

MASS SHOOTINGS IN THE UNITED STATES:
COMMON CHARACTERISTICS AND
PREDICTIVE BEHAVIORS

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by

JOHN W. JANSHESKI, MAJOR, U.S. AIR FORCE
B.A., Ohio State University, Columbus, Ohio, 1999

AD BELLUM PACE PARATI

Fort Leavenworth, Kansas
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Name of Candidate: Major John W. Jansheski

Thesis Title: Mass Shootings in the United States: Common Characteristics and
Predictive Behaviors

Approved by:

_____, Thesis Committee Chair
Marc A. Wagner, M.A.

_____, Member
O. Shawn Cupp, Ph.D.

_____, Member
Lieutenant Colonel Scott A. Spradlin, B.S.

Accepted this 14th day of June 2013 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, Ph.D.

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ABSTRACT

MASS SHOOTINGS IN THE UNITED STATES: COMMON CHARACTERISTICS AND PREDICTIVE BEHAVIORS, by Major John W. Jansheski, 78 pages.

Seemingly random armed attacks against groups of unarmed individuals occur at a higher rate in the United States than other countries. In response, during the preceding decade institutions increased security, law enforcement agencies changed response procedures, and communities acted to mitigate threats. Despite these efforts, the incidents continue to occur at a steady rate each year. This thesis studies mass shooting incidents based on available information to determine common characteristics. The purpose is to compare the individual characteristics across multiple cases to facilitate a better understanding of commonalities and predictive behaviors.

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ACRONYMS

CRC	Columbine Review Commission
CRS	Congressional Research Service
DHS	United States Department of Homeland Security
ED	United States Department of Education
NYPD	New York Police Department
U.S.	United States of America
USCB	United States Census Bureau
USPS	United States Postal Service

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CHAPTER 1

INTRODUCTION

CRS estimates that since the terrible events of September 11, 2001 (9/11), Al-Qaeda-inspired homegrown terrorists have killed 14 people in two incidents in the United States. Since 9/11, according to CRS estimates, 281 people have died in 38 public mass shootings.

– Jerome P. Bjelopera et al.
Public Mass Shootings in the United States

In July 2012, a shooter, identified by police as a 24-year-old male, killed 12 and wounded 58 people at a midnight movie premiere in Aurora, Colorado. Just five months later, a 20-year-old male shot and killed 26 people at a Newtown, Connecticut elementary school. Reports indicate that both shooters used multiple firearms and dressed in tactical apparel. As the Aurora shooter walked the aisles of the movie theater, witnesses reported the he appeared “as calm as can be” (Brown 2012). Neither shooter appeared to share a close link with the majority of their victims. The Newtown shooter, who shot his mother and stole the firearms from her shortly before the attack, killed 20 children, six to seven years in age, prior to his self-inflicted suicide (Bratu 2013). In total, at least 16 mass shootings occurred within the United States during 2012, resulting in 88 dead and 109 wounded (Zornick 2012).

The U.S. has a long history of indiscriminate mass shootings. It is likely a problem reaching back further than the supporting record, which indicates the earliest mass shooting occurred in a New Jersey neighborhood in 1949 (Fessenden 2000). Throughout the year, the media reports new cases, each with a similar pattern of circumstances. Each shooting leaves devastated communities and families with the injured, the dead, and the unanswered question, “why?” (Porter 2012).

Proposed Research Question

In an effort to provide increased clarity to law enforcement and communities, this study sought to answer the question: What are the common characteristics in U.S. mass shooting incidents? In addition, this study's secondary research questions are: Do the shooters have shared predictive behaviors, either threatening or non-threatening? Are there common community characteristics correlated with the locations where incidents occur?

This thesis used a collective case study to compare common characteristics across multiple cases (Creswell 2007). Research included separate mass shooting incidents to identify characteristics of incidents, shooters, and communities to establish common trends. First, incident characteristics include the attack location(s), the shooter's relationship with the location, and victim targeting (Newman et al. 2004). Incident characteristics compare different incidents on the same set of criteria to establish common trends.

Next, characteristics amongst shooters in this study included the history of mental illness (Fessenden 2000), prior threats or interest in violence, and social marginalization (Vossekuil et al. 2004). Research compared behaviors in the weeks prior to the incident and included threatening communications and other changes in behavior. Finally, the comparison of communities assesses correlations between cities to determine if socioeconomic characteristics reveal trends amongst incidents (Li and Rainwater 2000). Overall, this thesis derives trends from the comparison of characteristics amongst similar incidents.

Background

Documenting the frequency of mass shooting incidents depends upon the source. Generally, studies agree the number of mass shootings has increased. Specifically, one study noted an increase in the number of incidents and lethality since 2000 (NYPD 2012, 9). Researching mostly open source cases from 1966 to 2012, the New York Police Department identified over two hundred active shooter incidents at various locations within the U.S. (NYPD 2012, 11). Shooting incidents also take place overseas, but most cases on record occurred in the U.S. (NYPD 2012, 11).

Mass shootings differ from other homicides in several key ways. First, mass shooting accounted for only a fraction of the over 14,000 reported U.S. homicides in 2011 (O’Leary 2012). Altogether, they account for less than 1 percent of the violent crimes committed in the U.S. (Fessenden 2000). In addition, when compared to other homicides shootings do not appear to vary at the same rate. One study identified that school shootings increased as other types of homicide decreased (Newman et al. 2004, 51).

Importance

Despite the statistical rarity of shooting incidents comparative to murder rates, indiscriminate shootings have a striking impact. Studies indicate many Americans feel more threatened following an incident (Greene and Vedantam 2012). Unlike other threats, these incidents drive spending, education, law enforcement tactics, security controls, and a wide variety of other complex variables. In 2009, CNN reported that a U.S. Justice Department program placed approximately 6,300 police officers in public schools from 1999 onward (Sutter 2009). Throughout the U.S., mass shootings led law

enforcement to embrace new active shooter response tactics over the old hostage scenario (Goldstein 2012). The Department of Homeland Security prescribes and communities embrace procedures for individual and victim response measures including locking the doors and overpowering the shooter if necessary (DHS 2012).

Assumptions

This study made two major assumptions. First, active shootings comprise a distinct type of violence worthy of investigation. The relative rarity of active shooter incidents and the incredible public and government reactions reinforce this assumption.

In addition, this study assumed similarity amongst active shootings regardless of affected location. While the number of school shooting studies largely exceeds the amount of overall mass shooting research, evidence supports the theory that workplace and school shootings share common characteristics. First, in neither location does the shooter appear to discriminate between targets once the shooting begins. Instead, shooter characteristics often include indiscriminate rage against multiple individuals at the location (Bjelopera et al. 2013). In addition, studies found the shooter maintained an awkward relationship with their peers. At both work and school, reports indicate some sort of shooter “marginalization” prior to the attack (Newman et al. 2004, 58).

Operational Definition of Key Terms

Active Shooter Defined

The terms and definitions to describe mass shooting incidents vary based on source, but essentially divide into three focus areas. Research terminology varies based on whether the study includes a law enforcement, government, or sociological

perspective. Generally, studies using the law enforcement or government perspective include all incidents whereas studies with a sociological perspective include a smaller sample, such as school-related shootings.

Law enforcement predominantly uses the term “active shooting” to describe incidents where “an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms(s) and there is no pattern or method to their selection of victims” (DHS 2008). Proposing an alternate government definition, a 2013 report from the Congressional Research Service defined “public mass shootings” as incidents “occurring in relatively public places, involving four or more deaths-not including the shooter(s)-and gunmen who select victims somewhat indiscriminately” (Bjelopera et al. 2013, 4). Further, public mass shootings do not include acts involving terrorism or robbery (Bjelopera et al. 2013). Finally, with few exceptions, sociological studies use the term “rampage shootings” to describe the incidents. Researchers in a school study defined rampage shootings “by the fact that they involve attacks on multiple parties selected almost at random” (Newman et al. 2004, 15).

Arguably, a study could interchangeably use active shooting, public mass shooting, or rampage shooting to describe the problem. In analysis, all three share overlapping characteristics including the assertion that shooters appear to choose victims at random and shoot multiple people (Bjelopera et al. 2013). The active shooting definition focuses largely on first responder challenges including “populated areas” and an “actively engaged” assailant (DHS 2008). Both require immediate law enforcement action and response. The public mass shooting definition narrows the field considerably by only focusing on incidents with four or more deaths; conversely, the NYPD study of

active shooters found the average number of deaths was 3.1 and the median was 2 (2012, 6). The definition for rampage shooting stresses the shooter's need for recognition and former or current relationship to the targeted location. Because active shooting more commonly includes the problem as whole, this study largely used that term to describe the mass shooting phenomenon.

Characteristics Defined

This study included additional terms to analyze characteristics. First, an "institutional attack," as defined by a study on school shooters, "takes place on a public stage before an audience, is committed by a member or a former member of the institution, and involves multiple victims, some chosen for their symbolic significance or at random" (Newman et al. 2004, 50). Next, a history of mental health evaluation or intervention includes instances when the shooter had "serious mental problems – either a hospitalization, a prescription for psychiatric drugs, a suicide attempt or evidence of psychosis" prior to the incident (Fessenden 2000). The Oxford English Dictionary defines psychosis as "a severe mental disorder in which thought and emotions are so impaired that contact is lost with reality" (Oxford Dictionaries 2013).

In addition, this study defined each shooter's violent behavior prior to the attack. Threatening behavior is defined as instances where "at least one person knew" the shooter's intentions "before it took place" (Vossekuil et al. 2004, 25). A shooter's interest in violence includes "some interest in violence, through movies video games, books, and other media" (Vossekuil et al. 2004, 22). Further, social marginalization is defined as a combination of bullying and loner status (Newman et al. 2004). Bullying included instances when the shooter "felt bullied, persecuted, or injured by others prior to the

attack” (Vossekuil et al. 2004, 35). Loners included shooters who were “socially isolated” from others (Vossekuil et al. 2004, 20). Finally, socioeconomic factors, as defined in this study, include education, unemployment, and income level, comparable to the community (Li and Rainwater 2000).

Scope

This thesis relied upon available information through the media, institutional reports, and books to build a comparative study. In order to assess the scope of the problem and identify key characteristics, this study conducted a literature review of available research. This study used a comparative model and qualitative analysis to determine trends amongst U.S. active shooter cases within the last 15 years.

Limitations

The research encountered a number of characteristics beyond the scope of available data due to variances in incidents and communities. The scope and resources on incidents limited this study. These limits could potentially constrain the applicability to future scenarios. In order to mitigate this limitation, this study attempted, as much as possible, to choose cases that widen the breadth of comparative analysis (Creswell 2007).

More importantly, this comparative study relied heavily on interviews conducted and information gathered by other parties. Incomplete data, by unavailability, oversight, or omission, could influence analysis. Mitigating factual oversight and omission requires using several resources to cross check facts for each incident (Creswell 2007).

