, Maryland, USA. This shift from theoretical debate to a startling, palpable truth occurred with abrupt intensity on October 3, 2023, at 9:27 p.m. In that moment, the university community of Morgan State University, wrapped in the celebratory air of homecoming and poised to commemorate milestones, instead found itself entangled in an unexpected web of tragedy. This event stood in glaring, somber contrast to the joyous passages it sought to celebrate.

At that moment, the safe abstractions of academic theory collided with the harsh and dangerous concrete reality of the real world: four Morgan State University (MSU) students and a campus visitor were shot by two young adult male suspects, unaffiliated with the university. This heinous act – this extreme violence - shattered the atmosphere, like a lightning strike severing the serenity of the sky, transforming the soaring jubilation of homecoming into a plummeting descent into the abyss of despair and tragedy. For one of our

authors, this was no mere headline; it was a heart-wrenching calamity right at the doorstep of his academic sanctuary, striking a chord too close to ignore. Thankfully, the one small mercy in this tragedy was that there were no fatalities among the casualties.

Analyzing the 'Why': Beyond the Surface of Extreme Violent Behaviors

In the aftermath of the tragedy at MSU, students, families, the community, and the nation grappled with the perennial question: *why did such extreme violence occur?* The '*why?*' question in extreme violence is, quite often, elusive for researchers or investigators, a shadow almost impossible to grasp. However, in other extreme violence situations, the why question is, at times, a bit more straightforward.

For example, the exploration of 'why' necessitates a deeper dive into the '*push and pull*' factors that lead individuals down the path of extreme violence. It's essential to consider both the internal and external pressures that contribute to this trajectory. Internal pressures may include feelings of alienation or disenfranchisement, while external pressures can encompass societal, cultural, or political environments that either tacitly encourage or directly incite violent actions. Yet, apart from the shooting at MSU, the extreme violence virus continued to spread.

Echoes of Violence in Primary and Secondary Education: The Urgent Call for New Theories and Interventions

Case in point, merely two months later, a similar sense of reprieve could not be extended to the University of Nevada, Las Vegas (UNLV). On December 6, 2023, this institution, too, found itself marked by an extreme violent rampage. A lone male gunman, in his mid-60's, who had been denied an academic appointment, with what appeared to be an intent to commit a mass shooting, transformed hallowed grounds from a place of reflection and learning into yet another site of inexplicable sorrow, resulting in three fatalities and one injury.

Unlike Morgan State University, the UNLV assailant brought academic credentials and standing to the tragedy, having held academic posts at other universities while seeking employment at UNLV. Although we can speculate about the UNLV shooter's motives, it still remains somewhat undetermined. This act of extreme violence also differs from the non-academic male gunman at Michigan State University, which occurred on February 13, 2023. The assailant, in his early 40's, was later determined to have mental health and anger issues, along with severe social isolation. In the wake of his extreme violence, three students died, and four others were severely injured.

The narrative persists...Going back more than a decade, universities were not immune to extreme violent behavior. At the University of Alabama (UAB) on February 12, 2010, a case emerged where a lone female professor, in her mid-40's at the time, who had been denied tenure, shot and killed colleagues during a routine meeting. The motive behind her shooting seems to be intertwined with her denial of tenure, compounded by some other possible earlier tragedies she experienced years prior.

These four university incidents, each with shooters of uniquely different backgrounds, experiences, and motives, weave a complex tapestry of academic environments shattered by extreme violence. Each narrative, distinct yet echoing a troubling pattern, casts shadows of extreme violence around higher education environments.

Shifting our lens briefly from the tertiary level of education (colleges and universities) to the foundational stages of learning – primary and secondary education – or more commonly known as elementary, middle, and high school, we encounter a parallel disturbance. The recent tragic event at Perry High School in Dallas

County, Iowa, on January 4, 2024, starkly exemplifies this unsettling trend. A 17-year-old student, armed and intent on destruction, unleashed a devastating attack on what should have been a sanctuary of safety, health, and nurturing. This incident, far from being an anomaly, continues to manifest at the critical intersection of adolescence and education.

