A Bio-Psycho-Social Model of School Shooters

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Abstract
Mass violence is a complex phenomenon that defies simplistic explanations. This article proposes a bio-psycho-social model to account for the many factors that contribute to rampage school shootings. Biological factors include those related to health, appearance, and ability. The psychological domain includes three types of perpetrators: psychopathic, psychotic, and traumatized. The social factors include family patterns, multiple types of failures, and external influences. In addition, there are issues that cut across the bio-psycho-social domains, such as masculine identity. The sense of damaged masculinity is common to many shooters and often involves failures and inadequacies in more than one domain. Implications for threat assessment are noted.
Introduction
There is no one cause of school shootings. Despite efforts to pin the blame on a single cause such as bullying, video games, or conventional ideas about masculinity, what these simplistic explanations fail to account for is that the overwhelming majority of people who are picked on, or play video games, or are faced with developing masculine identities (e.g., the male half of the population) do not commit mass violence. The critical question to answer is: why these particular individuals?

Though previous works (Langman, 2009, 2015a) have touched on a range of factors involved in school shootings, this article seeks to create a more formal model of biological, psychological, and social influences that appear to contribute to mass violence. The information presented here is drawn from profiles of 60 shooters.

Though many of the factors included here are common to many people and by themselves are not correlated with violence, the combination of numerous patterns, traits, and experiences may result in violent behavior. Also, some factors, such as sexual abuse, issues regarding one’s sexual orientation, or issues with one’s racial/ethnic identity, cut across the biological, psychological, and social domains.

Biological Issues
Other researchers have commented on the issue of masculinity as a factor among school shooters. Newman wrote: “in addition to failing at adolescence, they were — at least in their own eyes — failing at manhood” (2004, p. 143). She related this failure to their interest in “cultural scripts” portraying violence as “enhancing the status of men” (p. 153). Similarly, Kellner discussed school shooters as experiencing “crises in masculinities in which young men use guns and violence to create ultramasculine identities” (2013, p. 497).

Thus, the idea that school shooters experience a sense of damaged masculinity and seek to overcome this through violence is not a new idea. What needs to be explored, however, is the question of why the shooters felt themselves to be so inadequate as males. Though masculinity cuts across all the domains of the bio-psycho-social spectrum, insufficient attention has been paid to the biological realm. As noted by Langman (2015a):

For decades, researchers have studied the connection between biological problems and violent behavior. One study found that male murderers had more chronic illnesses and physical defects than their brothers who did not commit murder. Multiple studies have linked birth complications and minor physical anomalies to violent behavior. Researchers in Denmark found a correlation between low birth weight and childhood precursors of psychopathy. A recent report by the American Psychological Association on gun violence noted the relevance of developmental factors such as “low birth weight, birth complications, and injuries.”

School shooters did not feel inadequate simply because they were picked on by male peers or rejected by female peers; there have often been one or more body-related issues.

Biological, or body-related, issues is a broad topic that includes features that the perpetrators were born with, as well as others that occurred along the way. The focus here is on factors that may have affected identity development and self-esteem. In particular, because most school shooters are male, the focus is on body-related issues that impaired the shooters’ sense of masculinity.

Biological issues include medical problems such as birth defects or significant illnesses, appearance-related factors such as shortness, obesity, or severe acne, as well as functional matters such as a lack of athletic ability or poor coordination. In addition, a few shooters either experienced impotence or had a fear that they were sterile. Others had their body-integrity violated by sexual abuse. Though they did not sustain any biological damage, their sense of themselves as males was damaged. (For an extensive list of body-related issues, see Langman, 2017b.)

There is subjectivity involved in this topic. As noted elsewhere, “A bad case of acne may be far more devastating in its impact on self-esteem than a more medically significant birth defect or medical condition” (Langman, 2017b, p. 1). In addition, knowing about a body-related issue is not the same as knowing the impact of that issue on the person in question. Though many shooters have had body-related issues, most have not left a record of how they were affected. Fortunately, several have addressed their body issues in their writings.