Delimitations

Though active shooter incidents occur outside the U.S., this study focused solely on American cases to avoid complications with translated texts. Based on information availability, the boundaries of this study limited it to active shooting cases that occurred in the last 15 years. To avoid biased or inaccurate reporting, this study accessed multiple sources for a “holistic” approach (Creswell 2007, 71).

Significance of Study

Active shooter incident response has changed the way law enforcement approaches scenes where violence is actively in progress. While law enforcement continues to do its part to prepare for and ensure effective reactions to active shooter incidents, prevention remains elusive. During the 2012 Colorado movie theater shooting incident, the Denver Post reported police arrived on scene within 90 seconds. However, in less than two minutes the shooter completed his attack, killed 12, and wounded 58 people (Brown 2012).

Studying active shooter incidents is important because of the devastation the problem creates amongst individuals and communities. When an incident occurs, the trickle-down effect on communities across America has a clear impact on community behavior and invites suspicion of the unknown. Incidents persistently drain communities’ tangible and intangible resources. In addition to crippling morale, communities spend unknown amounts on response education, revised law enforcement training, and security increases (Bjelopera et al. 2013).

Summary of Introduction

By studying active shooters rather than rampage or public mass shooters, this study broadened the pool of potential cases. This thesis assumed similarity between shootings regardless of where the incident occurred. Ultimately, it included a sample from the largest group of active shooter cases available. Cases compared included genders, multiple shooters, various ages, and differing shooter agendas. Qualitative analysis narrowed the larger picture in an attempt to provide a more in-depth look at each case (Flyvbjerg 2006).

Collective understanding of shooting incidents is a worthy goal. Bringing even a limited degree of clarity to the incidents in the aftermath could have a considerable impact as communities continue to build defensive barriers, particularly in schools. The best-case scenario of any analysis is it could ultimately save lives of future victims by giving the community the tools it needs for early intervention or prevention.

CHAPTER 2

LITERATURE REVIEW

Employees typically do not just “snap,” but display indicators of potentially violent behavior over time.

– Department of Homeland Security,
Active Shooter: How to Respond

This chapter focuses on the available literature on active shooters. Specifically, it addresses the incidents, the shooters, the communities, and theories on contributing factors. While attempting an exhaustive review, it remains limited in scope based on availability and reliability of information on the subject.

The available information on active shooters varies in concentration and reliability. Law enforcement agencies provide the majority of initial case information aided by available media accounts. The media, local police, and institutions provide a basic to detailed level of information designed to provide the reader with the available facts of one or more cases (Cullen 2009). Research limitations include a broad definition of active shooter and varied concentrations that led to varying mass trends on the phenomenon. This study found multiple differences in statistics, which occasionally conflicted on general characteristics. Available research studies conduct analysis on one or more cases to determine response protocols for victims or police, security protocols for institutions, or prevention guidelines for administrators.

In addition to the limitations mentioned above, the reliability of incident information differs and information sometimes changes as the subsequent investigation progresses. The NYPD noted in its open source study “occasionally, multiple sources related to a single attack presented conflicting information” (2012, 10). For example,

initial media reports on the Columbine High School shootings described the shooters as members of the ‘Trench Coat Mafia’ (TCM) who targeted specific victims. Further investigation found the shooters were not members of the group and most of the targeted victims graduated a year before the attack (Toppo 2009).

The most exhaustive compilation this study found on overall active shooter cases is the NYPD’s “Active Shooter: Recommendations and Analysis for Risk Mitigation.” The study includes analysis on 230 active shooter incidents that took place in the U.S. between 1966 and 2012. However, the available information limited research due to low sample rate and Internet sources, leading the authors to argue against using the source information to conduct further analysis (NYPD 2012, 11). One additional study conducted by the *New York Times* sought to analyze the phenomenon on a mass scale, but suffers similar limitations (Fessenden 2000). Other studies included herein focused on individual incidents, school shootings, violence, psychology, and preventative measures.

Characteristics

Incidents

Some data is available on the mass characteristics of active shooter incidents. Available research on incident characteristics includes victim targeting, the significance of the attack location, an increase or decrease in the frequency of attacks, incident duration, the time of day, and the time of year. This study found limited or conflicting information on incident duration, time of year, and time of day.

Studies identified several general targeting characteristics amongst incidents. The largest majority of shooters, 38 percent, targeted victims with a professional relationship while the second largest group, 22 percent, targeted fellow students (NYPD 2012, 6). The

NYPD also noted that 26 percent of shooters have no known relationship with victims (NYPD 2012, 6). Similarly, a study by the US Secret Service and the US Department of Education of 37 school shootings found 73 percent of shooters “had a grievance against at least one of their targets prior to the attack” (Vossekuil et al. 2004, 16).

Arguably, researching the relationships between victims and shooters requires more data in each case. The Secret Service found revenge accounted for 61 percent of school shootings (Vossekuil et al. 2004). However, the book *Rampage: The Social Roots of School Shootings* argued school shooters start with a target in mind, but often shoot indeterminately (Newman et al. 2004, 14). Rather, the book proposed that shootings “constituted deadly assaults on an institution” versus a particular victim (Newman et al. 2004, 234). The argument surmises it is “the organization, not the individuals” the shooters target (Newman et al. 2004, 234).

The location of the incidents largely aligns with the victim data set targeting students or coworkers. Though prevention plans include additional site security, a comprehensive study on security at the previously targeted locations is unavailable. The NYPD data set established categories for each incident location and found that “open commercial facilities,” such as “retail stores or restaurants” occurred at almost the same rate as those at “restricted commercial facilities” (2012, 7). The data shows 24 percent of incidents take place at schools and 23 percent of incidents occur in office buildings or factory and warehouses (NYPD 2012, 8). The NYPD also found 29 percent of incidents take place at “other,” undefined locations.

The shooter’s familiarity with the attack location requires further investigation. For instance, of the locations the NYPD identified as other, one case included the

November 2009 Fort Hood shooting (2012, 181). While the location did not fit the NYPD categories, from the shooter's perspective the location represented a workplace and therefore did not significantly differ from a controlled office building.

An unspecified increase in active shooter incident frequency comprises the consensus amongst most sources. In its study of 100 rampage attacks, the *New York Times* found the rate of incidents "appears to have increased" from 1949 to 1999 (Fessenden 2000). Another source asserted school shootings increased in the last decade of the twentieth century (Newman et al. 2004, 49). However, a third school study proved inconclusive with available data. That study found, from 1988 to 2008, the number of incidents increased, but also noted that the student population increased at a similar rate (Drysdale, Modzeleski, and Simons 2010, 11). The rate of overall incident frequency requires further clarification beyond the scope of this study.

The available data on incident duration does not identify a consistent average timeline for active shooter incidents. The U.S. Department of Education argued incidents vary in duration from "a few minutes" to "several hours" (ED 2007, 1). A private company, MSA Worldview, stated "more than half of active shooter incidents are terminated in 12 minutes" (MSA 2012, 1). As a tertiary source, a local level police department in 2010 claimed "over the last fifteen years, the average duration of an active shooter incident has been two and a half minutes" (Prattville.gov 2010). This characteristic lacks definition and, beyond the scope of this study, research on this subject could provide a better average or median duration.

A joint FBI, U.S. Department of Education, and U.S. Secret Service study included some information on the time of year attacks most commonly occurred. The

2010 study included directed assaults that occurred on or off campus attacks within the U.S. between 1900 and 2008 (Drysdale, Modzeleski, and Simons, 8). The study did not find evidence to support active shootings occur during any particular month. Rather, the findings indicate attacks “occurred throughout the calendar year” (Drysdale, Modzeleski, and Simons 2010, 12).

The *New York Times* noted active shooters, in contrast to typical murderers, consistently strike during normal working hours. In fact, 81 percent of active shooting incidents take place before 6:00 p.m., while the majority of typical murders, 57 percent, occur in the evening. Arguably, targeting and access to incident locations contributed to earlier active shootings (Fessenden 2000). Therefore, if a shooter plans to target personnel at a place of employment or a school, they strike within normal operating hours.

Shooters

Based on the information available, shooter characteristics include gender, age, the number of shooters, weapons, race, history of mental illness, and attack resolution. According to the NYPD’s active shooter analysis, several common characteristics overwhelmingly define the basic description of an active shooter: gender, age, number of attackers, number of weapons, and attack resolution (2012). The *New York Times* included race and history of mental illness in its 2000 review of 102 active shooters (Fessenden). Finally, most studies agreed active shooters plan the incident prior to execution.

The first common characteristic is the gender of attacker. Of 230 cases, only 3 percent included a female shooter (NYPD 2012, 4). The NYPD reasoned that the number

of female attackers might actually be a lower percentage; however, the rarity of female active shooters, eight cases of 202, increased the likelihood that the media reported the incidents (2012, 4). The *New York Times* data agreed with the NYPD findings. Its study found six females in the 102 rampage killers and noted, compared to the statistical likelihood of female killers in regular murders, women appear more likely to commit regular murders than rampage killings (Fessenden 2000).

Next, the NYPD found the median age of the attacker is 35 years old (2012, 4). However, the study argued the information peaks in two age ranges. The first peak is shootings at schools between the ages of 15 to 19 years old and the second peak is a range from 35 to 44-year-old shooters (NYPD 2012, 4). The second highest range comes between 20 and 29 years of age (NYPD 2012, 4).

The NYPD also found shooters tend to carry out attacks alone. In fact, 98 percent of shooters in the NYPD's data set did not include a second shooter (2012, 5). This data statistically confirms that most active shootings are not the result of a conspiracy. Although the 1999 shooting at Columbine High School included two shooters, extensive police investigation following the incident failed to uncover a wider conspiracy. Instead, the police identified several members who had helped the shooters find weapons and explosive material with no apparent knowledge of the shooting plot (Cullen 2009).

In addition, the NYPD found the majority of active shooters used only one weapon. Only 36 percent of active shooter attacks used more than one weapon with additional weapons ranging from a knife to multiple firearms of varying types (NYPD 2012, 8). The NYPD notes the available information limits the ability to determine the capabilities of weapons involved because of the media's vague description and the

availability of aftermarket kits (2012, 8). The report did not include detailed information describing how the shooter obtained the firearms, but notes in several school related shootings that the “attackers stole weapons from parents” (NYPD 2012, 8).

Further, the *New York Times* study addressed the subject of shooter race. The findings showed that, in general, a shooter’s race did not conform to other homicides. While typical homicides include black assailants in 50 percent of cases, the races amongst active shooters are closer “to that of the entire population.” Of those cases studied, 71 percent of active shooter cases included white assailants (Fessenden 2000). Based on this data, the perpetrator’s race more closely reflects the racial makeup of the U.S. population and potentially leaves races as a non-factor.

