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Psychosocial Differences in Far Right, Far Left, Islamic, and Single Issue Lone Extremists

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Abstract

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Extremists

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MS, Eastern Michigan University, 2005

BA, Oakland University, 2001

Dissertation Submitted in Partial Fulfillment

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Abstract

Acts of lone extremism are on the rise, yet little is known about who commits these acts.

Research in this area has failed to delineate by extremist subtype. This has led to the

misconception these acts and actors present with such variance psychosocially that they

cannot be predicted. The purpose of this research was to assess whether statistically

significant relationships exist between lone extremist subtypes on the psychosocial

variables of mental illness, substance use, and having radicalized friends or family

members. The conceptual framework for this study was De La Corte's psychosocial

principles of terrorism, which addressed the social and political influences of terrorism

with the complex psychosocial constructs that may exist. The Profiles of Individual

Radicalization in the United States was chosen as the dataset and includes de-identified

individual-level information on 1,865 extremists. The research questions that guided this

study sought to determine if significant differences exist between 4 lone extremist

subtypes across 4 psychosocial variables. Crosstabulation analysis and multiple chi-

square tests for independence were used to test the relationship between categorical

variables. Statistically significant relationships were found among each lone extremist

subtype and having radicalized family members and friends ($p=.00$). In terms of mental

illness, far left extremists were the only extremist subtype that yielded a significant

relationship ($p=.00$). Also, a significant relationship was found between substance use

and far right ($p=.00$), far left ($p=.01$), and single issue ($p=.04$) extremists. In terms of

social change, this research presented support for studying lone extremism by subtype

and also provided a foundation towards constructing a predictive model.

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Dedication

I would like to dedicate this dissertation to my father and mother, James and Sara Jackson. In loving memory of my father, I thank you for teaching me from an early age the world is not meant to be viewed from rose colored glasses, but for what it truly is, if change is to be brought forth. To my mother, who modeled the determination and hard work it took to raise a family, purse higher education, and work fulltime. I would also like to thank my brother, Scott Jackson, the "Golden Child" for his competitive nature who taught me to push harder and farther than I thought I could reach.

To my children, Eva and Declan LaMontagne, you are my driving force as a servant for social change to leave the world a better place than I found it. And lastly, to my husband, Kris LaMontagne, you are the love of my life. Without you, none of this would have been possible. You have taught me how to persevere and have made me a better, stronger person every day through your love and support.

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I would like to thank Walden University for the invaluable education and tools I have acquired over the process of obtaining my doctorate education. Walden's commitment to academic excellence and creating social change promotes the development of scholars prepared to make tangible world changes. I also would like to thank my Committee Chair, Dr. Neal McBride, Second Committee Member, Dr. Jason Roach, and my University Reviewer, Dr. Stephen Hampe. Thank you for extending your expertise and providing valuable feedback and guidance during my dissertation process.

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Chapter 1: Introduction

Terrorism has been on the rise internationally and domestically over the last

several decades (Khan & Nhlabatsi, 2017). These threats originate on a group and

individual level and may include domestic homegrown extremists in the United States, as

well as international groups like the Islamic State in Iraq and Syria (ISIS), the Irish

Republican Army, and al-Qaeda. According to the National Consortium of the Study of

Terrorism and Responses to Terrorism (START, 2010), terrorist attacks orchestrated by

unaffiliated individuals were responsible for 6.5% of known attacks between 1970 and

2007. In more recent years, between 2010 and 2016, START (2017a) data suggest that

attacks carried out by lone extremists loosely linked to extreme movements were on the

rise and terrorist attacks accredited to formal organizations had become rare. Combined,

group and lone extremists executed 2,794 terrorist attacks causing 3,659 deaths in the

United States from 1970 to 2016 (START, 2017a).

Terrorism, like other forms of violence, cannot be averted entirely. Still, critical

research may lead to advances in tactics toward detecting lone extremism and then

educating and drawing upon the efforts of multidisciplinary community-based providers

such as mental health professionals, educators, and law enforcement for detection.

Although research on terrorism has grown rapidly since 9/11, scholars have neglected to

assess individual-level extremist subgroups on social dimensions that could be useful for

detection. Understanding the origins, pathways, and associated psychosocial dimensions

unique to each lone extremist subtype may be a fundamental part of discovering effective

counterterrorist measures.

In this chapter, the following topics were covered: gaps within the literature, research problem, intent of the study, an examination of the research questions, hypotheses, and pertinent definitions. Lastly, assumptions critical to the meaningfulness of the study, limitations and boundaries, and implications for social change were also reviewed.

Background

Lone extremist attacks are harder to detect than group-based assaults and can pose an unique challenge to authorities. According to Richman & Sharan (2015), lone extremists, due to their unaffiliated nature in the conventional sense, are less visible and less exposed prior to their attacks. They have the advantage of going undetected because they are less likely to use electronic devices or other methods to communicate their intentions. Furthermore, because lone extremists do not come from a homogenous group, but rather a wide spectrum of ideologies and motivations, predicting these acts and actors has been difficult. To date, there is no single profile of a lone extremist. Individuals who engage in lone extremist behavior are oftentimes radicalized through a unique ideology. Existing research on lone extremism has been unproductive in establishing trait similarities among the various lone extremist divisions including far right, far left, Islamic, and ideological subtypes.

Although infrequent, lone extremist acts have been increasing in number (Gruenewald, Chermak, & Freilich, 2013) and have risen to the forefront of the public's awareness despite being a low-base-rate phenomenon (Gill & Corner, 2016). Due to their lax connectedness to the extremist group they identify with, these affiliates may be

called upon to act for the group. This has been most visible in the rise of Islamic State-linked lone attacks in the West such as the 2015 San Bernardino attack and the 2016 Orlando nightclub shooting. Their unaffiliated nature makes these types of attacks considerably more difficult for counter-terrorism efforts and most may remain off the radar using routine counter-terrorist surveillance (Leenaars & Reed, 2016).

Not only has a trend towards lone attacks begun to surface, but trends in attacker subtype have also begun to shift. For example, lone attackers with religious ideologies represented 40% of extremists from 2000 to 2011 but only 7% between 1970 and 2011 (START, 2014a). While religious groups have been on the rise since the 1970s, left wing and separatist affiliations have considerably decreased. Shifting disparities in subtype stress the importance of studying lone extremism by ideological subtype as opposed to a single entity.

