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In 1985, Jack Levin, Ph.D., a Professor of Sociology at Northwestern University, and James Alan Fox, Ph.D., a Professor of Criminal Justice at Northwestern University, wrote a book describing some of the psychological and sociological factors that were relevant to the chilling profiles of compulsive murderers such as Ted Bundy, Charles Manson, and the Hillside Strangler. At that time, mass killings were described by the media as a new phenomenon, notwithstanding decades of genocidal killing sprees throughout modern history.

According to the U.S. Federal Bureau of Investigation (FBI), mass murder is generally defined as “a number of murders (four or more) occurring during the same incident, with no distinctive time period between the murders” (Morton, 2005, p. 8). In contrast, serial killing is defined as “a series of two or more murders, committed as separate events, usually, but not always, by one offender acting alone” (Chmelir, 2003, p. 2). With respect to risk factors that have been associated with violence, two major factors that emerge include (1) Individual Psychological Factors and (2) Cultural, Sociological, and Technological Influences.

Individual Psychological Factors

Attachment failures, lack of belonging, social isolation, and a sense of alienation.

Thomas Joiner, Ph.D., Professor of Psychology at Florida State University, found that “thwarted belongingness” is associated with increased suicidal risk (Joiner, 2005, 2010). Some of these same factors—particularly social isolation—also carry a risk associated with violence. A review of previous attacks also showed that there is both perceived and documented social isolation in mass shooters (Fox & Delateur, 2013; Meloy et al., 2004; O'Toole, 2000; Wike & Fraser, 2009). Social isolation is particularly noticeable where school shooters are concerned. For example, Wike and Fraser (2009) found that a high degree of social stratification, with a clear hierarchy among students, existed in schools that were ultimately victimized by one of their own.

Sense of a foreshortened future, hopelessness, and despair.

In her threat assessment report to the FBI on school shooters, FBI Supervisory Special Agent Mary Ellen O’Toole (2000) lists depression as a major predisposing factor in mass shootings. In an analysis of school and adult mass shooters, Meloy et al. (2004) found that one in every four adolescents had had earlier psychiatric treatment and 50% of the adult mass shooters had a history of psychiatric treatment, with one of the three primary diagnoses being depression. Wike and Fraser’s (2009) review of school shooters revealed that most adolescent shooters had thoughts of or attempts at suicide at some point before the attack. Similarly, in Lankford’s (2016) analysis of 185 mass shooters, 48% were found to have committed suicide after the crime or engaged in “suicide-by-cop,” which he linked to direct evidence of the shooters’ underlying or prior depressive behaviors, statements, or writing.

Behavioral factors, emotional disturbance, and personality traits.

This cluster includes risk factors that are sometimes associated with aggression. Underlying emotional factors include emotional dysregulation and low tolerance for frustration. Behavioral factors include anger management problems, poor impulse control, and desensitization to violence. Personality traits include narcissism, lack of empathy, exaggerated sense of entitlement, externalization of blame, and a pathological need for attention.

Alcohol abuse.

Although not usually cited as a determinant in mass shootings, alcohol has traditionally been associated with antisocial and aggressive behavior. For example, as a source of antisocial behavior, alcohol is traditionally implicated in nearly 70% of fatal car accidents, 65% of murders, 65% of spouse battering, 55% of violent child abuse, and at least 30% of suicides (Steele & Josephs, 1990).
Weapons effect or trigger effect.
Professor Leonard Berkowitz, Ph.D., Professor of Psychology at the University of Wisconsin-Madison, is often attributed to have coined the term “weapons effect” to refer to the phenomenon, observed in several experimental studies conducted in the laboratory and in the field, in which the presence of a weapon may instigate the expression of aggression even if the weapon is not actually used to express aggression. In the words of Berkowitz, quoted from an article in *Psychology Today* magazine, “Guns not only permit violence, they can stimulate it as well. The finger pulls the trigger, but the trigger may also be pulling the finger” (1968, p. 22). The weapons effect may occur because weapons are closely linked to aggression in our brains. The theoretical explanation for this effect is that weapons activate or “prime” aggressive thoughts in memory (Benjamin & Bushman, 2016).