Separate studies included different levels of correlation between shooters and evidence of mental illness. Studying school shootings, one researcher noted, “depression is endemic” amongst shooters (Newman 2007). The *New York Times* noted, “at least half” of the rampage killers “showed signs of serious mental health problems” (Fessenden 2000). Among those with identified mental health problems, 48 received a formal diagnosis, but only 25 of those 48 received the diagnosis before their crimes (Fessenden 2000). Though 24 took medication for their illness, 14 of 24 stopped taking the medicine before their crimes (Fessenden 2000). The Secret Service analysis found less incidence of mental illness amongst school shooters. Only 17 percent of shooters had a diagnosed mental health condition and only 34 percent underwent a mental health evaluation prior to the incident (Vossekuil et al. 2004, 21).

The statistics demonstrate that most active shooter incidents end through the application of force and shooters rarely escape. The largest portion, 43 percent of the

incidents, ended when “law enforcement, private security, or bystanders” intervened (NYPD 2012, 8). Shooter suicides or attempted suicides accounted for 40 percent of incident resolutions (NYPD 2012, 9). By far the smallest portion of shooters, 16 percent, surrendered with no force applied (NYPD 2012, 9). More remarkable, however, is rampage killers do not escape punishment. As the *New York Times* noted, unlike other murderers, not one of the 102 killers studied “got away” and “eighty-nine never even left the crime scene” (Fessenden 2000).

Studies included overwhelmingly agreed active shooters preplanned their attacks (Newman et al. 2004, 20). One study of school shooters found at least one individual, usually a peer, knew the shooter “was thinking about or planning the school attack” in 81 percent of cases (Vossekuil et al. 2004, 25). In addition, they sometimes publicize their intentions through the Internet or written works. The Secret Service found that 59 percent showed an interest in violence and 37 percent “exhibited an interest in violence in their own writings, such as poems, essays, or journal entries” (Vossekuil et al. 2004, 22). No available studies provided specific information on characteristic precursors of non-school shootings.

Communities

Available research on active shooter incidents and community characteristics is negligible. Generally, the trends defy the typical population characteristics of other communities with high levels of violence, particularly urban areas (Fessenden 2000). Taking place in “rural and suburban settings,” the socioeconomic status of active shooters and communities challenge these norms (Newman et al. 2004, 14).

Based on the book *Columbine*, the population near Columbine High School grew in the 20 years prior to the 1999 attack. The author describes in chapter 5 how the surrounding community grew from the late 1970s and the culture changed (Cullen 2009). A separate account of two active shooter incidents found communities included a “dense, all-encompassing, interconnected networks of friends and family” and reasoned the environment made “the lives of misfits unbearable” (Newman et al. 2004, 66).

A review of sociological studies regarding communities and relative violence in the U.S. found limited information. Regarding the relationship between community violence and population density, one study found a link. A quantitative study of population density and violent crime rate noted an inverse relationship between violence and population density. As population density lowered, violent crime increased. The researchers concluded, “isolation, rather than overcrowding may be the more serious problem for modern society” (McCarthy, Galle, and Zimmern 1975, 788).

Another sociological study found a link between “high crime rates” and “high poverty rate and unemployment rate, low education attainment, and large household size” (Li and Rainwater 2000). Few active shooter studies addressed socioeconomic status or educational attainment amongst active shooters. However, one study noted active shooters do not suffer from low socioeconomic status at the standard criminal rate. Finding no “urban bias,” the study concluded active shooters do not display the “patterns of poverty” found amongst typical criminals (Fessenden 2000). This characteristic requires further research.

Theories on Contributing Factors

One study conservatively set the number of theories on active shooters at “more than a dozen” (Newman et al. 2004, 229). The following synopsis does not represent an attempt to include all theories. Rather, this section attempts to include theories most applicable to this thesis and, in particular, those open to further research. Theories include the impact of life events, social marginalization, the relationship between violent media and behavior, psychopathy, copycat crimes, and the availability of firearms.

One common theory is the shooter suddenly snapped and carried out the attack in a rage. Media accounts of active shootings typically search for, and at times mistakenly identify, triggers for active shooting incidents (Cullen 2009). While the premeditated nature of most active shooter attacks negates the theory that shooters acted on an emotional whim, some life events more commonly coincide with the incidents (Vossekuil et al. 2004). The *New York Times* identified “precipitators” to shootings, which include loss of a job followed by a divorce or breakup (Fessenden 2000). In addition, one study argued prior events such as stressors and external influences did not comprise an explanation as to “why” an incident occurred; instead, each provided some indication as to “when” the shooter elected to carry out a long contemplated attack (Newman et al. 2004, 60).

Another theory proposed a shooter’s social marginalization leads to their crimes. In two separate studies, law enforcement and school officials regarded a shooter as a “loner” in only 10 percent of cases (Newman et al. 2004, 374). In addition, over half the shooters suffered bullying including threats, assaults, name-calling, or theft of “personal property” (Newman et al. 2004, 241). Researching bullying, one report found support in

71 percent of school-related cases (Vossekuil et al. 2004, 21). However, the theory on bullied shooters requires further research. The same study that argued in favor of the bullying theory also noted that one shooter who claimed “he was tired of being picked on” actually bullied other classmates (Newman et al. 2004, 63).

The influence of family life on active shooters is another common theory amongst school-related shooting studies, but the conclusions vary. Explanations for different conclusions cite varying characteristics to identify the problem. While a U.S. Secret Service study found 63 percent came from two parent homes (Vossekuil et al. 2004, 19), a separate study by the Center for Disease Control of 19 school shooters found roughly 20 percent had family dysfunction (Newman et al. 2004). A more comprehensive study identified family dysfunction as a characteristic in 48 percent of cases, but argued that dysfunction at home is interchangeable with mental illness or depression (Newman et al. 2004). Therefore, family dysfunction, while not an overall theory, could potentially contribute to some school shootings.

Another theory on shootings cites exposure to violent media as a contributing factor to shooter violence (CSM 1999). Of note, in his book *On Combat*, Lieutenant Colonel Dave Grossman proposed that violent media desensitizes young people and allows them to commit violent acts at an increasing rate. The author regards violent media as “conditioning” similar to what military members undergo to kill on the battlefield (Grossman and Christen 2008, 229).

Several studies examined the shooter’s exposure or preference for violent media with varying results. The *New York Times* found, out of 102 shooters, only six shooters displayed an interest in violent video games and an additional seven shooters showed

interest in violent movies (Fessenden 2000). By contrast, the Secret Service found higher rates of interest in violent media amongst school shooters, but noted a variety of interests. Over one-quarter of school shooters demonstrated an interest in violent movies, 24 percent in violent books, and 12 percent in violent video games (Vossekuil et al. 2004, 22). However, based on the incidence of school shooter violence prior to the incident, 31 percent, the Secret Service data does not point to a general increase in violence (Vossekuil et al. 2004, 22). Rather, if violent media results in shooting incidents, it appears most common that only through the extreme act of massacre that violent media manifests itself in shooter behavior.

The theory of psychopathology amongst active shooters bears mention as a potential contributing factor. The Special Agent with the Federal Bureau of Investigations identified Eric Harris, one the two Columbine shooters, as a psychopath following the shootings. Harris, described as alternately popular and controlling, masked his intentions through manipulation (Cullen 2009). In his book *Without Conscience*, Dr. Robert Hare notes that “psychopaths are rational and aware of what they are doing and why” (1999, 22). Hare further notes that even if someone identifies a psychopath “the current prognosis for significant improvement in his or her attitudes and behavior is poor” (Hare 1999, 205). Short of a psychological profile of each shooter, this aspect is beyond the scope of this study to advance.

The theory that active shooters copycat previous shootings has some support in the literature studied. The NYPD noted that some shooters altered or planned incidents as if they had learned from their predecessors (2012, 5). An analysis of school shooters concluded “anecdotal evidence strongly indicates that threats increase in schools

nationwide after a shooting has occurred” (O’Toole 1999 24). Another study focused on school shootings found “convincing evidence” of copycat crimes in four cases of school shootings, but limited insight into a shooter’s thought processes left the authors inconclusive (Newman et al. 2004, 379, 252). The influence of previous shootings on preceding incidents requires a historical analysis beyond the intent of this study.

Another theorized contributing factor is that the availability of firearms leads to the crimes. Following the 2012 movie theater shooting, the *Denver Post* quoted a former Colorado governor’s argument, “that the proliferation of guns will lead to their use. It’s just common sense” (Porter 2012). The premeditated nature of rampage killings makes the argument more difficult to apply to these incidents (Newman 2007). Regarding the nature of violent crimes in general, Franklin E. Zimring argued that firearms act as a “contributing cause” to lethality, but do not increase violent crime rates (2004, 36). Due to the increased lethality of firearms, assaults that otherwise might result in injury instead resulted in deaths (Zimring 2004).

Zimring also argued the scope of most laws work to prohibit youth and “certain diagnosed and previously institutionalized persons with emotional illnesses from being eligible to obtain weapons” (2004, 37). Despite the youth prohibition, underage shooters in each case discovered a way to obtain the desired weapons. Studies found most school shooters get their guns from home. In its study of school shootings, the U.S. Secret Service determined that 68 percent of shooters “acquired the gun (or guns) used in their attacks from their own home or that of a relative” (Vossekuil et al. 2004, 27). Another study reasoned that rural communities, where the majority of school shootings occurred, “have higher gun ownership rates than urban or suburban communities” increasing

firearm availability (Newman et al. 2004, 259). The process shooters use to obtain weapons requires further research.

Summary of Literature Review

Review of active shooter literature demonstrated that, though there is no overall authority on the subject, studies found some consistent trends amongst incidents, shooters, and communities. Research suggests active shooters are predominantly lone males, target institutions not people, likely preannounce the crime to peers prior to the incident, and largely surrender based on applied force. In addition, research reports that victimized communities do not generally share the socioeconomic characteristics of high crime areas. Finally, while no lone theory on active shooter motivation explained every case, researchers found, when combined, a small number of contributing factors developed a stronger correlation (Newman et al. 2004).

CHAPTER 3

RESEARCH METHODOLOGY

One of the most infuriating things as a scientist and as a person is this attempt to try and find some diagnostic label, some neat diagnostic box to put this person into and – and thus explain why they did this terrible, terrible thing.

– Josh Buckholtz, Harvard University,
NOVA, The Mind of a Rampage Killer

Introduction

The research design used in this thesis is a collective case study. The collective case study allowed this thesis to provide an in-depth level of analysis across multiple active shooter incidents. Studying multiple cases addressed research gaps left by focusing on only one part of the problem. Most analysis available limited research to school shootings, which only comprise 22 percent of the problem (NYPD 2012, 6). Including data for non-school shootings broadened the research base (Creswell 2007, 102).

The collective case study methodology has weaknesses stemming from the categorizations and source material. This study used multiple sources and “cross-case synthesis,” described as tables for comparative analysis, to mitigate weaknesses in the source material and analysis (Creswell 2007, 163). First, characteristics in each case included multiple resources to verify facts. Each case uses three or more sources and draws from the best-researched documentation available. In addition, to conduct cross-case synthesis, this study used the rubrics defined in this chapter to build tables for data analysis (Creswell 2007). Further, this study included detailed evidence from each case rather than building a list of general categories for analysis. For each characteristic and

sub-element, the case either does or does not generally correlate with the characteristic (Flyvbjerg 2006).