These incidents impact us profoundly, resonating deep within and challenging our capacity to remain dispassionate observers. Yet, such extreme violence, especially in recent incidents at primary and secondary schools, including Uvalde, Texas, Covington School in Tennessee, and Oxford High School in Michigan, is not only heartbreaking but also necessitates a reevaluation of our scientific understanding of these “extreme violent behaviors” targeting the most vulnerable.

A critical question arises: *What are the catalysts behind this transformation of behavior in educational settings, shifting from normalcy to extreme, murderous acts?* This transition, from the mundane to the most violent—mass murder, or in the most extreme cases, arguably genocidal—requires a reexamination of the intricate behaviors prevalent in these environments. This examination should be approached not through a single discipline or theory, but rather from an interdisciplinary perspective.

Section 1: Epidemiological Criminology and the Study of Extreme Violent Behavior

Epidemiological Criminology, sometimes referred to as '*EpiCrim*,' (Akers et al., 2012; Potter & Akers, 2013) represents a dialectical synthesis that integrates the concepts, theories, and methodologies of public health and epidemiology with those of criminal justice and criminology, arguably counterparts striving to achieve the same ends. This “pan-disciplinary” approach, while this lexicon is not common in academic literature, in contrast to the term interdisciplinary (Jennings, 2021), can provide a more encompassing and holistic

perspective that draws upon a broad set of skills, knowledge, and methods from relevant disciplines and occupations across the wide spectrum of human knowledge, especially when studying extreme violent behavior (Walker, 2009; Society for Psychotherapy Research, 2022).

From Healthy to Violent Behavior to Extreme Violent Behavior

Figure 1, for example, presents the Epidemiological Criminology framework, which depicts the progression from healthy behavior to violence and eventually to extreme violent behavior, suggesting such behavior exist on a continuum. These dependent factors (e.g., from healthy to extreme violence) illustrate how violence and violent behavior can progress and escalate, reaching a 'tipping point' that triggers extreme violence.

Figure 1 further shows the continuum from healthy behaviors to extreme violence, emphasizing the necessity of understanding the myriad factors that lie between these two extremes. To effectively address violent or extremely violent behaviors, it's crucial to identify who is most affected, whether it be individuals (micro), groups or communities (meso), or society (macro) at large. Understanding which biological, psychological, sociological, and environmental factors most influence risk determinants, and at which level (primary, secondary, or tertiary) protective measures are most effective, is essential for crafting an effective public health response.

PLACE FIGURE 1 ABOUT HERE

Table 1 provides a snapshot how these terms, these interventions, share a common definition and lexicon across both the health and crime literature (Akers et al., 2009; Akers et al., 2012). Bridging this nexus is not an option, but rather, an expectation, a necessity.

The theory of epidemiological criminology, especially with respect to extreme violence, champions the need in designing prevention interventions to target the root causes (primary prevention), at-risk behaviors (secondary prevention), and preemptive actions to avert horrific tragedies (tertiary prevention) that ignites extreme violent behavior. The epidemiological criminology model, as illustrated in **Figure 1**, takes a comprehensive approach to underscore the importance of a nuanced understanding of both *biomedical and behavioral disparities* in devising strategies and stimulating emerging theories to mitigate violence as a public health imperative (Akers et al, 2012; U.S. Department of Health, Education, and Welfare, 1979).

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Violent versus Extreme Violent Behavior

Now that we have articulated that there is a difference between violent behavior and *extreme* violent behavior, let’s turn our attention to how different. Violent behavior can range from minor acts of aggression, like pushing or shoving, to more serious acts like assault, armed robbery or rape (Department of Justice, 2023). It's characterized by the use of physical force and can be motivated by a variety of factors including anger, frustration, bullying, or a desire to assert control. Violent behavior is often contextual and can be seen in various situations, from personal disputes to larger social conflicts on school grounds. This was shown, for

example, in the Stanford Prison Experiment conducted by psychologist Phillip Zimbardo. In this experiment, conducted in 1971, college students were randomly assigned to roles as guards or prisoners in a simulated prison environment. The study aimed to investigate the psychological effects of perceived power and authority within a hierarchical system. However, the experiment had to be terminated prematurely due to the extreme and abusive behavior exhibited by the "guards" towards the "prisoners," highlighting the influence of situational factors on violent behavior. (Zimbardo, 1971)