While effort towards delineating lone terrorists by subtype has begun to appear in the research, gaps remain in comparing extremist subtypes on significant social and psychological dimensions. Instead, flawed approaches have been common in past research, for example, by clustering all lone extremist subtypes under the blanket term, *terrorist*. This study sought to bridge a portion of this gap by assessing the presence of significant differences of select psychosocial dimensions according to lone extremist subtype.

The four main subtypes of concern are those proposed by the PIRUS archival dataset. It contains data on violent and nonviolent lone extremists radicalized in the United States between 1948-2016 and includes 1,865 subjects (START, 2018). These

subjects are subdivided into four subtypes: far right, far left, Islamic, and single issue. The dimensions each lone extremist subtype will be measured on: (a) having a friend in a radicalized movement; (b) having a family member in a radicalized movement; (c) psychological/mental illness; and (d) substance use.

The expectation is that if homeland security and law enforcement have a wider understanding of the psychosocial affinities of lone extremists, they may be better equipped to circumvent these acts. Through research and education, family, friends, schoolmates, teachers, and neighbors of conceivable lone extremists can be made aware of who may be at risk for radicalization.

Problem Statement

Few researchers have attempted to understand lone extremism from a trait perspective by subtype. Again, this research investigates four psychosocial dimensions by lone extremist subtype: having radicalized family members, having radicalized friends, psychological/mental illness, and substance use. Existing research has been inconclusive on the impact of mental illness, substance use, and radicalized social supports in lone extremism. This study sought to improve understanding of the relationship between select psychosocial dimensions and far right, far left, Islamic, and single issue lone extremists. This and future research can affect counterterrorism approaches by pursuing lone extremism research from a multidimensional, multivariable standpoint.

Purpose of the Study

Conflicting and inconclusive research exists on the impact of mental illness, substance use, and radicalized social supports in lone extremists. Since considerable research on lone extremism has been based on case studies of single lone extremists, little is known about the psychosocial dimensions of extremist subtypes as a whole. The purpose of this quantitative research study was to assess if there is a statistically significant relationship between lone extremist subtypes (far right, far left, Islamic, and single issue) on four psychosocial dimensions (having radicalized friends, having radicalized family members, having psychological/mental illness, and having substance use issues).

Research Questions and Hypotheses

The following research questions and associated hypotheses guided this research:

Research Question 1: Is there a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype?

H_o1: There is no statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

H_a1: There is a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

Research Question 2: Is there a statistically significant relationship between having family members affiliated with radical activities and lone extremism by subtype?

H_o2: There is no statistically significant relationship between having family members affiliated with radical activities and lone extremism by subtype.

H_a2: There is a statistically significant relationship between having family members affiliated with radical activities and lone extremism by subtype.

Research Question 3: Is there a statistically significant relationship between mental illness and lone extremism by subtype?

H_o3: There is no statistically significant relationship between mental illness and lone extremism by subtype.

H_a3: There is a statistically significant relationship between mental illness and lone extremism by subtype.

Research Question 4: Is there a statistically significant relationship between substance use and lone extremism by subtype?

H_o4: There is no statistically significant relationship between substance use and lone extremism by subtype.

H_a4: There is a statistically significant relationship between substance use and lone extremism by subtype.

Conceptual Framework

A range of disciplines including criminal law, political science, military science, international relations, sociology, and psychology has studied terrorism. Within the

discipline of the social sciences, three approaches to studying terrorism have been identified: the sociological, psychological, and psychosocial (De La Corte, 2010).

According to De La Corte (2010), the first two approaches have received the most consideration historically. The sociological approach has attempted to study terrorism in terms of social dysfunction or conflicting trends in the social system of a lone extremist. Social learning perspectives have attempted to build on Sutherland's (1947) differential association theory, and criminology researchers have disputed the concept of small-group interaction and communication as primary drivers of criminal misconduct (Akers, 2009). Although social learning perspectives have rarely been applied to the study of terrorism, Akers and Silverman (2004) have argued that social learning perspectives have very clear connections in the study of terrorism. For example, Post, Sprinzak, and Denny (2003) found that children born into families who were active in radical ideologies were rapidly socialized into the same movements, but it was the social group that had a greater bearing on recruitment.

Many scholars have acknowledged a relationship between psychological illness and the propensity to commit a crime (LaFree, Jensen, James, & Safer-Lichtenstein, 2018). Though researchers have studied mental illness for decades, studies have failed to reach a consensus on its role in political behavior. Early terrorism research described terrorists as mentally unstable, insane, or psychopathic in order to carry out these acts (Pearce, 1977). Later research revealed that extremists with mental illness were equally able to organize their thoughts and execute attacks. For instance, Corner & Gill (2015) demonstrated that lone extremists with mental illness were just as likely to engage in a

range of rational attack planning behaviors as those without mental illness. Nijboer (2012) reported although some psychological pathology may be present in lone extremists, perpetrators of terrorism in general have been notably psychologically stable. On the other hand, Simi, Bubolz, McNeel, Sporer, and Windisch (2015) found that more than half of their sample (57%) reported suffering from mental illness at the time of their involvement in extremist groups and two-thirds (62%) of subjects reported attempting suicide and/or seriously contemplating suicide.

Another psychological variable that has been linked repeatedly to violence is drug and alcohol use. Duke, Smith, Oberleitner, Westphal, and McKee (2017) found the male gender, psychotic illness, and the combination of alcohol and illicit drug use all increased the relationship between substance use and violence. A medium effect size was found to be robust across different populations, substances, types of violence, and with both perpetration and victimization. Simi et al. (2015) found that 72% of lone violent extremists reported having used alcohol and/or drugs leading up to their act.

While sociological and psychological approaches have been useful building blocks in the development of terrorism research, a psychosocial approach to terrorism will be recognized in this research. This approach works from the premise that neither the individual psychology of a lone extremist nor his or her social environment have provided a complete explanation of why individuals become involved in lone extremist activity (De La Corte, 2010). The psychosocial approach of De La Corte's psychosocial principles of terrorism provide the theoretical basis of this research by addressing the

social and political influences, coupled with complex psychosocial dimensions amid lone extremist subtypes.