The primary research question of this thesis is: What are the common characteristics in U.S. active shooter incidents? Chapter 1 described the incidents and the rate of occurrence. Based on available research, this thesis assumed that active shooter incidents in schools share common characteristics with incidents that occur in other locations (Newman et al. 2004). Chapter 2 detailed available research on the problem, which mostly focused on school shootings (Creswell 2007).

In order to explore this thesis, analysis included the secondary questions (Creswell 2007, 109). Secondary questions are as follows: Do the shooters have shared predictive behaviors? Specifically, this study researched common shooter behaviors that correlated between incidents prior to occurrence. In addition, are there common community characteristics correlated with the location where the incidents occurred? Specifically, it investigated the socioeconomic status of the shooters and the cities where attacks occurred for comparison.

Inclusion Criteria

This study established criteria to select cases that vary from one another as described in table 1. Criteria included identifying U.S. active shooter cases and that each case had sufficient available data to analyze. The final criteria included choosing cases that varied from established norms (Creswell 2007, 120).

First, case inclusion required the active shooting incident occurred in the U.S. and fit the DHS definition. Adherence to the definition required the shooter used a firearm, killed or attempted to kill “in a confined and populated area,” and demonstrated no

discernible pattern of victim selection in most incidents (DHS 2008). Using the NYPD's compilation of active shooter incidents to identify killers and cases, the criteria of firearm use and a lack of a discernible pattern leaves most cases open for study.

The second criteria ensured the availability of data necessary for comparative research. In order to provide maximum insight, this study eliminated cases older than 15 years due to a lack of available information on older cases. Preliminary research found less documentation on older cases, decreasing the likelihood of collecting the necessary information (Creswell 2007, 121).

The final selection criteria identified known trends amongst active shooter incidents and purposely sampled diverse cases to explore more case variations (Creswell 2007, 129). First, the literature review identified that 97 percent of active shooters were male, so this study included a case with a female shooter (NYPD 2012, 4). Next, 98 percent of shooters conduct attacks alone, so this study included a case with more than one shooter (NYPD 2012, 5). In addition, peak ages for active shooters are "bimodal" ranging from 15-19 and 35-44 years of age; this study included a case with a shooter outside those age ranges (NYPD 2012, 4). Finally, victim-targeting research indicates a previous grievance with the victim in 73 percent of cases, so this thesis included at least one case where the grievance was unclear or non-existent (Vossekuil et al. 2004, 16).

Table 1. Inclusion Criteria

Common Characteristics	Maximum Variation
U.S. shooting fits the DHS definition	All cases fit definition
Information available for comparison	Incident within the last 15 years
Predominantly male ¹	No less than one case with a female shooter
Predominantly one shooter ¹	No less than one case with two shooters
Predominantly 15 to 19 or 35 to 44 ¹	No less than one case with one shooter outside the bimodal peak ranges
Predominantly held a previous grievance ²	No less than one case where the shooter's grievance was unclear or non-existent

Sources: 1-New York Police Department, *Active Shooters: Recommendations and Analysis for Mitigation* (New York: NYPD, 2012); 2-Bryan Vossekuil, Robert A. Fein, Marisa Reddy, and Randy Borum, "The Final Report and Findings of the Safe School Initiative," USDE.gov (July 2004), 16.

Research Method

Research began by reviewing previous studies on the subject. Notably, this thesis did not include all of the theories detailed in chapter 2. While many present valid theories worth further study, not all of them fit the scope herein. Those included best answered the primary and secondary research questions.

Available studies proposed a wide array of theories, but no concise rubric to test correlating factors in future incidents. The method to answer the research question includes qualitative analysis of separate cases based on previous research. Gathering quantitative trends and qualitative analysis on school and non-school based shootings, this study used available data on common characteristics as a basis for comparison of separate cases (Creswell 2007).

This thesis derived some of the comparative data points from studies on the overall array of incidents and other data points from studies specifically focused on school shootings. Categories for common characteristics include incidents, shooters, and communities. In order to test for each characteristic, this thesis compared three distinct cases.

Incident Characteristics

This study included incident characteristics to determine common targeting patterns (Creswell 2007, 156). Research indicates shooters target institutions rather than specific victims. Institutional attacks, as defined by researchers, occur “on a public stage before an audience, committed by a member or former member of the institution, and involves multiple victims, some chosen at random for their significance” (Newman et al. 2004, 234). Using a research-devised rubric, detailed in table 2, this study completes a qualitative analysis to determine if the shooter did or did not target an institution. Analysis included identifying the factors in table 2. Further analysis included collective comparison of each case (Creswell 2007).

Table 2. Incident Characteristics

Research	Evaluation Criteria
-Shooters target institutions	1-In a public setting 2-Member or former member 3-Involves multiple victims, some random

Source: Katherine S. Newman, Cybelle Fox, David Harding, Jal Mehta, and Wendy Roth, *Rampage: The Social Roots of School Shootings* (New York: Basic Books, 2004), 234.

Shooter Characteristics

In addition, analysis included multiple shooter characteristics to identify common trends among active shooters. Available research noted some correlations between shooter characteristics prior to the incident. These characteristics include a history of mental illness or intervention, observed threats or interest in violence, and evidence of past bullying or social isolation. To compare shooter characteristics, this study included a research-devised rubric, described in table 3, to compare characteristics in each case (Creswell 2007).

As defined by one study, a history of mental illness or intervention in this thesis means the shooter suffered “serious mental problems – either a hospitalization, a prescription for psychiatric drugs, a suicide attempt or evidence of psychosis” prior to the incident (Fessenden 2000). The *New York Times* reported that many shooters suffered a history of mental illness or intervention. In 25 of 102 cases, or 25 percent of the time, shooters received a diagnosis prior to the incident; 48 of 102 shooters, or 47 percent, received a diagnosis after the incident (Fessenden 2000).

Previous research also reported that in 81 percent of cases, other people knew of the potential threat prior to the attack (Vossekuil et al. 2004, 25). Shooters also showed an interest in violence in over half, 59 percent, of cases (Vossekuil et al. 2004, 22). The same study reported that 37 percent of shooters showed an interest in violence in personal writings. Other areas of violent interest included movies, books, and video games (Vossekuil et al. 2004, 22). In this thesis, the threats criteria require “other people knew about the attacker’s idea and/or plan” prior to the attack (Vossekuil et al. 2004, 25). Further, the criteria for an interest in violence requires shooters “demonstrated some

interest in violence, through movies, video games, books, and other media” (Vossekuil et al. 2004, 22).

Further, research found that some shooters suffered social marginalization, such as bullying or an isolated status, prior to the incident. Shooters suffered bullying in 71 percent of cases (Vossekuil et al. 2004, 21). Another study found only one in ten shooters suffered isolation or a “loner” status (Newman et al. 2004, 374). Evaluation criteria for marginalization in this thesis require shooters suffered bullying, persecution, or “had no close friends” (Vossekuil et al. 2004, 20, 21).

Table 3. Shooter Characteristics

Research	Evaluation Criteria
History of Mental Illness or Intervention -25/102 [25%] received diagnosis prior to incident ¹ -48/102 [47%] received diagnosis after incident ¹	1-Shooter did or did not have a history of mental health evaluation or intervention
Threats or Interest in Violence -81% included others who knew of intentions ² -59% showed interest in violence ³	2-Shooter did or did not threaten or demonstrate an interest in violence
Social Marginalization -71% suffered bullying ⁴ -1 in 10 shooters [10%] categorized as a “loner” ⁵	3-Shooter did or did not suffer social marginalization

Sources: 1-Ford Fessenden, “They Threaten, Seethe, and Unhinge, Then Kill in Quantity,” *New York Times*, April 9, 2000; 2, 3, 4-Bryan Vossekuil, Robert A. Fein, Marisa Reddy, and Randy Borum, “The Final Report and Findings of the Safe School Initiative,” USDE.gov (July 2004), 25, 22, 21; 5-Katherine S. Newman, Cybelle Fox, David Harding, Jal Mehta, and Wendy Roth, *Rampage: The Social Roots of School Shootings* (New York: Basic Books, 2004), 374.

Community Characteristics

Finally, this study included multiple community characteristics to compare the community and the shooter's socioeconomic status. Research found violence correlates with several community characteristics. Notably, research on active shooters did not include an in-depth exploration of community characteristics. Studies indicate that general incidents of violence correlate with a low level of education, high unemployment, and poverty (Li and Rainwater 2000). To compare community characteristics, this study includes a research-devised rubric, described in table 4, to compare each case (Creswell 2007).

Most available literature highlighted different socioeconomic characteristics in communities with traditional violence and those with active shootings. Contrary to general trends in violence, the *New York Times* noted that shooters do not suffer from a comparatively low socioeconomic status (Fessenden 2000). Researchers noted shooting attacks occurred outside the crowded urban environments commonly associated with violent crime and more often occurred in middle class neighborhoods (Newman et al. 2004). In order to compare community characteristics, this study used available shooter data in each case compared to U.S. Census data on each community (Creswell 2007).

Socioeconomic status within this study is limited to three factors: education level, unemployment, and income. This thesis focused on the preceding factors for analysis because, when combined, they provide the best characterization of the shooter's status compared to the community. Available data on shooter occupation and history provided the shooter's education level. In order to determine socioeconomic status relative to the community, this thesis qualitatively compared each shooter's education level to the

available U.S. Census data in the affected city in the incident year to determine if it fell above, below, or equivalent to their age group (Creswell 2007).

Similarly, this thesis considered each shooter’s employment status relative to their occupation and age to determine if unemployment correlates with incidents. As a quantitative measure, this thesis compared each affected city’s unemployment rate to the national unemployment rate in the incident year to determine if the city fell above, below, or equivalent to the national rates. As a qualitative measure, this study compared the shooter’s employment status to local conditions to determine possible correlation (Creswell 2007). As a final community characteristic, this thesis compared each shooter’s estimated income level to determine if it fell above, below, or equivalent to median income level of the affected city (Creswell 2007).

Table 4. Community Characteristics

Research	Evaluation Criteria
<u>Education Level</u> -Low education correlates with overall violence	1-Shooter and city education levels did or did not correlate
<u>Unemployment</u> -Unemployment correlates with violence	2--City unemployment rate is or is not lower than the national average -Shooter and city unemployment did or did not correlate
<u>Income</u> -Poverty correlates with violence	3-Estimated shooter income and city median income did or did not correlate

Source: Jianling Li and Jack Rainwater, “The Real Picture of Land Use Density and Crime: A GIS Application” (ESRI International User Conference, 2000).

Cases

Based on the inclusion criteria in table 1, this study included three distinct shooting incidents. Cases include the 1999 Columbine High School shooting, the 2006 Goleta Post Office Distribution Center shooting, and the 2011 Tucson Safeway shooting. In accordance with the inclusion criteria, each case distinguished itself in at least one of the criteria (Creswell 2007).