In what has become known as one of the classic experiments in social psychology, Leonard Berkowitz and Anthony LePage conducted an experiment designed to investigate whether external stimuli could affect aggression. The study consisted of 100 Midwestern male undergraduates who participated in a task in which they were given the opportunity to aggress against a confederate by administering an electric shock. Half of the participants were angered beforehand (shocked repeatedly by the confederate) and half were not. In the experimental group, angry participants were seated at a table that had a shotgun and a revolver on it. In the control group, participants were seated at a table that had badminton racquets and shuttlecocks. In both conditions, the items on the table were described as part of another experiment that the researchers had supposedly forgotten to put away. The research participants were to decide what level of electric shock to deliver to a confederate, and the electric shocks were used to measure aggression. The participants were told to ignore the items on the table, but the results suggested that they did not. Instead, the participants who saw the guns were more aggressive than were the participants who saw the sports items. Berkowitz and LePage concluded that “many hostile acts which supposedly stem from unconscious motivation really arise because of the operation of aggressive cues” (p. 206). The weapons effect has been replicated many times—both inside and outside the lab (Benjamin, Kepes, & Bushman, 2017). The weapons effect has been replicated in many other studies. In a review of 56 published studies, Carlson, Marcus-Newhall, and Miller (1990) confirmed that the mere sight of weapons increases aggression in both angry and nonangry individuals. In England and Wales, a large (N = 678) field study found that the presence of a TASER significantly increased physical assaults against police officers (Ariel et al., 2019).

Aggressive cues, such as merely seeing a gun, can increase aggression. This effect has also been studied in one of the most dangerous activities people engage in; that is, driving a vehicle. Survey studies indicate that motorists drive more aggressively when there is a gun in the vehicle. Brad Bushman, Ph.D. and colleagues conducted an experiment in which participants (N = 60) were randomly assigned to drive a frustrating driving scenario with a gun or a tennis racket in the vehicle’s passenger seat. Participants drove more aggressively when there was a gun in the vehicle than when there was a tennis racket in the vehicle. The findings suggest that the mere presence of a gun can make drivers more aggressive (Bushman et al., 2017).

Given that the leading cause of traffic crashes and injuries is aggressive driving, accounting for more than half of all traffic fatalities (American Automobile Association, n.d.), it is tempting to speculate that the automobile itself might serve as an aggressive cue for some people. According to the American Automobile Association (2016, p. 1), more than 78% of U.S. drivers reported having engaged in at least one aggressive driving behavior in the past year, with 3.7% of drivers reporting that they had exited their vehicle to confront another driver, and 2.8% reporting that they had bumped or rammed another vehicle on purpose.

David Hemenway, Ph.D., Professor of Health Policy and Director of the Harvard Injury Control Research Center at the Harvard School of Public Health, has conducted surveys on road rage. Hemenway et al. (2006) analyzed data from a 2004 nationally representative sample random-digit dialing survey of over 2,400 licensed drivers. Respondents were asked whether, in the past year, they (1) made obscene or rude gestures at another motorist, (2) aggressively followed another vehicle too closely, and (3) were victims of such hostile behaviors. Seventeen percent of the respondents admitted making obscene or rude gestures, and 9% had aggressively followed too closely. Forty-six percent reported victimization by each of these behaviors in the past year. Survey participants who were more likely to engage in forms of road rage include males, young adults, binge drinkers, those who do not believe most people can be trusted, those ever arrested for a non-traffic violation, and motorists who had been in a vehicle in which there was a gun (Hemenway et al., 2006). In a random-digit dialing study of 790 Arizona drivers, Miller, Azrael, Hemenway, and Solop (2002) found similar results. Notwithstanding that causal inferences cannot be made from surveys, Miller and colleagues concluded that at least among Arizona motorists, having a gun in the car is a strong marker for aggressive and illegal behavior behind the wheel.
In a nationally representative sample of over 2,770 U.S. drivers, Hemenway et al. (2006) found that drivers with guns in their vehicles are more aggressive drivers than drivers without guns in their vehicles. Those who had a gun in the car were significantly more likely to make obscene gestures at other motorists (23% vs. 16%), tailgate or aggressively follow another vehicle too closely (14% vs. 8%), or both (6.3% vs. 2.8%), even after controlling for many other factors related to aggressive driving (e.g., age, gender, urbanization, census region, driving frequency).

Cultural, Sociological, and Technological Influences

Societal normalization of deviance and pathology.
Columbia University Professor of Sociology, Diane Vaughn, Ph.D., coined the term “normalization of deviance” (Vaughn, 2016, p. 62) to refer to a process in which a clearly unsafe practice comes to be considered normal if it does not immediately cause a catastrophe. She used this concept to explain the sociological causes of the Challenger and Columbia shuttle disasters. According to Schneier (2016, p. 1), “normalization of deviance is a gradual process that leads to a situation where unacceptable practices or standards become acceptable, and flagrant violations of procedure become normal—despite that fact that everyone involved knows better.” To some extent, the American desensitization to violence may be following a similar course that includes a long incubation period (before a final disaster) filled with early warning signs that were either ignored, misinterpreted, or missed completely.