According to De La Corte (2010), some research argues for psychological justifications of lone extremism such as disordered or psychopathological personalities. However, this is an oversimplification of a complex phenomenon. De La Corte (2007) proposed seven principles in explaining terrorism:

(a) Terrorism must not be seen as a syndrome but as a method of social and political influence; (b) The attributes of terrorists are shaped by processes of social interaction; (c) Terrorist organizations can be analyzed by comparing similarities among other social movements; (d) Terrorism is only possible when terrorists have access to particular resources; (e) The decision to begin and sustain a terrorist operation is continually legitimized by an extreme ideology; (f) Every terrorist campaign involves strategic goals but the rationality in which terrorists apply to their violence is imperfect; and (g) The activity of terrorists partly reflects the internal features of their organizations (pp. 2-7).

Several basic themes emerge from De La Corte's seven psychosocial principles of terrorism relevant to this research. According to Vargas (2011), the first concept refers to a desire for lone extremists to exert political and social influence on friends and family. Research to support this theory should assess the frequency with which lone extremists have friends or family who are also involved in an extremist movement. Second, radicalization should be researched as a social movement. Research to test this idea should assess a potential connection between social interaction and psyche development.

Third, radicalization as ideology should be tested by evaluating aspects of the radical's psyche and social circle that promote beliefs, rejection of orthodox beliefs, and relinquish decision-making abilities to promote ideology (Vargas, 2011). Lastly, terrorism involvement as "rationality gone wrong" should be studied considering the psychological wellness of extremists. Rooted in Vargas' themes of De La Corte's principles, this research assessed the differences in frequency of having radicalized friends and family as well as rationality gone wrong considering the psychological wellness in the form of mental illness and the presence of substance use.

Nature of the Study

This research sought to understand differences in the frequency of four psychological dimensions among lone extremist subtypes (a) having radicalized family, (b) having radicalized friends, (c) mental health, and (d) substance use. In order to understand lone extremist subtype or group differences on these psychosocial dimensions, a chi-square analysis was used to test the relationship between the four lone extremist subtypes and four psychosocial dimensions previously outlined. Also, using SPSS crosstabulations, a multi-level contingency table was used to analyze the four categorical variables (far right, far left, Islamic, and single issue) by each psychosocial dimension (having radicalized friends, having radicalized family, mental illness, and alcohol/drug use). A crosstabulation analysis could potentially reveal, in frequency percentages, differences among lone extremist groups by psychosocial variable. Multiple chi-square tests for independence will be used to measure the statistical significance of the association among the variables involved. A chi-square analysis was chosen because

the variables being compared are categorical and consist of two or more

categorical, independent groups ("Chi-Square test", n.d.).

The dataset used for this research study is an open-source, archival dataset made

available by the National Consortium for the Study of Terrorism and Responses to

Terrorism (START). START is a subsection of the Department of Homeland Security

Center of Excellence led by the University of Maryland. While START is responsible for

many terrorism-related databases, PIRUS is the database selected in this study.

Definitions

In conducting this research, some unconventional terms were used. The

operational definitions and theoretical meanings relevant to this study are as follows.

Far left: This lone extremist subtype bases their beliefs on the equality and

uprising of excluded members of the population (START, 2018). Traditionally speaking,

far left extremists are generally driven to override the capitalist system, including the

United States government, and replace it with a system that empowers members of the

"working class" (START, 2018). Present day, the far left consists predominantly of

supporters of environmental protection issues and animal-rights.

Far right: This lone extremist subtype is classified by START (2018) as

possessing reactionary and revolutionary justifications for violent measures. This

subtype generally shows opposition with the political left and government entities. These

individuals may be linked to extremist religious groups such as Identity Christians, non-

religious racial supremacists such as the Creativity Movement and National Alliance, tax

activists, militias, gun rights advocates, or sovereign citizens (START, 2018).

Islamic: According to START (2018), this lone extremist subtype consists of a Sunni Islamist-Salafists populace whom practice a religio-political methodology. START (2018) described,

> For this project, we define "jihadism" as a militant methodology practiced by Sunni Islamist-Salafists who seek the immediate overthrow of incumbent regimes and the non-Muslim geopolitical forces which support them, in order to pave the way for an Islamist society which would be developed through martial power (p. 3).

Members of this subtype may identify with ISIS, the North American Islamic Trust (NAIT), or Jihadist movements, for example.

Lone extremist: Lone extremists have also been termed mass murderers, lone wolves, lone offenders, lone actors, lone lions, lone operators, freelancers, and lone extremists (Borom & Vossekuil, 2012). For purposes of this research and consistency, the phrase 'lone extremist' will be used throughout. Primarily, this phrase was selected because the PIRUS database employs this term. By definition, the PIRUS database codebook (START, 2018) details explicit inclusion criteria of lone extremism as,

> Individuals espousing Islamist, far right, far left, or single issue ideologies who have radicalized within the United States to the point of committing ideologically motivated illegal violent or non-violent acts, joining a designated terrorist organization, or associating with an extremist organization whose leader(s) has/have been indicted of an ideologically motivated violent offense (p.3).

Other inclusion criteria suggest the individual must have either been arrested, indicted of a crime, killed as a result of his or her ideological actions, was a member of a terrorist organization, or was associated with an organization whose leader has been indicted of an ideologically motivated violent offense (START, 2018). In addition, each individual must have been radicalized in the United States and had ideological motives.

PIRUS: PIRUS is the acronym for Profiles of Individual Radicalization in the United States. It is the sole database used in this research. It contains de-identified individual-level information of over 1,800 violent and non-violent extremists who adhere to far right, far left, Islamist, or single issue ideologies in the United States from 1948-2016 (START, 2014a). This dataset was coded entirely from public sources of information by researchers employed through the University of Maryland.

Possessing Radicalized Family Members: Variable number 92 used in the PIRUS database to assess if there is evidence in the sources that a subject had a family member involved in radical activities.

Possessing Radicalized Friends: Variable number 91 used in the PIRUS database to assess if there is evidence in the sources that a subject had a close friend involved in radical activities.

Psychological: Variable number 81 used in the PIRUS database used to assess if there is evidence in the sources that a subject had a history of mental illness.

Single Issue: The lone extremist subtype that consists of followers of a single concern as opposed to a broad ideology as noted in the other three terrorism subtypes. These individuals are also known as ideological extremists. Examples of single issue

extremists include anti-abortion extremists that were not motivated by traditional far right issues such as anti-government and race superiority and extremists with idiosyncratic ideologies, for example, Ted Kaczynski (START, 2018).

START: START is an acronym for the National Consortium for the Study of Terrorism and Responses to Terrorism. This organization is a division of the Department of Homeland Security. The goal of their research is to help facilitate a well-rounded understanding of terrorism, counterterrorism, and community resilience by bringing together the work of researchers among various disciplines.