Columbine High School Shooting

On Tuesday, April 20, 1999, at 11:19 a.m., Eric Harris and Dylan Klebold killed 13 and wounded 24 people with a mix of firearms and explosives at Columbine High School near Littleton, Colorado. Both students attended the school as seniors. Targets included students and teachers (Cullen 2009).

Their plan included using two bombs to demolish support columns in the school's cafeteria and to bring the library, built directly above, down on occupants during the peak lunch period. During planning, the shooters studied the cafeteria's occupancy to ensure maximum casualties (Cullen 2009, 333). Each shooter positioned themselves near separate exits to kill people fleeing the building. When the bombs failed to detonate, the shooters entered the school and began shooting victims (CRC 2001, 26). Arguably, the shooters killed or wounded targets of opportunity, but reports indicate they spared at least two students during the rampage (Cullen 2009, 152).

Harris, age 18, shot his victims with a Hi-Point 9mm carbine rifle and Klebold, age 17, used an Intratec TEC-DC9 9mm semi-automatic; both shooters also carried shotguns and explosives (Cullen 2009). Harris purchased the TEC-DC9 through a peer, who originally bought the weapon at a gun show (Cullen 2009, 168). The same peer later

purchased ammunition for Harris (Cullen 2009, 36). A friend of Klebold's, also of legal age, purchased the Hi-Point and two shotguns for the shooters at a gun show on November 22, 1998 (Cullen 2009, 90, 293). Harris purchased the multiple ten round magazines for the Hi-Point from a local gun shop (Cullen 2009, 294).

Harris and Klebold had planned the attack for over one year (Toppo 2012). Harris sought and obtained advice on bomb building through friends and the Internet. Cornered in the library with police maintaining a cordon outside the building, the shooters ended the attack by shooting and killing themselves at 12:08 p.m. (CRC 2001, 34).

This is the first case study analyzed in chapter 4. This study included the case because two shooters perpetuated the attack. In addition, the coverage of the attack provided sufficient detail and information available on the Internet. This case frames a two-shooter attack in a school setting.

Goleta Post Office Distribution Center Shooting

On Monday, January 30, 2006, Jennifer Sanmarco killed seven people in two separate attacks. Between 7:15 p.m. and 8:15 p.m., Sanmarco, age 44, drove to her former California home and shot and killed her former neighbor with a Smith and Wesson 9mm Model 915 handgun (CBS News 2009; AP 2006). Sanmarco proceeded directly from the murder of her former neighbor to her former place of employment, the Goleta Post Office Distribution Center, where approximately 80 workers were present. At approximately 9:00 p.m., Sanmarco followed another vehicle onto the processing plant property, circumventing the vehicle barrier. She shot two employees in the parking lot. She then threatened, but did not shoot, an employee to gain access to the facility. Once

inside, she shot four more employees, reloading at least once. She then shot and killed herself (Ramsland 2013).

Sanmarco purchased the Smith and Wesson 9mm legally in August 2005 at the Ace Pawn and Antiques shop in Gallup, New Mexico. She applied for a background check and waited the required two days. Upon successfully passing the check, she paid \$325 for the firearm and took possession. Reports indicate she travelled from New Mexico, her home since 2004, to California the week prior to the attack (AP 2006).

Sanmarco, a Caucasian, had a history of racial animosity towards minorities. Her behavior as a postal employee included several incidents with minority workers. The Post Office terminated Sanmarco and placed her on psychological disability in 2003 following multiple incidents. During her years in New Mexico, she wrote and self-published the “Racist Press,” which included conspiracy theories (AP 2006). Sanmarco reportedly argued with her former neighbor, a Caucasian female, while living in California (Ramsland 2013). Her victims at the processing plant included three African Americans, one Chinese-American, one Hispanic, and one Filipino worker; all of her victims were female (CBS News 2009). The Postal Service spokesperson conceded she might have known her victims (Chawkins and Leovy 2006). Her victims did not include supervisors (Kasindorf 2006).

This is the second case study analyzed in chapter 4. This study included the case because the shooter was female. In addition, the coverage of the attack provided sufficient detail and information available on the Internet. This case frames a female shooter attack in work and domestic settings.

Tucson Safeway Grocery Store Shooting

On Saturday, January 8, 2011 at 10:10 a.m., Jared Lee Loughner opened fire at a constituent meeting in the parking lot outside a Safeway Grocery Store in Tucson, Arizona. The attack began approximately 10 minutes into the publicly advertised rally (Gillum 2011). No security guards were present. Loughner, age 22, killed 6 and wounded 12 people with a Glock 9mm Model 19 (Santos 2012; CNN Wire Staff 2011).

Those killed at the ‘Congress on Your Corner’ rally included a federal judge, a nine-year-old girl, and multiple attendees (Murphy and Mchta 2011). Those injured included Congresswoman Gabrielle Giffords and other attendees. Attendees not hit in the first volley of weapons fire subdued Loughner by force as he attempted to change his 30 round magazine (Santos 2012). Bystanders had ended the attack by force when police arrived on scene at approximately 10:15 a.m. (Gillum 2011).

Loughner attended an event with Congresswoman Giffords in August 2007 and reportedly asked her, “what is government if words have no meaning,” a question he felt she did not answer (Abcarian, Reston, and Fiske 2011). He routinely railed against the government during his college classes and online and mentioned his dislike for the Congresswoman to a friend. There is no evidence he had a history with the other victims (Abcarian, Reston, and Fiske 2011).

Loughner purchased the Glock 9mm legally on November 30, 2010 (Abcarian, Reston, and Fiske 2011). He purchased ammunition the day of the attack. At 7:00 a.m., he unsuccessfully attempted to buy bullets at a local Wal-Mart. Undeterred, he bought the ammunition at a nearby Super Wal-Mart 20 minutes later (Gillum 2011). Reports indicate he carried at least 60 rounds at the incident (Santos 2012).

This is the third case study analyzed in chapter 4. This study included the case because the shooter did not personally know, attend school with, or work with any of the victims. In addition, the coverage of the attack provided sufficient detail and information available on the Internet. This case frames a lone, male shooter outside the bimodal ages of most shooters. The shooting occurred in a non-work, non-school setting.

Conclusion

This chapter details and explains the rubrics used for analysis. Building upon a wide variety of previous research helped to objectively narrow a wide field of characteristics to a more concise rubric. Approaching the cases with a wide variety of research helped to develop the themes necessary for this study. The methodology in chapter 3 details the criteria necessary to evaluate the themes: incident, shooter, and community characteristics (Creswell 2007, 75). Chapter 4 analyzes the criteria and compares cases to address both primary and secondary research questions.

CHAPTER 4

ANALYSIS

We do have one student in the class who was disruptive today, I'm not certain yet if he was on drugs (as one person surmised) or disturbed. He scares me a bit. The teacher tried to throw him out and he refused to go, so I talked to the teacher afterward. Hopefully he will be out of class very soon, and not come back with an automatic weapon.

– Lynda Sorenson, Pima Community College student,
Email from June 2010 describing Jared Loughner,
Johnson et al., *New York Times*

Introduction

The literature review in chapter 2 provided an overview of available research and theories on active shooter incidents. Previous research and data collection comprise the foundation for the analysis rubrics in chapter 3. The methodology in chapter 3 outlined the case analysis criteria and the evaluation criteria for each major characteristic. The case summaries in chapter 3 describe some of the characteristics analyzed further in this chapter.

The fourth chapter includes analysis of each active shooter cases outlined in chapter 3. The rubrics in chapter 3 provide the basis for analysis in this chapter. The analysis includes a breakdown of all the major evaluation criteria: incident, shooter, and community characteristics. In order to provide an overview for collective comparison, this study incorporated each case in an analysis table for each characteristic (Creswell 2007).

Incidents Characteristics

Analysis of incident characteristics addresses the primary research question of this thesis: What are the common characteristics in U.S. mass shootings? At first look, active shooter targeting often appears indiscriminate, with the shooter focusing solely on targets of opportunity. However, researchers propose that shooters target institutions rather than individuals (UPI 2012). Incident characteristics, as defined in this study, address motivation via targeting. table 5 details the incident characteristics defined in chapter 3 (Creswell 2007).

Table 5. Incident Characteristics

Research	Evaluation Criteria
-Shooters target institutions	1-In a public setting 2-Member or former member 3-Involves multiple victims, some random

Source: Katherine S. Newman, Cybelle Fox, David Harding, Jal Mehta, and Wendy Roth, *Rampage: The Social Roots of School Shootings* (New York: Basic Books, 2004), 234.

Using the rubric in table 5, this thesis analyzed the three cases in the framework to test the institutional targeting theory. The evaluated criteria include whether the attack did or did not occur in a public setting, the perpetrator was or was not a member or former member of the institution, and the incident did or did not include multiple, possibly random, victims (Newman et al. 2004, 234).

First, in each case, the shooter targeted a public setting. Attack locations include a public high school, a restricted access work center, and a political rally open to public

access. Though Eric Harris's and Dylan Klebold's high school included some security measures to restrict entry, over 2000 students attended and witnessed some portion of the attack (Cullen 2009, 3). The Goleta Post Office Distribution Center provided the most heavily secured venue of the three cases. Security features included restricted access to the parking area and key code entry to the facility. Nevertheless, the 80 postal employees present at the time of the attack made the attack very public (CBS News 2009). The Tucson shooting took place in a largely open area outside a Safeway Grocery Store. Open to the public, the rally included no armed guards or security and included at least 24 attendees (Murphy and Mchta 2011).

Only two of the three attacks involved a shooter with current or previous ties to the institution. Harris and Klebold were students at Columbine (Cullen 2009). Sanmarco, a former postal employee forced to retire from the center she attacked, believed the post office conspired against her (Ramsland 2013). Loughner proves the exception, as he had no clear ties to Congresswoman Giffords or the political rally he attacked. Conversations with classmates, friends, and online indicate Loughner had a political agenda. Further, partly due to his brief interaction with her at an August 2007 event, Loughner reportedly did not like Giffords and considered her "fake" (Abcarian, Reston, and Fiske 2011). It is unclear whether Loughner's political rants, online and in class, came close to making him feel like a member or former member of the political process.

Finally, each shooter targeted multiple victims, with varying degrees of random killing. While the Columbine shooters did not shoot all potential victims, their original plan, to blow up the cafeteria, demonstrated the indiscriminate nature of their targeting (Cullen 2009, 124). Jennifer Sanmarco knew her first target and appeared to discriminate

between targets at the postal center, but her intent in targeting remains unclear (Kasindorf 2006). Known for publishing racist newsletters and occasional outbursts, the shooter ultimately killed only ethnic minorities during the postal center assault (CBS News 2009). Information for the makeup of the ethnic population at the postal center is unavailable. Reports indicate that Jared Loughner did not demonstrate discrimination during the attack. He first shot the victim he expressed a past grievance with, Congresswoman Giffords, but then continued to fire on the crowd of at least 18 attendees until others forced him to stop (CNN 2011). Loughner’s targets included non-government officials (CNN 2011).