In their discussion of possible reasons why U.S. gun homicide rates are 25.2 times higher than other high-income countries, Erin Grinshteyn, Ph.D. (School of Community Health Sciences, University of Nevada-Reno, Reno) and David Hemenway, Ph.D. (Harvard School of Public Health, Boston) make the following conclusions:

These data cannot tell us why the US homicide rate is so exceptional compared with these other high-income countries. Maybe the United States is a more violent country. The United States does have the highest incarceration rates in the world, and the nonfirearm homicide rates are higher than all these other countries with the exception of the Czech Republic. Conversely, the nonlethal crime rates are similar to those in these other countries (ICVS International Working Group). The United States has more firearms and weaker gun laws than these countries, and it is the firearm homicide rate that is so much higher than in any of these high-income nations. (Grinshteyn & Hemenway, 2016, p. 171).

Cultural glorification of violence and the media contagion effect.
Professor David P. Phillips, Ph.D. (Department of Sociology at the University of California in San Diego, California) coined the term “media contagion” (Phillips, 1980, 1986), which was an extension of cultural contagion and behavioral contagion theories. Phillips’ (1974) groundbreaking research revealed how highly publicized stories of deviant and dangerous behavior influences so-called copycat incidents. Phillips, as well as dozens of researchers who followed him, showed how suicide rates spike in the week following an extensively publicized celebrity suicide, in contrast to the trend of no increase in suicides in the week following a media strike that unintentionally suppresses such coverage.

In applying the media contagion concept to homicides, journalist Joseph Grenny observes, “the media is an accomplice in public shootings” (Grenny, 2012, p. 1). In response to one particularly horrific mass shooting, Grenny observed that the media did “exactly what they needed to do to influence the next perpetrator to lock and load” (p. 1). Grenny goes on to describe the usual and customary evidence of the media as accomplice by naming the shooter, describing his characteristics, detailing the crime, numbering the victims, and ranking the shooter against “successful” attackers.

Although the media are often blamed for sensationalizing violence, the reality is that the mass media are merely marketing mass murders to their viewers whose ratings support this practice. In other words, we have met the enemy and it is us. The media consist of two main sources: (1) news reporting and (2) entertainment and movies (including the internet and mobile devices). Of particular concern for children and adolescents, the internet and mobile devices provide an endless source of violent films that are easily accessible to youth whose brains have not undergone complete myelination of the prefrontal cortex.

News reporting. Fifty percent of U.S. news coverage focuses on crime alone, and mostly violent crime, despite other types of crime being much more common (Schildkraut & Elsas, 2016, p. 8). With respect to news reporting, Jennifer B. Johnson, Ph.D. and Andrew Joy, B.S., both from Western New Mexico University, discuss (1) how the prevalence of violent crimes has increased in relation to the mass media coverage of them and (2) the proliferation of social media sites that tend to glorify the shooters and downplay the victims. According to Dr.
Johnson’s statement at the American Psychological Association [APA] 2016 Annual Convention, “We suggest that the media cry to cling to ‘the public’s right to know’ covers up a greedier agenda to keep eyeballs glued to screens, since they know that frightening homicides are their No. 1 ratings and advertising boosters” (APA, 2016). According to Johnson and Joy (2016), the demographic profile of mass shooters is fairly consistent. Most are white, ostensibly heterosexual males, largely between the ages of 20 and 50. They tend to see themselves as “victims of injustice,” and share a belief that they have been cheated out of their rightful dominant place as white, middle class males.

**Entertainment and movies.** Brad Bushman, Ph.D. and colleagues used trained coders to identify the presence of violence in each 5-minute film segment for one-half of the top 30 films since 1950 and the presence of guns in violent segments since 1985, the first full year the PG-13 rating (age 13+) was used (Bushman, Jamieson, Weitz, & Romer, 2013). Bushman et al. found that violence in films has more than doubled since 1950, and gun violence in PG-13-rated films has more than tripled since 1985. When the PG-13 rating was introduced, these films contained about as much gun violence as G (general audiences) and PG (parental guidance suggested for young children) films. Since 2009, PG-13-rated films have contained as much or more violence as R-rated films (age 17+) films. The authors conclude that, even if youth do not use guns, they may be exposed to increasing gun violence in top-selling films. The authors speculate that, by including guns in violent scenes, film producers may be strengthening the weapons effect and providing youth with scripts for using guns. These findings are concerning because many scientific studies have shown that viewing violent films can increase aggression. The authors point out that violent films are easily accessible to youth (e.g., on the internet and cable).