Substance Use: Variable number 82 used in the PIRUS database used to describe if there is evidence in the sources that a subject had a history of alcohol or drug abuse.

Assumptions

The PIRUS database is an archival database. Due to the nature of this data, five assumptions are applicable. (a) The researchers who collected the original data made every effort to maximize the representativeness of the data using random sampling techniques (START, 2017b). (b) The researchers collecting information did so in an unbiased, non-interpretive manner recording only what was perceived. (c) The researchers documented all extremist ideologies in an organized and methodical manner not placing more emphasis on one subtype over another. (d) The information contained in the database was accurately transcribed. Human error is neither expected nor desired but it does happen during transliteration and coding. (e) Lastly, PIRUS is an open-source database available to the public in the form of an Excel document. In order to

statistically understand the relationships among variables, the database was converted to a SPSS file. The assumption is the dataset was accurately converted from the original form.

Scope and Delimitations

This study was designed to establish a greater understanding of the statistical differences of four psychosocial traits amongst far right, far left, Islamic, and single issue lone extremists radicalized in the United States between 1948 and 2016. In an effort to promote social change, I sought to produce some basic information as a movement toward a predictive model. However, this basic information alone cannot be used to predict lone extremists by subtype and should not be interpreted as having that capability.

A delimitation of this research was electing to use archival data as opposed to collecting raw data from participants or open sources, such as newspapers and other media outlets. Archival data was elected to minimize research biases, eschew researcher error, and to evade misappropriation of time. A second delimitation was choosing to research lone extremists radicalized only within the United States. Although lone extremism occurs worldwide, lone extremism is more widespread in the United States than in other countries. United States citizens orchestrated 80% of lone extremist attacks in the United States representing about 42% of all lone attacks (START, 2017b). The United States may have a grander need to understand these extremists because of the significant threat they pose.

Limitations

The study was subject to several limitations. (a) The PIRUS database is not a complete list of all persons who have been radicalized in the United States. However, the

PIRUS database was expected to be representative of this population. (b) Researchers managing the database note users should use caution, as the PIRUS database is not comprehensive when looking at collective rates on variables of interest. (c) While every effort was made to maximize the representativeness of the data using random sampling techniques, for reasons outside of PIRUS researchers' control, the data may not be symbolic of radicalization at all points on an time spectrum (START, 2018). For example, reliance on open sources like newspapers, media reports, and magazines may reflect news reporting trends over time. Also, a focus on a particular ideology may occur after a catastrophic event like 9/11, making it increasingly easier to identify individuals who are associated with this subtype. (d) PIRUS database involves missing information. For instance, values of -99 and -88 represent missing information. -99 indicates researchers were unable to locate this particular piece of information; whereas -88 indicates that, for a certain observation, the value was not applicable. (e) The dataset and thus this research were without a control group of non-lone extremists, therefore the data cannot accurately identify predictors or indicators of lone extremism.

Significance

The ultimate goals of this and subsequent related research include (a) programmatic support in recognizing and deradicalizing, (b) developing community education and training procedures on detection, and (c) developing community resilience programs to minimize damage. If researchers and law enforcement are able to understand the psychosocial dimensions that may facilitate lone extremism, as a society, we may be

better able to deflect, prevent, or identify these individuals prior to radicalization. This, in turn, could help secure United States citizens.

By understanding the psychosocial affinities of lone extremists, law enforcement and homeland security may be more capable of circumventing their acts. Through research efforts, friends, family members, and teachers of possible lone extremists could be educated on risk factors and red flags of extremist-type traits. Once detection methods are improved and predictive models are in place, persons close to potential violent extremists could alert the proper channels like the police to circumvent conceivable attacks. With the findings of this study, researchers could continue to expand the literature and perhaps provide predictive power in identifying lone extremists before they strike.

Summary

In summary, this research sought to investigate significant differences of psychosocial variables by lone extremists by subtype. The primary goal of Chapter 1 was to introduce the study, the theoretical underpinnings, research questions, and procedures. The goals of Chapter 2 were to (a) summarize, and present a critical synthesis of, previous research on the psychosocial variables selected for this research on lone extremism, and to (b) justify how this study addressed the gap in the literature. Chapter 3 includes a comprehensive account of all design aspects and procedures of this study. The study's main findings are revealed in Chapter 4 and in Chapter 5 the study's findings were discussed in light of the research questions, literature review, and conceptual

framework. The chapter also reflected upon the contribution this research could make to

the field of study and recommended future research.

Chapter 2: Literature Review

Lone extremist acts have caused significant societal alarm despite their low level of occurrence. Not only do these attacks pose physical threats, they also come with significant social and financial costs. Within the United States, there has been an increase in spending on counterterrorism measure research (Danzell & Zidek, 2013). More concerning is that these attacks are on the rise in both the United States and in Western Europe (Spaaij, 2012; Teich, 2013). According to Spaaij (2012), 198 lone extremist attacks were carried out between the 1970s and late 2000s. Of these, the United States alone saw a 45-incident increase. Not only is the number of attacks increasing, but also the United States is believed to be the most targeted country, accounting for 63% of all attacks between 1990 and 2013 (Teich, 2013).

To better understand this phenomenon, this research sought to analyze the archival data in the PIRUS database for trends in profiles among lone extremist subtypes. Bakker and De Graaf (2011) wrote that lone extremist acts should be considered "black swan", unpredictable, or unforeseen events and while they have been difficult to categorize, most display a degree of commitment to and identification with a specific movement. These authors argue that studying extremist subtypes can provide leads for preventing new rounds of radicalization.

Synopsis of the Current Literature

Contradictory, inconclusive, and significant gaps in the research exist on the relationship between mental illness, substance use, and having radicalized social supports by lone extremist subtype. Since considerable research in this area has been based on

qualitative, case studies of single lone extremists, little is known about the dimensions of lone extremist subtypes as a whole (Douglas, Burgess, & Burgess, 2011). This quantitative research study compared lone extremist subtypes on four psychosocial dimensions. However, before that work is explored, a briefing of current research will be discussed.

Mental Health

Mental illness as the sole predictor of group or lone extremism is not well supported. Generally speaking, terrorist networks appear to avoid recruiting people with mental illness because they may be viewed as unreliable or unstable (Gill et al., 2014; Spaaij, 2012; Pantucci, 2011). Psychological impairment could certainly be selected against when an individual is attempting to join a terrorist group organization. This may inadvertently drive a mentally ill individual to act out independently.