Table 6. Incident Characteristics Analysis

Evaluation Criteria	Columbine High School	Post Office Distribution Center	Safeway Grocery Store
1-Public setting	Yes, public high school; 2000 students ¹	Yes, restricted access work center; 80 workers present ³	Yes, public access political rally; two dozen in the crowd ⁴
2-Member or former member of institution	Yes, current students ²	Yes, former employee for six years, retired for three years ³	No, no known previous ties to politics ⁵
3-Involves multiple victims, some random	Yes, 13 killed, 24 wounded; random targeting ²	Yes, 7 killed; random targeting ³	Yes, 6 killed, 12 wounded ⁵
Rating	3 of 3 fit criteria	3 of 3 fit criteria	2 of 3 fit criteria

Sources: 1, 2-David Cullen, *Columbine* (New York: Hachette Book Group, 2009), 3; 3-CBS News, “Postal Shooter’s Bizarre Behavior,” February 11, 2009; 4-Kim Murphy and Seema Mchta, “6 Die in Tucson Rampage,” *Los Angeles Times*, January 9, 2011; 5-CNN, “Witness: Arizona Gunman ‘Was Ready for War’,” January 8, 2011.

Analysis

Table 6 outlines the analysis of incident characteristics. Despite Loughner's lack of political affiliation, each case largely correlates with the criteria for institutional targeting. Though not entirely coherent in each case, an after-the-fact consideration of their correspondence, actions, or grievances includes an institution. Each shooter aligned in one way or another against a large portion of society. Writings recovered in the aftermath indicate both Jennifer Sanmarco and Jared Loughner opposed the government (Ramsland 2013; Abcarian, Reston, and Fiske 2011), while the Columbine shooters, in a long string of recorded media, appear to have opposed almost the entire world (Toppo 2009).

Shooter Characteristics

Analysis of shooter characteristics addresses both the primary research question and a secondary question: Do shooters have shared predictive behaviors? Shooter characteristics identify risk factors correlating with active shooters. Research proposes varying levels of correlation with a history of mental health problems, threatening behavior or an interest in violence, and social isolation. Table 7 details the shooter characteristics defined in chapter 3 (Creswell 2007).

Table 7. Shooter Characteristics

Research	Evaluation Criteria
<u>History of Mental Illness or Intervention</u> -25/102 [25%] received diagnosis prior to incident ¹ -48/102 [47%] received diagnosis after incident ¹	1-Shooter did or did not have a history of mental health evaluation or intervention
<u>Threats or Interest in Violence</u> -81% included others who knew of intentions ² -59% showed interest in violence ³	2-Shooter did or did not threaten or demonstrate an interest in violence
<u>Social Marginalization</u> -71% suffered bullying ⁴ -1 in 10 shooters [10%] categorized as a “loner” ⁵	3-Shooter did or did not suffer social marginalization

Sources: 1-Ford Fessenden, “They Threaten, Seethe, and Unhinge, Then Kill In Quantity,” *New York Times*, April 9, 2000; 2, 3, 4-Bryan Vossekuil, Robert A. Fein, Marisa Reddy, and Randy Borum, “The Final Report and Findings of the Safe School Initiative,” USDE.gov (July 2004), 25, 22, 21; 5-Katherine S. Newman, Cybelle Fox, David Harding, Jal Mehta, and Wendy Roth, *Rampage: The Social Roots of School Shootings* (New York: Basic Books, 2004), 374.

Using the rubric proposed in table 7, this thesis analyzed the three cases in the framework to test the shooter characteristics. The evaluation criteria included whether, prior to the incident, the shooter did or did not receive a diagnosis or intervention for mental illness, did or did not make threats or show an obsession with violence, and did or did not suffer from social marginalization. Table 8 outlines the basic findings, with a sub-rating for each criteria and an overall case rating for comparison (Creswell 2007).

First, research found evidence of a mental illness diagnosis or intervention in three of the four shooters. After the pre-attack arrest of the Columbine shooters, both entered counseling through a diversion program. Eric Harris’s father sought psychiatric treatment for his son. Harris saw a psychiatrist, who prescribed antidepressants. Conversely, Dylan Klebold attended the diversion program, but no one diagnosed or

treated him for mental illness (Cullen 2009, 214). Jennifer Sanmarco received treatment and intervention for mental illness as early as February 2001, when the police forcibly removed her from the postal center and sent her to a psychiatric facility for three days (AP 2006). The diagnosis and extent of her treatment following this incident is unclear but, when the post office relieved her in 2003, they placed her on disability for mental health reasons (Kasindorf 2006). Though he reportedly did not receive mental health services prior to the incident, the college Jared Loughner attended did allude to his need for mental health intervention when they dismissed him in 2010. In October that year, Pima Community College, where he had been a student for over a year, sent him a letter that required he see a mental health professional prior to returning (Abcarian, Reston, and Fiske 2011).

In addition, three of four attackers threatened or showed an interest in violence prior to the attack. The Columbine shooters provided a long list of threats and threatening behavior before the shooting. Both Harris and Klebold alluded to the pending attack to their friends, shared their bomb building efforts on the Internet, and kept personal journals threatening individuals (CRC 2001, 18). One parent identified Harris as a threat to both the police and his parents on multiple occasions (Cullen 2009, 163). Conversely, reports do not indicate others perceived Sanmarco as a threat. Her erratic behavior included public nudity, talking to herself, racist comments, producing racist newsletters, but no known threats (CBS News 2009). The post office reported they placed her on disability for her own safety (Kasindorf 2006). Finally, peers and professors at the college Loughner attended considered his pre-incident behavior threatening (Johnson et al. 2011). The college advised him not to return unless “a mental health professional

certified he was not a danger to himself or others” (Abcarian, Reston, and Fiske 2011). Loughner’s online behavior in 2010 included a post that read, “I’m ready to kill a police officer” (Stellar 2011).

Finally, only two of four shooters fit the criteria for social marginalization. At Columbine High School, both Harris and Klebold had friends and interacted socially. There is not significant evidence that either shooter suffered bullying. The more socially awkward of the two, Klebold, still attended his prom and had multiple friends (Cullen 2009, 9). Though there is no evidence of bullying, Sanmarco did not appear to have any close friends and likely suffered from social marginalization. She lived in New Mexico from 2004 until returning to California to carry out the attack in 2006. Her writings included a personal will, but did not identify who would receive her belongings (Ramsland 2013). Loughner also reportedly suffered marginalization, with at least one or two cases of bullying. At age 16, a fellow student assaulted Loughner with an improvised needle while at school. In October 2008, shortly after the Army denied his enlistment because he failed a drug screening, Loughner reported online harassment to the police. By the end of 2008, friends reported that Loughner broke contact with them for reasons unknown. He lived at home with his parents until the attack (Abcarian, Reston, and Fiske 2011).

Table 8. Shooter Characteristics Analysis

Evaluation Criteria	Columbine High School	Post Office Distribution Center	Safeway Grocery Store
1-History of Mental Illness	-Harris took antidepressants ¹	-Sent to psychiatric institute for 3 days ⁷	-Asked to take a mental health evaluation ¹¹
Sub-rating	1 of 2	1 of 1	1 of 1
Rating	3 of 4 fit criteria		
2-Threats or Interest in Violence	-Peers bought firearms and knew of bomb building ² -Harris identified as hostile threat by one complainant ³ -Both wrote threats in papers and online ⁴	-Erratic behavior included public nudity, talking to self, racist comments, and racist attitudes, but no known threats ⁸ -Placed on disability "more for the safety of herself" ⁹	-College advised shooter could not return unless "a mental health professional certified he was not a danger to himself or others" ¹¹ -Wrote online "I'm ready to kill a police officer" ¹²
Sub-rating	2 of 2	0 of 1	1 of 1
Rating	3 of 4 fit criteria		
3-Social Marginalization	-Harris described as popular and may have bullied others ⁵ -Klebold described as "lonely," but had friends ⁶	-No reported bullying, but a loner with no close friends ¹⁰	-At age 16, "poked" with an improvised weapon ¹¹ -Reported online harassment and broke contact with friends at the end of 2008 ¹¹
Sub-rating	0 of 2	1 of 1	1 of 1
Rating	2 of 4 fit criteria		

Sources: 1, 2, 3, 5, 6-David Cullen, *Columbine* (New York: Hachette Book Group, 2009), 208, 214, 122, 163, 9, 186; 4-Columbine Review Commission, *The Report of Governor Bill Owens*, May 2001, 18; 7-Associated Press, "Postal Killer Believed She was Target of a Plot," *NBC News.com*, February 3; 8-CBS News, "Postal Shooter's Bizarre Behavior," February 11, 2009; 9-Martin Kasindorf, "Woman Kills 5, Self at Postal Plant," *USA Today*, February 1, 2006; 10-Steve Chawkins and Jill Leovy, "Killer's Behavior had Grown more Bizarre," *Los Angeles Times*, February 2, 2006; 11-Robin Abcarian, Maeve Reston, and Molly Hennessy-Fiske, "Suspect Tucson Shooter 'Slowly Spiraled in Madness'," *Baltimore Sun*, January 17, 2011; 12-Tim Stellar, "Man Linked to Giffords Shooting Rampage Called 'Very Disturbed'," *Arizona Daily Star*, January 8, 2011.

Analysis

Table 8 outlines the analysis of shooter characteristics. The secondary question of shared predictive behaviors varies in a different combination with each case. Diagnosed mental illness and threats or interest in violence showed the highest positive correlation, with social marginalization only positively correlating with half the shooters. Ultimately, a combination of factors may prove more useful when conducting predictive analysis of shooter characteristics.

The criteria of mental illness correlates with all shooters in each case, but only acts as a predictive criteria in 75 percent of the shooters. In the case of Harris and Klebold, the FBI reported after the incident that both suffered from mental illness, but the fact remains that Klebold's depression went undiagnosed prior to the incident (Cullen 2009, 196). It is possible that a larger sample size would produce a stronger positive or negative correlation (Creswell 2007).

The criteria requiring threats or an interest in violence correlates in three of four cases. However, in the case of the postal center shooting, no one reportedly felt Sanmarco represented a threat. While Klebold, Harris, and Loughner made multiple written and verbal threats, not one person identified Sanmarco as anything but erratic prior to the shooting spree (Cullen 2009; Abcarian, Reston, and Fiske 2011; Kasindorf 2006).

Possibly, no one identified Sanmarco as a threat because she met another criterion: social marginalization. Though both Sanmarco and Loughner suffered marginalization, Sanmarco arguably interacted in less social situations. Her activities in New Mexico included occasional, erratic interaction with local officials, but no

classrooms and no reported Internet activity. Sanmarco, of the four shooters, appeared most socially isolated (Abcarian, Reston, and Fiske 2011).