For example, many shooters have been unusually short. Elliot Rodger wrote about the emotional impact of his height:

The first frustration of the year, which would remain for the rest of my life, was the fact that I was very short for my age. As Fourth Grade started, it fully dawned on me that I was the shortest kid in my class — even the girls were taller than me .... I became extremely annoyed at how everyone was taller than me, and how the tallest boys were automatically respected more. It instilled the first feelings of inferiority in me, and such feelings would only grow more volatile with time (Langman, 2014).

Rodger believed that playing basketball would make him taller, so he took up the sport. He was so desperate to be tall that he tried to force
himself to grow. He wrote about “lying on the ground in the basketball court trying to stretch my body as much as I could in between bas-
ketball sessions.” In addition to distress about his stature, he was
distressed by his lack of ability:

When I played basketball at school, some boys would join me, and when they did I saw that they were much better at the sport than me. I envied their ability to throw the ball at double the distance than I could. This made me realize that along with being short, I was physically weak compared to other boys my age. Even boys younger than me were stronger. This vexed me to no end (Langman, 2014).

Not only did Rodger feel inadequate because of his short stature and lack of athletic ability, but also because of his racial/ethnic identity. As a child, he had “the feeling that I was different because I am of mixed race. I am half White, half Asian, and this made me different from the normal fully-white kids that I was trying to fit in with” (Langman, 2014).

The connection noted by both Newman and Kellner between dam-
aged masculinity and enhancing status through firearms and violence is evident in Rodger. He wrote, “After I picked up the handgun, I brought it back to my room and felt a new sense of power. I was now armed. Who’s the alpha male now, bitches?” (Rodger, p. 113). The gun gave him the identity he had longed for — the alpha male.

The case of Eric Harris illustrates other body-related issues. Harris was born with two birth defects. One was an unknown leg problem that necessitated numerous visits to physicians as an infant. The other was pectus excavatum — a sunken chest — that resulted in his having two surgeries at ages 12 and 13 — right on the cusp of ad-
olescence. Though Harris did not write specifically about the impact of his sunken chest, his journal reveals his negative feelings about his physique. He wrote, “I have always hated how I looked… That’s where a lot of my hate grows from. The fact that I have practically no self-esteem, especially concerning girls and looks and such” (Harris, p. 8). He also complained that he was picked on because of “how fucking weak I am” (p. 8). The last entry of the journal includes his reference to himself as “the weird looking Eric KID” (p. 11).

Interestingly, Harris was obsessed with the military and with the Nazis. Like Rodger, Harris illustrates the connection between damaged mas-
culinity and enhancing his status through firearms and ultramasculinity: Eric’s flawed physique is interesting in light of his later af-
finity for Hitler and the Nazis. By immersing himself in Nazi ideology, Eric was embracing an ideology of biological su-
periority. This meant that no matter what was wrong with his body, he was still superior to others simply because of his racial identity... The macho, militaristic image of the Nazis was appealing to Eric, who was small, had a sunk-
en chest, and felt weak and inadequate. Identifying with the Nazis was a way of establishing for himself an image of hard, tough masculinity... Eric also had a preoccupation with guns, which was driven by his need to feel a sense of personal power. Without guns, he was a skinny kid with a sunken chest. With guns, he felt invincible. The day that he bought his first guns he wrote: “I feel more confident, stronger, more God-like” (Langman, 2009, p. 28).

A third example, Seung Hui Cho, had medical issues as a child and a frail physique as an adult: “Physically Cho was average to below average. He was frail and sick as an infant toddler. Even the autopsy report remarked about his lack of muscle for the body of a 23-year-
old male” (“Mass Shootings,” 2007, p. N-3). Cho apparently was concerned about his lack of muscle because he was known to work out in the gym.

A fourth case, Eric Houston, “suffered encephalitis, meningitis, and se-
vere pneumonia in infancy; perhaps as a result, his development was delayed.” In addition to his significant medical history, there were envi-
ronmental events that challenged his sense of himself as a male:

During Houston’s trial there was discussion about a pho-

tograph of him at approximately age three. He was wear-
ing a girl’s dress and hat. The back of the photograph said, “To Daddy. Love Christopher.” Christopher was Houston’s middle name. It was also written, “See, daddy, Chris was a good girl. You never believe he’s a boy.” If Houston were only three, who wrote these messages? Did Houston dress himself up as a girl or did somebody do this to him? (Lang-
man, 2015a, 57–58).