Nonetheless, data on the presence of mental illness among lone extremists is persuasive. For example, Gruenewald, Chermak, and Freilich (2013) compared far right group and lone offenders and found mental illness prevalence occurred five fold in the lone group versus group offenders. Simi et al. (2015) found 57% of their sample reported suffering from mental illness at the time of their involvement in an extremist group. Gill, Horgan, & Deckert (2014) found 32% of their lone extremist sample had a history of mental illness or a personality disorder. These figures on the prevalence of mental illness exceed the incidence of illness within the United States in the general population. According to the National Alliance on Mental Health (NAMI), 18% of the general

population suffers from a diagnosable illness (Any Mental Illness (AMI) Among Adults, n.d.).

Despite advancements in terrorism research, mental illness as a variable for describing extremist behavior remains dichotomous, a quality that was discarded among other disciplines. According to Hiday and Burns (2010), disproportionately high levels of antisocial personality disorder and substance use may distort or inflate levels of mental illness in samples. These inflations may be misleading in accordance with the attitudes and beliefs the general population has about mental illness.

Despite this limitation, many researchers continue to uncover greater instances of mental illness among lone extremists (Gruenewald et al., 2013) while other researchers have discredited a relationship between mental illness and terrorism. Weatherston and Mornan (2003) found no evidence to support a relationship between mental health and participation in lone extremist activity. Likewise, some research has revealed no statistical difference in the presence of mental illness among lone extremists as compared to the general public (Corner & Gill, 2017). Corner and Gill (2017) suggested the number of Islamic lone offenders in past statistics may elevate figures on the presence of mental illness due to the severity of this subtypes' attacks within the United States. Poor media coverage and the tendency to overuse mental illness as a 'silver-bullet' explanation may also be confounding factors. Nonetheless, contradictory evidence on the presence of mental illness among lone extremist still exists. Furthermore, no research to date has attempted to compare rates of mental illness among lone extremist subtypes to see if select subtypes may possess a higher frequency of illness than others.

Substance Use

Research within the field of psychology supports a clear connection between mental illness and substance use, but their association to lone extremism is still not well researched. Twenty million adults in the United States have faced a substance use disorder and 50.5% or 10.2 million individuals have co-occurring mental health and substance use disorders (Hedden, 2015). In the research of Simi et al. (2015), 72% of lone violent extremists reported having problems with substance use. Conversely, Gill et al. (2014) found only 22.7% of lone extremists in their sample had substance use issues. With such a sizable span in the incidence of substance use, it may useful to know why such variability exists. This writer suspects, like with mental illness, examining lone extremists by subtype may provide rational for this variability. For instance, a heavy incidence of substance use in far right extremists may become diluted when combined with other extremist subtypes.

The presence of substance use by lone extremist subtype may be one of the most understudied variables of those included in this research. This may be due, in part, by one of the limitations discussed above. Substance use is, theoretically speaking, a mental illness and is classified as such in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5). However, for purposes of research, it may be useful to define each separately as they are very distinct disorders in terms of diagnostics, comorbidities, and treatment. Also, the general public may be less likely to consider substance use as mental illness as opposed to illnesses such as Schizophrenia or Bipolar I Disorder, for example. Inclusion of such, as Hiday and Burns (2010) noted, may

unintentionally distort levels of mental illness. Defining substance use apart from mental illness may prevent misrepresentation and distortion in frequency data.

Social Network

There is evidence to suggest individuals with substance use and/or mental health disorders may be more susceptible to extremist ideology. For instance, in lone extremists where mental illness is present, individuals appear to be more readily influenced by their immediate social networks (Corner & Gill, 2015). The influence of social forces, family, and friendship in the path towards radicalization has received some attention. Available research suggests individuals are being recruited towards an ideology via their personal contacts and trusted confidants (Schwartz, Dunkel, & Waterman, 2009). As Corner & Gill (2015) illustrated, lone extremists suffering from a mental illness, independent of subtype, were over 18 times more likely to have a spouse or intimate partner involved in a wider, group ideological movement than those without a history of mental illness. However in their later work, Gill & Corner (2016) found lone violent extremists were no more likely than the general public to possess a spouse involved in a violent political movement. Past research, although inconclusive, suggests the possibility of a relationship between lone extremism subtype, mental illness, and radicalized social supports.

While some inquiry has been done to assess the social supports and mental wellness of lone extremists via case studies, few have attempted to study these variables on a group level delineating by lone extremist subtype. This research will assist in

narrowing this gap. In the remainder of this chapter, I review the research strategy, conceptual foundation, and literature significant to my study.

Research Strategy

Databases

In light of the research gap, I reviewed sources published from January 1970 to October 2018 from the following series of databases: Academic Search Complete, PsycINFO, PsycARTICLES, International Security and Counter Terrorism Reference Center, PsycEXTRA, SocINDEX with Full Text, SAGE Journals, Homeland Security Digital Library, Inter-University Consortium for Political and Social Research Datasets (ICPSR), and related subject databases such as SocINDEX with Full Text, ERIC, CINAHL, Premier, Google Scholar, and ProQuest Central.

Research Age

The APA recommends that the most up-to-date research should be used in dissertations. However, this standard may vary depending on the field of inquiry. Some areas of study develop faster than others, and some information remains relevant while other, newer information may become quickly outdated. With that being said, I chose to include a few articles over 10 years old. My reasoning was to capture the iterative process that has taken place over time within the field. Terrorism, while highly researched, has suffered in terms of methodology, reliability, as well as with conceptual and theoretical flaws. This is true of both early and late studies. Some benchmark and constructive research was done by earlier researchers, but their work was not excluded due to age.

Research Terms and Inclusion

Lone extremists and the psychosocial variables in this study have been given many designations. The search terms used in this inquiry included *terrorism, loner, lone wolf terrorism, lone wolf, lone wolf terrorist, domestic terrorism, terrorism threats, self-radicals, lone extremist, lone wolf extremist, lone actor, lone violent extremist, mental health, mental illness, typology, psychological, psychology, psychopathology, substance use, substance abuse, drug use, drug abuse, drug dependence, polysubstance use, polysubstance dependence, alcoholism, radicalized friends, radicalized family, radical social supports, far right, far left, single issues, ideological extremist* and the variants of each term listed. The keywords of applicable articles led to discovering more resources. To ensure an in-depth search, I also reviewed published doctoral dissertations, non-peer-reviewed articles, and other relevant publications.