Community Characteristics

Analyzing community characteristics addresses both the primary research question and a secondary question: Are community characteristics correlated with the locations where incidents occur? Community characteristics identify risk factors correlating with cities where attacks occurred. Research proposes higher, equivalent, or lower levels of shooter education, employment, and income comparative to the city where the attacks occurred (Li and Rainwater 2000; Fessenden 2000).

Table 9. Community Characteristics

Research	Evaluation Criteria
<u>Education Level</u> -Low education correlates with overall violence	1-Shooter and city education levels did or did not correlate
<u>Unemployment</u> -Unemployment correlates with violence	2-City unemployment rate is or is not lower than the national average -Shooter and city unemployment did or did not correlate
<u>Income</u> -Poverty correlates with violence	3-Estimated shooter income and city median income did or did not correlate

Source: Jianling Li and Jack Rainwater, “The Real Picture of Land Use Density and Crime: A GIS Application” (ESRI International User Conference, 2000).

Using the rubric proposed in table 9, this thesis analyzed the three cases in the framework to test community characteristics. The evaluation criteria included shooter and city education levels, city and national unemployment, shooter and city unemployment,

and estimated shooter income and city median income. U.S. Census data included each affected city, as available. This study did not find sufficient data for Goleta, California, and used nearby Santa Barbara, California, in the postal center shooting. U.S. Census data for Littleton, Colorado, in 1999 also proved insufficient, so this study used data from 2000. Table 10 outlines the basic findings, with a socioeconomic correlation for each criteria and an overall case rating for comparison (Creswell 2007).

First, comparison with U.S. Census data found shooter's educational levels did not exceed and only fell below the majority of the adult population in one of four cases. The Columbine shooters both attended high school, an educational level equivalent with their ages of 17 and 18 years. Further, Klebold received acceptance to a college and Harris made overtures to join the Marines prior to the incident (Cullen 2009). Both shooters actively attended high school in Littleton, Colorado, where nearly three-quarters of the adult population had some college or more in 2000 (USCB 2012a). Alternately, it is likely Jennifer Sanmarco fell below the education level of over 70 percent of nearby Santa Barbara adults in 2006 (USCB 2012b). Details on Jennifer Sanmarco's education remain unknown, but, based on her employment as an "entry-level clerk" with the postal service, she likely did not have more than a high school level education (Kasindorf 2006). According to the U.S. Postal Service website, employment does not require a high school diploma for individuals 18 and over (USPS 2013). Jared Loughner, at age 22, had some college and fell within the equivalent education level for his age (USCB 2013c; Abcarian, Reston, and Fiske 2011).

Next, U.S. Census data showed that none of the affected cities had a higher rate of unemployment than the national level. In comparison, two of the four shooters, both

adults, did not have employment at the time of the attack. Both Harris and Klebold attended high school full-time and held jobs at a local restaurant for many months leading up to the incident (Cullen 2009, 9). However, the other two shooters remained unemployed. Sanmarco lived on disability from the Post Office (Frosch 2006). Loughner transitioned through a string of low paying jobs prior to his dismissal from college in October 2011 (Abcarian, Reston, and Fiske 2011).

Finally, an estimated three of four shooters lived at or above their respective city's median income level. Described as a growing city in 1999, both the Harris and Klebold families moved into more expensive houses in the years leading up to the attack (Cullen 2009, 114, 127). As minors, both shooters benefited socioeconomically from the income of their parents. Conversely, the estimated income of the other two shooters fell below the median income of communities they attacked. Sanmarco collected disability for her former job as a postal clerk. According to online resources, the average income of a postal clerk in 2011 was just over \$53,000 annually (Time 2013). Based on U.S. Census data, this 2011 salary still falls below the local median income of nearby Santa Barbara in 2006 (USCB 2012b). It is unclear what city Sanmarco lived in while residing in California and how much she earned in disability, but it is likely that her profession kept her below the median income level. Loughner suffered from similar unemployment, but lived with his parents, one of whom had employment (Abcarian, Reston, and Fiske 2011). The media described his home neighborhood as "working-class" (Murphy and Mchta 2011). The median income of Tucson, Arizona in 2006 falls in line with the estimated median income of working-class families (USCB 2012c; Beeghley 2005).

Table 10. Community Characteristics Analysis

1-Education	Littleton 2000 ¹	Santa Barbara 2006 ²	Tucson 2011 ³
-Population over 25 years old	27,669 ¹	56,111 ²	332,051 ³
-Less than high school	8.8% ¹	16.3% ²	15.6% ³
-High school or equivalent	20.3% ¹	13.0% ²	25.0% ³
-Some college or associate's	30.9% ¹	26.8% ²	35.9% ³
-Bachelor's degree or higher	40.0% ¹	43.9% ²	23.5% ³
Socioeconomic correlation	No, equivalent with age ⁴	Yes, estimated below 70% of population ⁵	No, equivalent with age ⁶
Rating	1 of 4 shooters below education level		
2-Unemployment	Littleton 2000	Santa Barbara 2006	Tucson 2011
-City Unemployment	2.0% ¹	2.7% ²	8.5% ³
-National unemployment	4.0% ⁷	4.6% ⁸	9.4% ⁹
Socioeconomic correlation	No, shooters employed in area with low unemployment rate ¹⁰	Yes, shooter unemployed living on low income attacked an area with low unemployment ¹¹	Yes, shooter unemployed, non-student, area slightly lower than national rate ¹²
Rating	4 of 4 cities with lower unemployment 2 of 4 shooters unemployed		
3-Median Income	Littleton 2000	Santa Barbara 2006	Tucson 2011
-Local median income	\$50,583 ¹	\$54,476 ²	\$35,362 ³
Socioeconomic correlation	No, estimated both families at or above median income ¹³	Yes, disability and pay estimated below local median household ¹⁴	No, shooter unemployed, but one parent worked ¹²
Rating	2 above, 1 equivalent, 1 below median income		

Sources: 1-United States Census Bureau, “American Fact Finder-Littleton City, Colorado,” 2012; 2-United States Census Bureau, “American Fact Finder-Santa Barbara City, California,” 2012; 3-United States Census Bureau, “American Fact Finder-Tucson City, Arizona,” 2012; 4, 10, 13-David Cullen, *Columbine* (New York: Hachette Book Group, 2009): 9, 11, 14, 127; 5-United States Postal Service, “Employee Requirements,” 2013; Associated Press, “Postal Killer Believed She was Target of a Plot,” February 3, 2006; 6, 12-Robin Abcarian, Maeve Reston, and Molly Hennessy-Fiske, “Suspect Tucson Shooter ‘Slowly Spiraled in Madness’,” *Baltimore Sun*, January 17, 2011; 7, 8, 9-Trading Economics, “United States Unemployment Rate,” 2013a, 2013b, 2013c; 11-Dan Frosch, “Woman in California Postal Shootings had History of Bizarre Behavior,” *New York Times*, February 3, 2006; 14-Martin Kasindorf, “Woman Kills 5, Self at Postal Plant,” *USA Today*, February 1, 2006.

Analysis

Table 10 outlines the analysis of community characteristics. In line with the trend that the *New York Times* described in 2000, shooters in this study do not universally demonstrate the low socioeconomic status of traditional violent offenders (Fessenden 2000). Nor do the cases in this study demonstrate an opposing trend – highly educated shooters with strong socioeconomic backgrounds. Sanmarco, arguably the most impoverished and uneducated offender, perpetrated an attack similar to the Columbine shooters, the offenders with the highest socioeconomic status. The communities, ranging from booming Littleton, Colorado, to “working-class” Tucson, Arizona, demonstrate a range of affected communities, education levels, incomes, and unemployment (Cullen 2009; Murphy and Mchta 2011). To address the secondary question of community characteristics, this study does not show significant support for a correlation between socioeconomic status and active shooters.

Conclusion

In general, the methodology used in this study fit the intent of objectively answering the research questions. The collective comparative model provided an appropriate framework for analyzing active shooter cases (Creswell 2007). In addition, the qualitative method helped to avoid over-categorizing the data and provided greater insight into each individual case (Flyvbjerg 2006).

Challenges included objectively analyzing the data and gathering reliable data on each case. Mitigating source subjectivity required gathering multiple sources for each case and analyzing them using cross-case synthesis. The tables advocated in cross-case synthesis aided in the analysis of multiple, divergent incidents and provided a discernible

representation for the reader (Creswell 2007). Reliance on Internet sources, rather than police reports or an official database, required the inclusion of five sources for two of the three cases. Some facts, such as family history, were not available in all cases, making a more thorough evaluation impossible.

Limited in scope, this collective comparative study included only a sample of the available theories. Some of the issues not in this study include a deeper analysis of each shooter's mental health diagnosis and the copycat effect of shooting incidents. The first issue, mental health diagnosis, requires more technical knowledge than available for this study. Identifying psychopathology a psychologist, but could provide insight into shooter characteristics (Hare 1999). Finally, the copycat phenomenon and the theory that overall incidents rise following a shooting requires a larger scope than this study provides (O'Toole 1999).

This chapter completed the analysis of incident, shooter, and community characteristics defined in chapter 3. In addition, this chapter addressed the proposed research questions. Chapter 5 presents the findings from this research, recommendations, and this study's conclusions. The intent of the next chapter is to provide a way ahead for prevention and study.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

I've never seen such a large number [of killings] over such a short period of time involving so many victims.

–Jack Levin, Criminologist, Northeastern University
Rucker, Boston.com

Introduction

Despite increased security measures and new response protocols, the United States continues to suffer from active shooting incidents. The attacks did not begin with Columbine and date back even further than the 1966 shooting in Austin, Texas (NYPD 2012; Fessenden 2000). Large-scale public discussion in recent months advocates intervention through gun control legislation and, to a lesser extent, mental health screenings (Szabo 2013). Communities, with no prescient strategy for prevention, conduct law enforcement led training to educate and respond to potential incidents (Bjelopera et al. 2013).

The preceding chapter analyzed the incident, shooter, and community characteristics of active shooting incidents. Active shooters in this study targeted institutions, demonstrated signs of mental illness, and largely broadcasted their violent intentions in advance. Half of them suffered from social isolation and some loss of socioeconomic status. The intent of this chapter is to summarize the research findings and discuss recommendations.

Research Findings

The complexity of the active shooter problem proved daunting throughout the research. Analyzing the intentions of individual shooters often required drawing reasonable conclusions from the behavior of people who committed profoundly irrational acts. In each case, the intent of this study is to uncover predictive or common characteristics to determine why they chose to attack.

Each case met the institutional attack criteria, but one, Jennifer Sanmarco, carried out a private homicide by shooting her old neighbor first (AP 2006). Notably, the one attacker who varied was female and older, but targeting a victim at more than one location is not a phenomenon limited to female or older attackers. As previously noted, the Newtown Elementary School shooter, age 20, killed his mother before attacking the school (Bratu 2012). With the exception of Sanmarco's attack on her neighbor, each shooter's attack targeted victims, a portion of whom they did not know.