Though this was not a body-related issue per se, it presumably creat-
ed confusion about his identity. This early history is interesting in light later developments. For example, “When Houston was 12 to 13 years old, he became fascinated with the military, weapons, and S.W.A.T. teams. In light of the photograph of him dressed as a girl, his fasci-
nation with ultra-masculine activities beginning around the onset of puberty is interesting” (p. 58). During adolescence, he was molest-
ed by a male teacher. Following this, “Houston was traumatized and questioned his sexual orientation. He became ‘obsessed with what this meant, what did it mean about him’” (p. 58).

As with the other shooters, struggles with masculinity were relat-
ed to a fascination with ultramasculine role models. Houston, be-
sides his fascination with the military, was also obsessed with the movie, The Terminator, watching it 23 times, including the night before his attack.
A final example is that of Adam Lanza. He was uncoordinated and walked with an odd gait. He was also so thin as to be emaciated; at six feet tall, he only weighed 112 pounds. The connection between physical inadequacy and aspirations toward ultramasculinity is seen in Lanza’s desire to be a marine:

Lanza was a physically weak, socially stunted, and emotionally vulnerable young man. His desire to become a marine may have reflected his aspiration to become everything that he wasn’t — strong, confident, and powerful. When Lanza created an online persona, “The skinny and frail teenager chose to create an imposing, bulky, muscle-bound soldier dressed in desert camouflage” (Langman, 2015b).

What these examples demonstrate is the presence of body-related issues and/or experiences that threaten the perpetrators’ sense of themselves as males. This apparently drives them to seek out firearms and violence as a method of enhancing their masculinity.

Beyond these more obvious examples, it is interesting that body-related issues and damaged masculinity can also be an issue in apparently healthy and good-looking killers. Charles Whitman was a strapping, handsome, former marine who was married to an attractive young woman. During high school, however, he had surgery on a testicle and as an adult had fears of sterility. Though outwardly he may have epitomized masculinity, there were challenges to his manhood.

Similarly, Mitchell Johnson played on three sports teams in middle school and was considered cute by multiple girls whom he dated. Despite his good appearance and athletic ability, however, he had been raped by an older male for several years, which caused him devastating distress and damaged his sense of himself as a male. Thus, even when perpetrators have outwardly appeared to be good physical specimens, there have often been events or biological issues that threatened their masculinity.

Psychological Issues

This section is based on the psychological typology established in other works (Langman, 2009, 2015a), consisting of three categories: psychopathic, psychotic, and traumatized shooters. As noted previously (Langman, 2015a), some shooters exhibit traits of two of these three types. Because the shooters’ psychological dynamics are thoroughly discussed in other works (Langman, 2009; 2015a), only brief case summaries will be provided here.

Psychopathic

Psychopathic shooters display such traits as narcissism, a lack of conscience and empathy, a disregard for the impact of their behavior on others, and deception. Though some psychopathic shooters have been charming and charismatic, others have been openly belligerent and abrasive.

For example, Eric Harris demonstrated multiple psychopathic traits, including extreme narcissism, a rejection of morality, a lack of empathy, and sadism. He wrote about himself as a god-like being who was superior to everyone. He also wrote repeatedly about his rejection of morality and values. He fantasized about raping girls he knew, and also fantasized about torturing people, ripping their bodies apart with a knife, and killing them. On the day of his attack, he laughed with glee as he gunned down his victims. He felt entitled and superior, and as a result resented anyone else with status. He held onto grudges, accumulating a sense of having been the victim of injustices, and sought vengeance against those he believed he had wronged him.

Psychotic

Psychotic shooters most commonly are schizophrenic, though others have had schizotypal personality disorder. In general, they are not fully in touch with reality, most commonly experiencing psychotic symptoms such as auditory hallucinations, paranoid delusions, and delusions of grandeur. They also typically have severely impaired social functioning, resulting in profound envy for their peers who are perceived to be more happy and successful.