Only research articles that met the following selection criteria were considered: (a) the article or book was considered relevant to the current research inquiry; (b) the article or book was full-text and available for review online, or made available by Walden University or other library staff; (c) all publications had to be in English; and (d) the article or book was determined reliable as measured by the expertise of the author and the vetting standards of the publication. These criteria produced valuable search results.

Conceptual Foundation

Lone extremism is a multidimensional phenomenon, and although no single theoretical perspective can provide an all-inclusive account of these acts, it is important to advance theories that can explain some aspects or forms of terrorism (Schwartz et al.,

2009). Diverse pathways and mechanisms are at work and may operate uniquely in different lone extremist subtypes. Not only are lone extremist subtypes hypothesized to be symptomatically unique; the manner in which they are studied should be as well.

Lone and group extremism have been studied by various disciplines including psychology, criminal justice, military, sociology, and beyond. Within the social sciences discipline, three main approaches have been adapted: sociological, psychological, and psychosocial (De La Corte, 2010). As noted in Chapter 1, a sociological approach aims to study terrorism in terms of social dysfunction or conflictive trends within the social system of a lone extremist. The psychological approach looks at individual psyche dysfunction in terms of mental illness and substance abuse and their influence on the individual. A psychosocial approach works from the premise that neither the individual psychology of a lone extremist, nor their social environment can individually account for why individuals become involved in lone extremist activity (De La Corte, 2010). The psychosocial approach of De La Corte's psychosocial principles of terrorism will provide the theoretical basis of my research. This approach adopts the premise that political influences, coupled with complex psychosocial dimensions, can advance theory on lone extremism.

While prior research suggest no single pathway or explanatory theory exists applicable to all lone extremist subtypes; a main conclusion infers terrorism can be explained as a psychosocial occurrence (Bjorgo, 2005; De La Corte, 2007). The premise that terrorism can be explained as a psychosocial phenomenon is a persuasive argument on a number of levels. According to Vargas (2011), it corresponds with research that

concluded extremism is the result of personal pathology and social variables, a notion at the core of De La Corte's psychosocial principles of terrorism (Vargas, 2011). From these principles, five main concepts emerge. The first implicates the notion that lone extremists may exert political and social influence on their social surroundings, including friends and family. Research to support this concept should look for frequency measures of lone extremists possessing friends or family also involved in a terrorist movement. Second, radicalization should be researched as a social movement, again, looking for a connection between social interaction and psyche development. Third, radicalization as an ideology should be examined urging researchers to look for aspects of the extremist's psyche and social circle that promote beliefs, rejection of orthodox beliefs, and relinquish decision-making abilities to promote ideology (Vargas, 2011). Lastly, according to Vargas (2011), radicalization as rationality gone wrong should be explored studying the psychological wellness of the lone extremist. This research will focus specifically on the presence of psychosocial influences such as mental health, drug/alcohol use, and possessing radicalized friends and family by lone extremist subgroup. A psychosocial approach offers a descriptive framework for researchers, law enforcement, and policymakers by explaining aspects of the mental wellness and social ties of lone extremists by subtype.

Literature Review

Conflicting and inadequate research still remains on the position of psychological health and radicalized social supports in lone extremism. Nonetheless, research does suggest social and psychological factors may play a key role. Weenick (2015) noted a

focus on the individual psychology of lone extremists could compliment existing social-psychological approaches of radicalization. For instance, LaFree et al. (2018) discovered variables related to social learning (radical peers), social control (lack of stable employment), psychological perspectives (history of mental illness), and criminal history all have significant bearing on joining an extremist ideology.

Support also exists on studying lone extremist subgroups as separate entities and comparing differences among subgroups on a number of variables. For instance, Gill et al. (2014) found significant differences among extremist profiles of al-Qaeda, right-wing, and ideological lone extremists in areas such as relationship status, having radicalized ties, having children, and past criminal convictions. Differences were also found between subtypes in terms of a history of mental illness. According to Gill et al. (2014), over half of their ideological sample of lone extremists had a history of mental illness, while a lesser presence was found among the religiously motivated.

An understanding of the underlying mechanisms that may lead individuals towards radicalization has extensive security and economical interests. For example, a clearer conceptualization of how these individuals operate can help prevent acts by identifying those at risk to offend and employing deradicalization measures. Hence, it is critical for police and government officials to have the knowledge to detect patterns within known extremists to expose others proactively. In turn, fewer instances of extremist violence may also lead to a lesser financial burden on researching and preventing such acts.

Limitations of Terrorism Research

Terrorism research did not originate post 9/11 (Chermak, Freilich, Parkin, & Lynch, 2012), but investigations on this topic have grown exponentially since this tragedy. Much of the research, specifically in former years, has been descriptive. These inquiries depicted the individual lives of lone extremists in case study and narrative form. Some articles have compared one or more lone extremists on demographic, psychological, and social traits. In more recent years, there has been a movement towards more sophisticated statistical techniques as opposed to case study work. This movement can be partly accredited to the development of databases that contain raw data on extremists including the RAND Database of Worldwide Terrorism Incidents (RDWTI), Global Terrorism Database (GTD), and the Profiles of Individual Radicalization in the United States (PIRUS). These databases allow researchers to study lone extremists in a qualitative, refined manner.

Other concerns about the quality of past research have been raised. These concerns were focused on the theoretical and conceptual frameworks used and their lack of statistical vigor. Victoroff (2005) reviewed the psychological theories of terrorism within the literature and concluded that there were more theories than empirical studies. He remarked that current research is largely flawed and rarely based on scientific methods with appropriate controls and hypothesis testing (Victoroff, 2005). He also noted approximately 65% of published articles were literature reviews and inferential statistics were used in only about 10% of post 9/11 research as compared to 3% pre 9/11. Despite increases in reliability and validity over time, terrorism research lags behind other applied

areas (Chermak et al., 2012). The remainder of this chapter will explore what is known about the psychological health and social connectedness of lone extremists.

Lone Extremism and Mental Health

Terrorism researchers have been studying the relationship between mental illness and terrorism for years, but have yet to reach unanimity (LaFree et al., 2018). The psychological dimensions of lone extremism are of particular interest to psychologists, researchers, and government officials who would like to be able to predict and prevent these acts (Hudson, Majeska, Savada, & Metz, 1999).