At the opposite end of the spectrum in epidemiological criminology, *extreme* violent behavior is distinguished by its especially grave, atrocious, and frequently deliberate characteristics. This type of behavior, which appears to be executed with little remorse, is calculated and deliberate, usually leading to severe physical injury or death, often targeting the most defenseless and innocent individuals. Examples of this include, but are not limited to, rape and its brutal nature (which can be categorized as both violent and extreme violent), intentional homicide, terrorism, and mass shootings (Ghiasi, Azhar, & Singh, 2023)

These acts profoundly impact not just the direct victims but also the broader community and society. Characterized by an extreme disregard for human life, they may be driven by deep-seated hatred, a warped sense of revenge, ideological beliefs, or severe mental health issues, among a plethora of other nascent triggers. Extreme violent behavior often shocks and confounds the public due to its brutality and widespread impact. These acts typically occur at "soft targets" such as schools, campuses, religious sites, shopping malls, and other locations where resistance is minimal and vulnerable populations are present (Ghiasi et al., 2023)

Transitioning from the analysis of extreme violent behavior within the realm of epidemiological criminology, it's crucial to explore the underlying biomedical and behavioral disparities, as previously alluded to. These

disparities not only influence the manifestation of such behaviors but also offer insights into preventative strategies and therapeutic interventions.

Biomedical and Behavior Disparities

Public health responses to extreme violent behaviors are often reactive (*posteriori*), addressing incidents only after they have occurred, which is invariably too late. However, proactive (*a priori*) strategies are essential, emphasizing the importance of considering '*what if...*' scenarios rather than retrospectively asking, '*why did this happen?*' This approach is especially critical in the context of extreme violence, such as mass shootings at campuses, schools, religious settings, or other 'soft targets,' as previously mentioned.

Specifically, if public health responses were more *a priori*, *biomedical disparities* might be detected earlier. For example, research has shown that children exposed to adversity early in life may face a higher risk of developing behavioral and emotional problems, including increased aggression, involvement in violence, and difficulties in forming relationships. Moreover, such early adversities can lead to post-traumatic stress disorder (PTSD), depression and neuro-divergent thoughts, conduct problems, substance abuse, self-harm, and suicidal thoughts and attempts. (Nelson et al., 2020; CDC, 2023).

An example from recent history involving a biomedical disparity in a school shooting incident is the case of Nikolas Cruz, the perpetrator of the Marjory Stoneman Douglas High School shooting in Parkland, Florida, on February 14, 2018. Cruz had a history of mental health issues, including depression, ADHD, and autism spectrum disorder. He had reportedly received mental health treatment in the past, but there were documented instances of gaps in his care.

The plethora of known and unknown triggers that ignite extreme violent acts can *push* someone towards extreme violence. Furthermore, inaccessibility to and poor quality of medical care, often limited by socio-economic status and geographic location, can deepen these disparities (Braveman & Gottlieb, 2014; National Academies of Sciences, Engineering, and Medicine, 2018). Members of marginalized communities face increased risks of violent victimization, which can perpetuate a cycle of violence. Additionally, they encounter obstacles in quickly detecting and addressing the resulting physical and psychological issues.

Behavioral disparities, on the other extreme, highlight the impact of lifestyle choices and behaviors on health outcomes, shaped by psychological and sociological factors. Stress, often heightened in areas plagued by extreme violence or the threat thereof, can drive individuals towards harmful behaviors (e.g., substance abuse, alcoholism, etc.) thereby eliminating a basic understanding of coping skills. The sociological context, including education level, cultural norms, and social support networks, play a pivotal role.

An example of a behavioral disparity in a school shooting incident is exemplified by the Columbine High School shooting in 1999 in Littleton, Colorado. The perpetrators, Eric Harris and Dylan Klebold, displayed warning signs of potential violence leading up to the shooting, including expressing violent fantasies, making threats, and exhibiting aggressive or antisocial behavior. However, there were missed opportunities for intervention and support from school officials, law enforcement, and mental health professionals. This failure to recognize and respond to the behavioral warning signs allowed the situation to escalate, culminating in the planning and execution of the deadly attack on their school. It should also be noted that early educational interventions on the effects of violence and the importance of coping strategies can empower individuals, fostering resilience and healthier lifestyle choices even in the face of such adversity (Foell et al., 2021). In conclusion,

understanding the subtle interplay between biomedical and behavioral disparities in the context of extreme violence offers a comprehensive perspective on health inequalities.