**Availability of lethal means and the proliferation of weapons.** Although easy access to weapons in the U.S. has been a polarizing political topic for many years, probably few would argue that there is a shortage of weapons in the U.S. The Second Amendment of the U.S. Constitution reads: “A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed” (U.S. Const. amend. II). Some argue that the Amendment’s phrase “the right of the people to keep and bear Arms” creates an individual constitutional right for U.S. citizens (i.e., the right to bear arms theory), whereas others point to the prefatory language “a well regulated Militia” to argue that the framers of the Constitution intended only to restrict Congress from legislating away a state’s right to self-defense (i.e., the collective rights theory). In either case, few would argue that on March 30, 1981, President Ronald Reagan would have been any safer if John Hinckley, Jr. had been in possession of automatic weapons rather than a single handgun.

Handguns continue to be the primary method of homicide in the U.S. In 2014, for example, Federal Bureau of Investigation data indicate that there were 8,124 total firearm-related homicides in the U.S., with the majority (5,562) of those attributed to handguns (U.S. Department of Justice, 2015). For a global perspective, data from the United Nations Office on Drugs and Crime (UNODC; 2014) indicates that between 2005 and 2012, the average homicide rate in the U.S. was 4.9 per 100,000 inhabitants, compared to the average rate globally of 6.2. However, the U.S. had much higher homicide rates compared to other countries identified in the report as “developed,” which all had average homicide rates of 0.8 per 100,000 (UNODC, 2014). For example, in 2004, there were 5.5 homicides in the U.S. for every 100,000 persons, compared to 1.6 in Canada (Statistics Canada, 2018, 2019) and 0.9 in Germany and Italy (Federal Republic of Germany, 2004).

For global comparisons with the U.S., a useful benchmark is the Organization for Economic Cooperation and Development (OECD), which is a unique forum where the governments of 34 democracies with market economies work with each other, as well as with more than 70 non-member economies, to promote economic growth, prosperity, and sustainable development. Based on their analysis of 2010 mortality data obtained from the World Health Organization for populous, high-income countries (N=23), Grinshteyn and Hemenway (2016) found that U.S. homicide rates were 7.0 times higher than in other high-income countries, driven by a gun homicide rate that was 25.2 times higher. The U.S. firearm homicide rate of 3.6 was higher than the rate in any of the other 21 OECD countries (Grinshteyn & Hemenway, 2016, p. 271), including Australia (0.2), Canada (0.5), Ireland (0.4), Germany (0.1), Japan (0.0), Norway (0.0), Republic of Korea (0.0), and the United Kingdom (0.0). For the 15-24 year old age group, the gun homicide rate in the U.S. was 49.0 times higher. Firearm-related suicide rates were 8.0 times higher in the U.S., whereas the overall suicide rates were average. Unintentional firearm deaths were 6.2 times higher in the U.S., whereas the overall firearm death rate in the U.S. from all causes was 10.0 times higher. Ninety percent of women, 91% of children aged 0 to 14 years, 92% of youth aged 15 to 24 years, and 82% of all people killed by firearms were from the United States. As Grinshteyn and Hemenway conclude, “The United States has an enormous firearm problem compared with other high-income countries, with higher rates of homicide and firearm-related suicide” (2016, p. 270).
Conclusion

A simple solution to a complex and longstanding problem is beyond the scope of this article. If direction determines destination, then one step toward a positive direction could involve increasing awareness of individual psychological risk factors that can percolate within the context of broader cultural, sociological, and technical influences. Positive protective factors could focus on broad cultural determinants, including societal promotion of basic tolerance toward others, recognition of the important of mental and emotional health and well-being, and the sanctification of life from conception to natural death. Protective technological factors could include reducing the overly broad access to automatic weapons while decreasing the sensational obsession of the media and its advertising-driven public with violence. Responsible news reporting and social media could adopt the Don’t Name Them campaign, a coordinated effort by the Advanced Law Enforcement Rapid Response Training (ALERRT) Center at Texas State University, the I Love U Guys Foundation (founded by John-Michael and Ellen Keyes), and the FBI. According to information on the campaign’s website (https://www.dontnamethem.org/), “The focus of the campaign is to shift the media focus from the suspects who commit these acts to the victims, survivors, and heroes who stop them.” The campaign emphasizes three basic recommendations:

- Encourage the media and others not to name the suspects or focus on their lives.
- Shooters/attackers should be as unrecognized in their deaths as they were in their lives.
- Media coverage should focus on the victims and the heroes.

As Johnson and Joy conclude in their paper presented at the 2016 Annual Convention of the APA, “media can easily inform the public of mass shooting related news without focusing any content on the name, face, history, manifestos or stated motivations of the shooter, denying them the infamous legacy they desire, and thereby slowly drain away the remaining lifeblood that is sustaining future mass shooters” (2016, pp. 5-6).
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