Evidence suggests the frequency of mental illness amid lone extremists is considerably higher than group-based extremists. The findings of Spaaij (2011) support this difference. More precisely, the likelihood of a lone extremist having a mental illness is 13.49 times higher than a group extremist (Corner & Gill, 2015). Hewitt (2003) also found disparities in the prevalence of mental illness among extremist group and lone actors (8.1% vs. 22%). Clearly differences exist among group and lone extremists, however, exploring this conception in more detail is beyond the scope and focus of this research.

Despite a general agreement that lone extremists are more apt to suffer mental illness than their group counterparts, there is less unanimity about the prevalence of illness in lone extremists as compared to the general population. Once believed to have been the result of a psychopathological process, evidence linking lone extremism and psychopathology in the 1970s dismissed this belief (Pearce & Macmillan, 1977). Although lone extremists may not suffer with psychopathology, the presence of mental

illness may be a contributing factor in the complex pathway of lone extremism (Gill & Corner, 2016).

In the 1980s, psychoanalytical approaches to lone terrorism described these individuals not as aggressive psychopaths depicted in the media, but as uncertain, emotionally damaged youths who fell victim to parental rejection leading to a delay in adult identity formation (Victoroff, 2005). A causal relationship between mental illness and terrorism has been discredited (Weatherston & Moran, 2003). Once the accepted view, according to Weatherston & Mornan (2003), there is no evidence to support a connection exists between an individual's mental health and their participation in lone violent activity. Some researchers have concluded terrorists are psychologically stable (McCauley & Moskalenko, 2011; Nijboer, 2012). A drawback of the current research and inconsistent findings in the role of mental illness may be related to the lack of delineation of subjects by ideological subtype. Grouping all lone extremist subtypes under one subheading could potentially dilute the presence of mental illness within a particular subtype.

While the majority of studies did not delineate by lone extremist subtype, as a whole, considerable research has uncovered a greater presence of mental illness as compared to the general population. According to NAMI (n.d.), the presence of any mental illness (AMI) is postulated to be around 18% among adults. AMI is defined as a mental, behavioral, or emotional disorder ranging from mild to severe (NAMI, n.d.). Pitcavage (2015), despite the limitations of his small sample, uncovered 20% of his lone extremist subjects suffered a degree of mental illness ranging from moderate to

substantial and another 11% were suspected of possessing some degree of mental illness but had not been formally diagnosed. Similarly, Gruenewald et al. (2013) found more than 40% of lone extremists within their subject pool had a current or previous mental health diagnosis. Meloy & Gill (2016) uncovered 41% of their lone extremist subjects suffered a history of mental health problems some time in the course of their lives. Fifty-seven percent of Simi et al.'s (2015) sample reported suffering from mental illness at the time of their involvement in their extremist activity. Additionally, Gill, Horgan, & Deckert (2014) found 32% of their lone extremist sample had a history of mental illness or a personality disorder. Also noteworthy, the majority of these subjects were diagnosed before becoming involved in terrorism-related activities. In these studies alone, a substantial range from 23% to 57% was reported. Delineating by lone extremist subtype may help explain a portion of this variability.

More recently, researcher have embraced the idea of studying lone extremists by subtype. Weenick (2015) studied the presence of behavioral issues and mental disorders in a sample of radical Islamists that were known to the police in the Netherlands as actual or potential 'jihadists'. Sixty percent of the sample had an identifiable psychosocial problem and one in five presented with serious problem behavior or had been diagnosed with a personality disorder or other mental illness. In another 20 individuals, signs of serious problem behavior, or indications of a mental illness but no formal diagnosis were noted. While some researchers have chosen to focus their attention on a single subtype, significant gaps still exist in comparing extremist subtypes.

Discrepancies in the frequency of mental illness among religiously inspired lone extremists have been examined. De Roy van Zuijdewijn & Bakker (2016) found the lowest rate of mental illness to be among religiously inspired lone extremists. Fifty percent of lone extremists, within their sample, were considered socially isolated and only 17% of subjects were thought to be free of any mental health issues. There is also budding evidence to suggest disparities amongst far right offenders and white supremacists. Gruenewald et al. (2013) compared homicide rates completed by far right lone extremists with homicides completed by other far right extremists in the United States. These researchers found 40% of far right lone extremists reported a history of mental illness as compared to only 8% in the other far right extremist sample. Differences were also found among groups. Simi et al. (2015) found, among white supremacists, elevated rates of several factors including mental illness (57%) at the time of their involvement in extremist acts.

In a more sophisticated study, Corner and Gill (2015) utilized a dataset of 119 lone-actor terrorists and a matched sample of group-based terrorists in order to replicate the Gruenewald et al. (2013) study. Their goal was to measure the frequency of mental illness across a sample of extremists that contained single issue ideological motivations versus a far right ideology. These researchers also partitioned their sample by those with and without mental health diagnoses and assessed whether there were distinct characteristic, behavioral, or comorbidity differences between them. These researchers found, in addition to confirming the findings of Gruenewald et al. (2013), lone extremists

with a history of mental illness were more likely connected with single issue ideologies than al- Qaeda inspired or extreme right-wing ideologies.

A similar outcome was observed in the research of Post, Sprinzak, and Denny (2003) who found no evidence of Axis I disorders on psychiatric evaluations of 21 secular and 14 radical Islamic Middle Eastern terrorists. This research provides even greater support of disparities in the prevalence of mental illness by lone extremist subtype. Lastly, according to descriptive measures published by START, differences do exist among far right (10.6%), far left (4.6%) and Islamic (12.5%) subtypes in terms of mental illness (START, 2017c). Please use caution, however, in interpreting these figures, as they do not reveal if these differences are statistically significant.

Throughout of the course of this section, mental illness has remained undefined within research articles. This may be due, in part, to the limitations or lack of expertise of individual researchers attempting to apply a diagnosis based on a secondhand account of symptomology, then coding it into a database. Also, the amount of information available from secondary sources such as news reports and other media outlets limits researchers. Also, much of the past and current research has treated mental illness as a static, dichotomous occurrence, which it is not.

Despite the dichotomous nature of the variable mental illness in much of the research, Corner & Gill (2015) attempted to fill this gap. These researchers created and coded a list of mental health diagnoses following an extensive examination of the literature available on lone extremists. They compiled a list of illnesses most prevalent among lone extremists. The illnesses uncovered were as follows: traumatic brain injury,

drug dependence, schizophrenia, schizoaffective disorder, delusional disorder, psychotic

disorder, depression, bipolar disorder, unspecified anxiety disorders, dissociative

disorders, obsessive compulsive disorder, post traumatic stress disorder, unspecified sleep

disorder, unspecified personality disorder, and autism spectrum disorder (Corner & Gill,

2015). Of these disorders, three were more prevailing among lone extremists as

compared to the general population. These illnesses were listed as schizophrenia, autism

spectrum disorder, and an unspecified personality disorder (Corner & Gill, 2015).