This study also found each shooter suffered from mental illness, but only three of the four experienced attempts at intervention prior to the incident. It is unclear why no one attempted to intervene to help Dylan Klebold with mental illness, but it is noteworthy that he carried out the attack with a co-conspirator (CRC 2001). As characterized by the book *Columbine*, Klebold relied heavily on Eric Harris to carry out the attack (Cullen 2009).

This thesis characterized violence within a broad range from interest in violent media to direct threats. Three of the four shooters demonstrated both an interest in violence and threatened others. Notably, the one shooter who varied on threatening behavior and interest in violence was female. Sanmarco's behavior, described as "crazy,"

included no known threats to her coworkers or anyone else (Chawkins and Leovy 2006). It is unknown why Sanmarco did not demonstrate any type of threatening behavior, but the finding highlights a gender distinction worthy of further research.

Social marginalization in this study characterizes either positive or negative external influences in each shooter's life. Two of the four shooters suffered social marginalization, defined as bullying or social isolation. Only one shooter, Jared Loughner, reportedly suffered bullying (Abcarian, Reston, and Fiske 2011). Both Sanmarco and Loughner lived an isolated existence outside the influence of peers. Sanmarco, with only the sporadic intervention of the police, had little positive influence in her life and lived alone (Ramsland 2013). Loughner's relationship with his parents, who he lived with, is undefined but, by the time of the 2011 shooting, he had broken contact with close friends (Abcarian, Reston, and Fiske 2011). The two shooters who did not suffer marginalization carried out the attack together. While Harris and Klebold had external relationships, during the planning and execution of the attack they operated interdependently (Cullen 2009).

The intent of including the socioeconomic characteristics of each shooter was to demonstrate their relative position in the communities they attacked. However, the data more aptly reflected the shooter's personal socioeconomic status independent of their community. Regardless of the community, in each situation external influences and the shooter's behavior led to their socioeconomic status.

Comparison against community data proved difficult because of the wide range of ages in the data set, and, in one case, a lack of information. The Columbine shooters both lived at home lived and attended school in an affluent community (Cullen 2009). Harris

and Klebold adopted each of their family's status. Similarly, Loughner, though unemployed, lived at home and benefited from his family's income (Abcarian, Reston, and Fiske 2011). Using the census data, which polls the education level of those over 25, Loughner's partial education at Pima County Community College coincided with his age (USCB 2013c; Abcarian, Reston, and Fiske 2011).

Two shooters faced some degree of inequity within their larger community, but this study attributes that inequity in socioeconomic status to their mental illnesses. The postal center placed Sanmarco on disability after the police removed her from the work center and institutionalized her for three days (AP 2006). Loughner's school asked him to seek a mental health evaluation before returning (Johnson et al. 2011). In both cases, the identified mental health problems and resulting erratic activity of each shooter likely led them to a lower socioeconomic status.

This study found common characteristics amongst incidents and shooters in three active shooter cases. In each incident, the shooter targeted an institution; in some incidents, they also appeared to have a primary target. Each shooter suffered from mental illness and, in most cases, someone else knew they posed a threat. The same violent shooters demonstrated an interest in violent materials. Half the shooters suffered social isolation, but most did not appear to suffer bullying. Socioeconomic inequity appears to exist as a secondary effect of mental illness.

Recommendations

Preventing mass shootings is a frustrating endeavor for experts; one criminologist compared it to "reading tea leaves" (Rucker 2009). The intent of prevention is to intervene effectively before the incident. Each shooter held a strong compulsion and three

of four told someone else what they planned to do. Three of four shooters showed an interest in violent books, video games, or writing. Two of four shooters suffered marginalization. In each case, people attempted to intervene, but their actions did not deter or stop the shooter.

The recommendations in this thesis describe the efficiency and likely effectiveness of proposed prevention strategies in each case. Efficiency measures the cost of the strategy, an important consideration to maintain the means of intervention. Effectiveness measures the likelihood the strategy could have prevented the incidents herein. Proposed strategies for prevention include mental health intervention and firearm legislation.

Mental Health Intervention

For the cases in this study, mental health intervention provides a somewhat efficient and a likely effective measure to prevent two of three cases. With the benefit of hindsight every case in this study argues for mental health intervention, but limitations include available information. Harris's and Klebold's mental health issues did not fully surface until after the incident and the interventions implemented implied no one in a position to act understood the threat (Cullen 2009, 196, 236). However, Sanmarco and Loughner showed signs of serious mental health issues prior to the attacks and, in each case, others acted to intervene (AP 2006; Abcarian, Reston, and Fiske 2011).

Research indicates that efficient mental health care solutions continue to elude America and the expense poses a greater problem for impoverished citizens. The average psychiatric bed costs "about \$685 per day, and Medicaid . . . won't reimburse larger state facilities" (Moroney 2012). Mental health care can also prove costly for individuals who

have health insurance. As one psychiatrist wrote, “reimbursement is generous for treatment of sarcoma, but not for the treatment of schizophrenia” (Kreisman 2011).

Efficiency appears less important when considering the persistent nature of mental illness and the secondary effects of reduced budgets. In the last 50 years the U.S. attempted to shift care from state institutions to community hospitals (Grob 1995). The result left the country with “14 state and county psychiatric beds . . . for every 100,000 people” while experts “recommended at least 50” (Moroney 2012). In one state, the local hospitals overflowed and the “cascade effect” required a higher rate of police intervention; patients sought care many miles away at personal expense (Moroney 2012). In each instance, the cost of care shifted to another level of government or to the people who suffer the illness. Despite attempts to defray costs, someone still pays.

Mental health intervention might have proven effective to prevent the Sanmarco and Loughner cases. In the case of Sanmarco, effectiveness relies upon further legislative action. In 2001, California law allowed involuntarily committed patients the right to refuse treatment and confinement (Romney 2012). Sanmarco departed from her 2001 commitment three days after the police involuntarily confined her there (Frosch 2006). Providing funding, taking personal action to commit, and revising legal impediments to involuntary care could positively affect the outcome of two of three incidents in this study.

Firearm Control Legislation

Firearm control legislation offers a more efficient, but less effective means of intervention in these cases. The cost to consumers remains unknown, but one article reasoned, “licensing and other regulations” drive up prices on firearms (Hoffmann 2013).

Unfortunately, restricting firearm sales to potential shooters depends upon their legal cooperation and successfully predicting future behavior.

Effective firearm legislation must either deter or keep weapons out of the hands of shooters. The tangible denominators in most firearm laws applicable to this study range from youth to mental illness (Zimring 2004). However, in one case, the shooters in this study demonstrated an unwillingness to adhere to laws and the means to break them. Faced with legal restrictions based on their youth, the Columbine shooters broke firearm control laws to obtain their weapons by getting them through another source (Toppo 2009).

One of the proposed provisions for firearm legislation would “require mental-health professionals to report mentally ill people” (Szabo 2013). Using mental health as sole predictive criteria poses two problems. First, the prevalence of mental illness in America means the law will likely limit firearm sales far beyond the pool of potential violent citizens. According to the National Institute of Mental Health, “about one in four adults-suffer from a diagnosable mental disorder each year” (NIMH 2013); the rate of active shooter incidents, 1 percent of overall violent crimes, is much lower (Fessenden 2000). The rate of overall homicides in the U.S., over 14,000 in 2012, also falls well below the rate of mental illness (O’Leary 2012). In addition, entry into a database for denial is reliant upon diagnosis (Szabo 2013). As described, the unavailability of care in the U.S. decreases the likelihood of diagnosis.

Denying firearms sales based on a previous mental health diagnosis might have proven effective in one of three cases. Based on Sanmarco’s previous committal to a psychiatric hospital, the background check in New Mexico might have denied her the

firearm (AP 2006). While she appeared to have significant motivation, it remains unclear if Sanmarco had the contacts to get a firearm through illegal means. In the remaining two cases the shooters obtained the firearms illegally or did not receive a diagnosis until after the attack (Cullen 2009; Perry 2011).

A more effective legislative measure opens the route to bystander intervention, but it is not a method of prevention. Restricting magazine capacity might have influenced the outcome in one of the three cases. Notably, after he shot 18 people, bystanders overpowered Jared Loughner when he attempted to change the 30 round magazine on his firearm (Santos 2012). Arguably, bystanders might have overpowered him earlier if he had a smaller capacity magazine. However, restricting magazine capacity alone cannot predict a less deadly outcome; both Sanmarco and the Columbine shooters changed magazines during their shootings (Brantingham 2013; CRC 2001). This tactic requires both shooter error and bystander intervention in a dynamic situation.

Overall, this study recommends mental health intervention as a measure that might have prevented two of the three cases. Firearm legislation, reliant upon mental health intervention for success and law abiding citizens, is a secondary consideration, but might have prevented one of three cases. Notably, this thesis found that neither of these measures proved likely to prevent the Columbine shootings. Treatments for psychopathology include “strict control and intensive supervision,” but their overall effectiveness is unknown (Hare 1999, 205). Therefore, even if a psychologist had identified Eric Harris as a psychopath prior to the incident, treatment measures might not have deterred him (Cullen 2009).

Conclusions

This chapter concludes the findings and recommendations for this study. While it found correlations between many of the incident and shooter characteristics, this thesis did not find a strong correlation across the community characteristics. Analysis indicates that shooters target institutions and there is a higher rate of mental illness amongst shooters than exists amongst the U.S. population (NIMH 2013). This study attributed the socioeconomic inequity in two cases to the shooters' increasing mental health issues. Recommendations for prevention of these incidents include funding the mental health care system to expert prescribed levels and amending care laws to favor the judgment of medical professionals over involuntarily committed patients.

Recommend Areas For Further Study

This subject requires further research. The potential array of characteristics correlating with the attacks include factors beyond the limitations of this study. Recommended focus areas include multinational shooting incidents, gender-based violence, and further study of psychopathic behaviors.

As noted in chapter 1, international shooting incidents occur at a lower rate (NYPD 2012). Analysis of the societal differences in countries with less incidents could yield community characteristics this study overlooked. A cross-cultural comparison could also yield new insights into effective strategies other countries implemented for prevention. Applying foreign strategies to U.S. active shooter cases might determine applicability at home.

In addition, research into the differences between violence in men and women might yield helpful data. The frequency of male active shooters is disproportionately

higher than that of female shooters (NYPD 2012). Further, analysis in this study found the one case with a female shooter did not include previous violent behavior or threats; the reason for the difference remains unknown. Determining how violence manifests itself differently between genders might provide a new strategy for prevention.

Finally, a study of psychopathic characteristics, conducted by a psychologist, could determine how many of the shooters meet the criteria for psychopathology. This study included one case with a psychopathic shooter and it is unlikely the intervention tools recommended could have prevented that attack. A wider analysis of cases could determine how many active shooters fit the psychopath diagnosis to determine the number of attacks that remain beyond the reach of the recommended intervention techniques.

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