Section 2: From Theory to Practice: Epidemiological Criminology Responding to Extreme Violence Dialectics

With respect to extreme violence from a public health point of view, our aim is to paint a picture of extreme violence as a complex phenomenon, not by synthesizing but by accessing and applying all possible disciplinary angles simultaneously or when needed. Showing the interconnectedness between public health and criminal justice, and epidemiology and criminology can do just that.

For instance, from a real world and ground level perspective, the concept of epidemiological criminology emerges in response to the realization that many public health concepts, terms, approaches, theories, and issues, such as drug abuse, mental health disorders, and violence, are also part of the same lexicon in criminology and criminal justice. Violence, conversely, shares many of the same methods and tools of choice (e.g., guns, knives, etc.), and concerns, as does public health and epidemiology. In other words, *violence* is to criminology and criminal justice as *disease* is to epidemiology and public health.

By integrating the complexities of public health with the intricacies of extreme violence, from a criminogenic point of view, we can begin forging a novel synthesis of ideas. This synthesis represents a critical juncture where traditional theories and conventional thinking might prove inadequate. It is a singularity of ideas, a dialectic convergence, that moves beyond outdated and rightly abandoned concepts, such as eugenics or lobotomies, once considered solutions for extreme behavioral disorders. We have, with good reason, moved past these outdated notions, theories, and horrific practices.

Identifying Triggers: A Closer Look at Extreme Violence

For instance, when we examine the triggers of brutality, observing the escalation from ordinary forms of violence (*such as fighting, bullying, road rage, and domestic violence, among many other types*), we are now diving deeper into what we classify as extreme violence, recognizing that our existing theoretical models might need re-evaluated. That is, as we delve deeper into extreme violence in its many forms — *such as mass murder in vulnerable settings like schools, terrorist attacks, gang violence, brutal rapes, executions, and hate crimes leading to tragic and homicidal outcomes* — we are compelled to question, reflect upon, and reexamine the applicability of conventional theories across disciplines.

In our analysis, we broaden our exploration beyond the traditional confines of any one health or crime discipline. Instead, we adapt and adopt an epidemiological criminology mindset that integrates insights from a diverse array of disciplines including the life and physical sciences, environmental sciences, social and behavioral sciences, philosophy, and the arts and humanities. This pan-disciplinary approach enables us to construct a more intentional and deliberate picture of extreme violence and its underlying brutality, particularly through a more focused lens for any one discipline, such as public health, for example. Our ultimate end is to introduce innovative and novel concepts and, ideally, new ways of thinking that spans disciplinary convention. As Socrates once said, *"I cannot teach anybody anything. I can only make them think."*

Unveiling the Dialectic of Extreme Violence: An Epidemiological Criminology Perspective

The intricate dance between environmental influences and personal drives in shaping behavior has long captivated scholars across disciplines. Albert Bandura's Social Learning Theory (1977) and Robert K. Merton's Strain Theory (1938) have shed light on the role of learning, imitation, and the balance between societal goals and legitimate pathways in shaping aggressive tendencies and potentially leading to deviant behaviors.

Subcultural Theories, introduced by Albert K. Cohen (1955) and expanded upon by Gresham M. Sykes and David Matza (1957), further enrich our understanding of the complex nature of violence by exploring norms and values that diverge from societal norms, creating environments where violent actions may be used to gain social standing or reinforce group cohesion.

From a criminological perspective, the understanding of violent acts is multifaceted, integrating theories such as social control (Hirschi, 1969), which posits that strong bonds with society discourage crime; labeling theory (Becker, 1963), suggesting that societal labels can lead to a self-fulfilling prophecy of criminal behavior; strain theory (Merton, 1938), which argues that societal pressures can push individuals towards crime; differential association (Sutherland, 1947), emphasizing the role of social relationships in learning criminal behavior; social disorganization theory (Shaw and McKay, 1942), which links crime rates to neighborhood ecological characteristics; and social learning theory (Akers, 1973), which expands upon differential association by incorporating behavioral reinforcement and punishment as key components of learning criminal conduct. These theories have been foundational in shaping the academic discourse around crime, offering insights into the complex interplay of societal, personal, and environmental factors (Hirschi, 1969; Becker, 1963; Merton, 1938; Sutherland, 1947; Shaw & McKay, 1942; Akers, 1973).