For example, Seung Hui Cho’s attack appears to have been driven primarily by his psychotic symptoms. He had delusions of grandeur, and compared himself to Moses and Jesus in his manifesto. He also had devastating paranoid delusions and believed that people were trying to kill him. Thus, he believed he had to lash out against the world before the world killed him. In addition to his psychotic symptoms, Cho exhibited other common features of psychotic shooters, such as flattened affect, profoundly impaired social function, and severe envy for his peers, whom he perceived to be living normal, happy lives.

Traumatized

Traumatized shooters come from chronically and severely dysfunctional families. Common aspects of their families include parental substance abuse, parental criminal behavior, domestic violence, child abuse, frequent relocations, and changing caregivers. In some cases, there is sexual abuse, either in the home or elsewhere.

For example, Eric Houston’s family history included incest, alcoholism, physical abuse, and numerous relocations. Houston also moved back and forth between his mother and his father. In addition, his uncle murdered three people and one of his grandmothers died by suicide. The father was a violent alcoholic who abandoned the family.
Comments
Psychological factors result in perpetrators being at risk for violence for different reasons. The psychopathic shooters were often so entitled and so lacking in empathy, that when they were frustrated, they felt justified in seeking revenge and had no barrier of empathy to prevent them from killing people. Psychotic shooters often felt profound envy for those who were more successful, and this envy turned to rage and hatred. In addition, they sometimes heard voices telling them to kill or were so paranoid that they attacked others in what they perceived as their own self-defense. Traumatized shooters experienced life-long victimizations that tended to make them depressed and desperate, but also full of rage. Because they were already at the “boiling point,” a series of even minor stresses was enough to push them across the threshold of violence.

It is important to recognize that simply being psychopathic, psychotic, or traumatized does not explain mass violence, because most people in these categories do not go on rampages. The perpetrators’ psychological dynamics, however, shed light on why biological issues and social stresses resulted in mass attacks.

Social Issues
The domain of social issues includes a variety of factors. There are patterns within the family in terms of parental occupations, firearm use, and sibling relationships. There are also a range of stresses such as failures, rejections, losses, and setbacks. Finally, there are external influences that may stem from role models, ideologies, media violence, or peer encouragement.

Family Patterns
Many shooters came from families where one or more relatives served in the military and/or law enforcement. Perhaps as a result of this, many shooters themselves aspired to join the military or law enforcement. Unfortunately, these efforts typically resulted in failing to be allowed to enlist or joining the military only to quickly be discharged. It seems likely that these failures had a significant impact on the shooters’ sense of themselves as males, as well as perhaps resulting in their feeling like failures in their families for not upholding the family traditions.

The significance of military aspirations is evident in the case of Adam Lanza. As noted earlier, he wanted to be a marine. In doing so, he hoped to follow in the footsteps of his uncle, who served in the marines and subsequently in law enforcement. This uncle apparently was Lanza’s role model for masculinity.

As a young child, [Lanza] dressed up for Halloween in a military costume. As a young adult, he told his mother that he wanted to enlist, but she talked him out of doing so, telling him he would “never be a marine.” Lanza “took the news harder than even his mother expected.” This apparently was a significant blow, though it did not end his interest in the military. In fact, “in the months leading up to the massacre, Lanza would dress himself up head to toe in a camouflage military uniform and target shoot with a pellet gun in his basement.” On the day of his attack, he was dressed in military clothes (Langman, 2015b).

It appears that, similar to Elliot Rodger solving his identity crisis by buying a gun and becoming (in his mind) an alpha male, Adam Lanza sought to solve his identity crisis by becoming a soldier. (For a comprehensive list of school shooters with military aspirations, see Langman, 2017b.)

Another common pattern is that many shooters had family members who were involved in education as teachers, professors, or administrators. It is hypothesized that for these shooters, academic failures and disciplinary issues may have affected their identities more than they might have for other students. In addition, educational issues were known to have resulted in conflict within these families.

For example, Jillian Robbins was a high school dropout whose mother and stepfather worked in higher education. Her mother wanted her to continue with her education, creating a conflict between mother and daughter. Robbins chose to commit her attack at the campus of Penn State University — an institution with which she had no direct connection. It was the university, however, that her mother had attended, and where both her mother and stepfather were employed. Thus, the choice of target may have been Robbins’ way of lashing out against her family and against what she may have perceived as a symbol of her failure.