In parallel, epidemiological perspectives on violent behavior incorporate models like the risk factor model, which identifies characteristics that increase the likelihood of becoming violent; the application of the germ theory of disease to the spread of violent behavior (Monahan & Steadman, 1994); social contagion theory, suggesting that violence can spread through populations similarly to infectious diseases (Berkowitz, 1962); and the population health theory, which considers the broad range of social, economic, and environmental factors that influence health outcomes, including violence (Rose, 1992). Further, frameworks such as the theory of

planned behavior (Ajzen, 1991), the ecological model (Bronfenbrenner, 1979), the trans-theoretical model or stages of change (Prochaska & DiClemente, 1983), social cognitive theory (Bandura, 1986), and the health belief model (Rosenstock, 1974) provide comprehensive approaches for understanding and changing health-related behaviors, including violence.

Epidemiological Criminology: Bridging Health and Crime

To better understand extreme violent behavior within a population health context, it is crucial to distinguish between '*health and crime*' and '*public health and crime*'. The former refers to the relationship between individual health outcomes and criminal behavior, while the latter focuses on broader societal and environmental implications that influence both health outcomes and crime rates. An epidemiological framework, such as the *agent-host-environment* model, can be useful to analyze extreme violent behavior, which often targets groups and represents collective tragedies rather than isolated incidents.

Notably, the terminology and concepts prevalent in public health and epidemiology are, oftentimes, paralleled in the discourse of criminology and criminal justice. In the examination of extreme violence, utilizing the epidemiology triad within the specialized scope of epidemiological criminology enables the fusion of our analytical and dialectical reasoning. In summary, **Figure 2** illustrates the agent is the shooter, who may have mental health issues, personal grievances, ideological motives, or other reasons for committing the extreme crime. The host is the group of people who are killed or injured by the shooter, who may be randomly selected or specifically targeted. The environment is the location and situation where the shooting takes place, such as a school or campus, a workplace, a mall, or a concert. The vector can be the firearm or explosives, knives, or other implements used by the agent, the online platforms or networks that radicalize or inspire the agent/shooter, or the security measures or policies that fail to prevent or stop the agent/shooter.

PLACE FIGURE 2 ABOUT HERE

From a public health perspective, the epidemiological triad often uses the example of mosquitos and malaria. The mosquito is the primary vector that spreads the disease malaria. If you control the spread of mosquitoes, you control the spread of malaria. However, it should be noted that there are some examples of how vectors can be used to protect people from diseases, in contrast to causing them. Based on our design and analysis, **Figure 2** provides a graphic representation of the epidemiology triad within the context of violence from an epidemiological criminology perspective.

A Comprehensive Model for Analyzing Extreme Violence: A Dialectical Perspective

In summary, this model allows for a comprehensive analysis of extreme violence, identifying the conditions under which it thrives and the factors that can mitigate its occurrence. By dissecting the interplay between the perpetrator's motivations (agent), the vulnerabilities of individuals or communities (host), and the broader societal conditions (environment), we gain a deeper understanding of how violent behaviors emerge, propagate, and how best to develop a public health response.

From a dialectical perspective, "epidemiological criminology" integrates this triadic model into a broader conversation about crime and public health, synthesizing contradictory elements into a unified theoretical framework and common language. A public health response, for example, and from the perspective of

epidemiological criminology, acknowledges the complexity of extreme violence as both a social disorder and a public health crisis, necessitating a multifaceted approach to prevention and intervention strategies.