Similarly, Kimveer Gill attended two institutions of higher education, dropping out of both. His father was a college professor who wanted Gill to continue his education, creating tension in the family. Gill considered attacking other venues, but ended up deciding to commit his rampage at a college to which he had no connection. Like Robbins, he may have been lashing out the parental expectations that he could not meet and/or venting his rage against students who were succeeding where he was failing. (For more examples, see Langman, 2017a.)

Other patterns involve the place of firearms in the family. For example, many of the psychopathic shooters were raised in families with a history of legal firearm use, whether because parents or other relatives served in the military or law enforcement, or because the family was involved in hunting or target shooting. Perhaps growing up
around firearms gave the shooters familiarity and training in shooting, but because they were psychopathic, they rejected their families’ morality and law-abiding behavior.

Among traumatized shooters, however, the families often had a history of illegal firearm use. Several traumatized shooters had relatives who served time in prison on firearms charges, and others had family members who engaged in illegal firearm use but were not arrested for it (Langman, 2017d).

A final dynamic that is common among psychotic shooters is that of sibling rivalry. Psychotic shooters typically are the youngest and the least functional children in their families, and often grow up in the shadow of their older, more successful siblings (see Langman, 2015a, for a comprehensive list).

Recent Stresses
The category of recent stresses includes academic failures, disciplinary issues at school, military rejections, arrests or other legal issues, romantic rejections, occupational failures, and losses due to death, divorce, or distance (e.g., parents moving away without their children).

Charles Whitman experienced many stresses in the years leading up to his attack. These included military failure, arrests in the military as well as in civilian life, academic failures, the loss of his scholarship due to poor grades, giving up on multiple majors at college, having a series of career aspirations and jobs that never came to fruition, the separation of his parents, and his own failure as a husband. He was financially dependent on his wife and ended up beating her; they had discussed divorce. His father had beaten his mother, and he despised his father; all his life he wanted to out-do his father, and he not only failed to do so financially, but ended up being a wife-beater just like the man he despised. Whitman’s repeated failures in multiple domains, and the resulting sense of hopelessness, appear to have been the motivations for his attack.

Among post-graduate and adult shooters in higher education, the most significant stressor appears to be current or impending financial distress. In fact, financial stress appears to have been the primary trigger for several older shooters who committed attacks at colleges. This includes Gang Lu (age 28), Valery Fabrikant (52), Robert Flores (41), Peter Odighizuwa (43), Biswanath Halder (62), Amy Bishop (44), and One Goh (43). All of these shooters targeted people they blamed for being in financial straits.

External Influences
External influences take several forms. At the level of peer influence, there is sometimes passive peer acceptance, meaning that the shooter reveals his intentions to his friends and they do not try to talk him out of the attack, nor do they report his plans to any adults. To the shooter, this may be perceived as an indication that they support his intentions.

In other cases, the shooter’s peers may offer active encouragement or even join the peer in the attack, as seen with the attacks committed by Andrew Golden and Mitchell Johnson, and Eric Harris and Dylan Klebold. In the case of Luke Woodham, an older peer actively directed Woodham to kill his mother and his ex-girlfriend, and Woodham did what he was told to do.

Beyond peer influence, many shooters find role models or ideologies that support their violent intentions. These may be historical figures (most commonly Hitler), or more recent killers (most commonly Eric Harris). The figures may also be fictional, such as the characters in the movie *Natural Born Killers*, or from books or video games. (For a comprehensive list of role models, see Langman, 2017c.)

Discussion
As noted above, multiple researchers have focused on issues of masculinity as a factor in school shootings. What they have not done, however, is identify biological factors that caused or contributed to the sense of being inadequate males. Though body-related issues have not been identified for every school shooter, they are common enough to suggest that they are frequently involved in the dynamics of school shooters.

It is tempting to want to create a model that works for all school shooters by bringing together the various bio-psycho-social factors.