Epidemiological criminology creates its own dialectic by enabling a dialogue that embraces diverse perspectives on extreme violence as more than "just crime". This approach involves the process of thought by which apparent contradictions are seen to be part of a higher truth, stimulating a thought exercise, as previously described, to more analytically understand the actions of extreme and brutal perpetrators. By creating an extreme violence dialectic between students, scholars, and practitioners of both health and crime – that merge with an epidemiological criminology dialectic – we can begin to challenge existing paradigms and develop multifaceted strategies for interventions (Potter & Akers, 2013).

Bridging the Singularity of Extreme Violence: How Theories Create New Thinking from An Epidemiological Criminology Perspective

Soft targets—environments where the most vulnerable and least prepared are gathered—serve as a predator's buffet. By employing metaphors such as 'super-spreader events,' 'contagions,' or other analogous pathogenic phenomena, we immediately see the need to incorporate the strengths and complexities from diverse disciplines, including biology, psychology, sociology, and the environmental and physical sciences. From the physical sciences, for example, we might draw on analogies like the 'singularity of violence.'

Building upon the insightful analogy between the *singularity* in physics and the theory of *push-pull* factors in criminology, we can further integrate the concept of epidemiological criminology developed by Akers et al. to offer a comprehensive framework for understanding and addressing the societal singularity of extreme violence. As alluded to previously, the singularity of violence, or, for our purposes – extreme violence, is

analogous to a black hole in physics, represents the intense concentration – the *pulling* - of destructive energy within a single event horizon or individual, absorbing all surrounding influences into a point of no return – ready to explode.

Figure 3 presents a '**singularity of violence**' model, elegantly integrating these elements within the broader epidemiological criminology context that captures the complex interplay between the singularity of extreme violence and the contagion effect, bridging the gap between individual-level push-pull factors and broader societal patterns. The arrows underscore the fluid nature of this spectrum, suggesting that individuals may oscillate between these states under the influence of various risk factors and societal pressures (e.g., trauma, stigma, media, peers, family, isolation, policy, among others).

PLACE FIGURE 3 ABOUT HERE

This dynamic relationship highlights the importance of proactive interventions that target the biomedical and behavioral disparities underlying the progression from violence to extreme violence. By recognizing the interconnectedness of these phenomena within the epidemiological criminology framework, we can develop more comprehensive public health response strategies to mitigate the spread and intensity of extreme violence in our communities. Ultimately, this integrated approach offers a powerful tool for understanding and addressing the multifaceted challenges posed by extreme violent behavior in the modern world. In essence, the amalgamation of these dynamic triggers culminates in a focal point, a singularity, where the

magnitude of violence is so overwhelming that it becomes challenging to distinguish any single causative factor or precipitating incident.

Conclusion: Embracing Interdisciplinary Perspectives for a Comprehensive Public Health Response to Extreme Violence

Epidemiological criminology is a theoretical and practice-based framework that serves to provide diverse perspectives. The complex nature and interplay between and within disciplines is a tapestry of complexity, providing an interplay across various public health responses, most notably extreme violence. By integrating insights from various disciplines, including public health, epidemiology, criminology, criminal justice, and even the physical sciences, among others, we are in a better position to grasp and understand the intricate interplay of factors that contribute to the emergence and spread of extreme violent behavior.

The analogies drawn from diverse fields, such as the contagion effect in epidemiology or the singularity in physics, provide a depth of understanding into a thought exercise that allows the analyst, student, educator, policymaker, or practitioner to enter the dynamic foreplay of extreme violence. These metaphors illuminate the intense and explosive concentration of destructive thoughts and energy within individuals (the singularity) and the rapid proliferation of extreme violent behaviors across society (the contagion effect). Recognizing the *interconnectedness* of these two unique phenomena is crucial for developing effective public health interventions that address both the immediate triggers and the underlying societal conditions that foster extreme violence.

In conclusion, the epidemiological criminology framework serves as an emerging framework to help understand and challenge our current state of knowledge of extreme violent behavior. By embracing

interdisciplinary perspectives, employing innovative metaphors and analogies, and developing comprehensive, multi-level interventions, scholars and practitioners can, in theory, work more closely together towards mitigating the spread and impact of extreme violence in our communities, while, at the same time, considering a priori ideas and approaches to help predict or mitigate extreme violent behaviors before they occur. Ultimately, this integrated approach offers a promising path forward in our collective efforts to build safer, healthier, and more resilient societies.

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