Table 1: The Bio-Psycho-Social Spectrum

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<td>Ability</td>
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<td>Appearance</td>
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<td>Medical</td>
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For example, for some shooters, it may be the case that their body-related issues and psychological dynamics make them vulnerable, the life set-backs are the triggers for violent fantasies, and the external influences support them in moving through the continuum toward violence. Unfortunately, this does not apply to all shooters. For example, the use of role models and ideologies appears limited to shooters in their 20s or younger. External influences do not seem to be relevant factors for shooters in middle age.

Also, it is not clear that biological issues play as significant a role among older shooters as they do among those who are younger. This may be because information about medical issues in childhood is less accessible for older shooters (particularly those born outside the United States), or it may be that for older shooters, other factors are more important.

In fact, the distinction between younger and older shooters may be critical for understanding the forces driving them toward violence. Speaking broadly, it appears that younger shooters have more severe biological and psychological issues than older shooters, but less significant social setbacks.

In fact, in some cases, the motivation for mass murder appears to have been trivial, especially for some of the psychopathic shooters. Andrew Golden apparently rebelled against his teachers’ expectations that he behave in class, and was angry that a girl rejected him. These are ordinary life experiences, but for an entitled psychopath who could not tolerate not getting his way in everything, these were intolerable injustices. Similarly, Eric Harris had been teased and had romantic rejections, but his life was not falling apart. In comparison, Charles Whitman (who also had a psychopathic personality), endured far more in the way of life setbacks or stresses before committing a rampage attack.

As with Whitman, there are often multiple stresses occurring in the months leading up to the attack. Eric Houston, for example, lost his job and had dim occupational prospects due to his lack of a high school diploma. He wanted to enlist in the military, but could not do so without his diploma. He was experiencing confusion about his sexual orientation as a result of having been molested by a teacher. He eventually found a girlfriend, but she left him shortly before his attack. His mother was pressuring him to move out and become self-supporting, which seemed impossible without his diploma. He became depressed and began drinking and using marijuana and perhaps harder drugs. All of these factors combined to make Houston sufficiently depressed and angry that violence seemed like a good idea.

For Elliot Rodger, however, his motivation for violence seemed to be that he was what he called “a kissless virgin.” If he had succeeded in having sex with a woman, perhaps mass murder would have been averted. Rodger was an unusually disturbed young man with both psychopathic and psychotic features (Langman, 2014). Though he had other setbacks, such as not succeeding in college, there is no indication that this was distressing. All that mattered seemed to be his desire for sex, and the rage at his failure.

Thus, though the bio-psycho-social domains may be relevant across shooters, the balance among the factors may vary depending on age and perhaps other issues. It appears that the more severe the psychological disturbance, the less significant other issues need to be to result in violence.

Alternately, it may be the case that the more severe the social stresses, the less psychologically disturbed someone needs to be to commit violence. For example, middle-aged shooters who committed targeted attacks in higher education appear to have been more functional that those in similar psychological categories who committed their attacks at younger ages. Robert Flores, despite displaying psychopathic traits, served 11 years in the military prior to killing three professors in his nursing program at the age of 41. He was able to function in a highly demanding setting, but became violent in the wake of his divorce, his wife and children moving out of state, academic failures, and significant financial distress.

Speaking generally, in the college setting, younger shooters (in their teens and 20s) typically have committed random attacks and older perpetrators have carried out targeted attacks. The intersection of multiple factors such as age, attack type, social stresses, psychological traits, as well as possible biological factors, need further analysis to disentangle.

**Prevention**

Knowing the range of variables that contribute to mass shootings can help identify potential perpetrators. Something as simple as being short or being a virgin, for example, can be driving forces in someone’s rage and violent intentions. Threat assessments should include a consideration not only of medical history, appearance, and other body-related issues, but explore their impact on the person in question as well.

Similarly, threat assessments should explore the range of psychological features commonly seen among school shooters, as well as the frequent family patterns, life setbacks, and external influences. Because college students typically are in their teens and 20s, the issue of role models and ideologies is particularly important, as it is younger shooters who most commonly had role models for their violence.

**Conclusion**

Mass shootings at schools are a rare phenomenon that cannot be
accounted for by simplistic explanations. This article has sought to illustrate the wide range of factors across the spectrum of biological, psychological, and social influences that contribute to rampage attacks. The varying weights that bio-psycho-social factors play in different types of perpetrators and different types of attacks are an area for further research.

References