Despite the evidence presented here, many researchers continue to discredit a

causal relationship between mental illness and terrorism (Weatherston & Moran, 2003).

Implying mental illness causes lone extremism is a damaging oversimplification, but

denying a relationship exists is as well. Pitcavage (2015) noted although lone extremists

seem to have a higher incidence of mental illness than the general population; significant

statistical differences may not be present.

In closing, mental illness does not provide a monocausal explanation of lone

extremist behavior. Acknowledgement that radicalization is likely a culmination of

several risk factors should be recognized. For instance, Gill's (2015) work with lone

extremism highlighted various cases where the individual's mental illness acted as a

background risk factor, but not a driving force. Combined with a number of other

psychosocial stressors, mental illness may be a driving force towards radicalization.

Other prospective risk factors that will be examined below include substance use and

possessing radicalized social supports.

Lone Extremism and Substance Use

The relationship between lone extremism and the presence of substance use yielded few research results. One of the few articles that considered this relationship was the Gruenewald et al. (2013) article. These researchers hypothesized that far right lone extremists were significantly more likely to possess substance abuse issues as compared to other far right offenders. However, their hypothesis was not well supported and no significant differences across far right affiliations were found in terms of drug or alcohol use. More simply, when comparing far right lone extremists and other types of far right extremists in the United States, significant differences in the rate of substance use were not found.

According to Gill et al. (2014), very few (4.2%) of the lone extremists in their sample used drugs or alcohol in the commissioning of a terrorist attack, however, more than a fifth (22.7%) had a history of substance use. Also noteworthy, these researchers found significant differences between lone extremists who successfully executed an attack versus those who did not and their use of substances. A cited earlier, Simi et al. (2015) illustrated elevated rates on multiple factors including substance use (49%) among white supremacists. In similar research, Bubolz and Simi (2015) interviewed 34 former white supremacists and found 58% of their sample suffered from substance use issues. In a comparative study, Horgan, Gill, Bouhana, Silver, & Corner (2016) found lone extremists were less likely to suffer with substance use issues as compared to lone mass murderers.

Despite the remarkable gap in the literature on substance use and lone extremism, one article was found comparing lone extremist subtypes in on substance use. Jensen & LaFree (2016) in their final report entitled the Empirical Assessment of Domestic Radicalization noted discrepancies among lone extremist subtypes and substance use. According to their data, the following percentages were revealed: Islamist (7.6 %), far right (10.1 %), far left (5.6 %) and single issue/ideological (4.2 %). These calculations represent the percent of lone extremists where evidence of drug/alcohol use was gathered. And as a means of a baseline, the World Health Organization (WHO) estimates the worldwide presence of drug and alcohol use disorders to be around 5.4 % (Hedden, 2015).

A notable concern in this area of research involves the unfortunate gesture of lumping substance use disorders under the general heading of mental illness in several studies. This can complicate figures on the presence of substance use. Still, others may argue drug and alcohol use in this population should be expected to remain low due to its impact on judgment and decision-making when planning and perceptiveness are key.

A variable that has been consistently linked to drug and alcohol use within the literature is violence. Not all lone extremists act out violently, but differences among those who act out violently and those who do not are worth further investigation. Researchers Duke, Smith, Oberleitner, Westphal, & McKee (2017) constructed a synopsis and meta-analysis of the relationship between alcohol, drugs, and violence. They found variables such as being male, suffering from a psychotic mental illness, and combined alcohol and drug use all increase the relationship between substance use and

violence. A medium effect size was found to be robust across different populations, substances, types of violence, and in both perpetration and victimization roles (Anderson, 1997).

A thorough review of substance use and lone extremism yielded very few results. Like mental illness, substance use does not provide a monocausal explanation of lone extremist behavior. Combined with other factors, the presence of mental illness and substance use could provoke a momentum towards extremist ideology and violent acts. Other potential traits that are of interest and will be assessed below include possessing radicalized social supports including family and friends.

Social Supports of Lone Extremists

Social learning researchers highlight the role of social influence on criminal behavior (Akers, 2009). Within the context of lone extremism and other criminal behavior, learning can take place through the process of observation, imitation, and reinforcement processes (Aker, 2009). An individual's social supports can influence behavior by means of a fear of exclusion, a desire to be included, and an aspiration for being accepted. Individuals are shaped and influenced by their peer group and the significance of these relationships molds their behavior. With this being said, an examination of the role of social supports among lone extremists is essential.

Frequently, lone extremists will confide in family or friends of their extremist plans prior to their act. According to the research of Gill et al. (2014), 63.9% of the lone extremists in their sample verbalized to family or friends their plan to engage in terrorist activities. While some extremists confide in their social contacts, others are suspected of

suffering from social deficits. Many lone extremists suffer from a degree of social ineptitude and to varying degrees, have few friends and social outlets (Spaaij, 2010). Still some lone extremists may suffer problems with interpersonal relationships that are acute and nonchronic. In many individual lone extremist cases, social isolation was not a chronic issue, but instead a product of remote interpersonal conflict, while others may suffer long-term deficits (Spaaij, 2010). For instance, in the Gill et al. (2014) sample, over 30% of their subjects reported problems in close personal relationships (e.g., family and romantic relationships) and of this subsample 37 individuals or 32.4% experienced these difficulties within the 6 months prior to their extremist act.

Understanding the connection between lone extremists and their social network can help researchers calculate the role conformity, social identity, and social deficits may play. Below, the role of connectedness, social neglect, and social rejection by family and peer groups will be explored. Then, the research on having radicalized friendships will be considered.

Radicalized Family

The connection between familial radicalization and lone extremism is still in its infancy. Post et al. (2003) found children born into families who were active in radical ideologies were rapidly socialized into the same movement and beliefs, but it was the social group that had the greatest bearing on recruitment. Hafez (2016) noted terrorist organizations recruit entire families because they rely on the trust and interpersonal connectedness for their existence. These ties can promote a socially fueled and maintained movement towards their cause. Furthering their numbers and movement, Morrison and Gill (2016), discovered radicalized family members recruit from within the family by socializing relatives to the group, the group ideals, and goals.

Certain lone extremists may be motivated towards extremist acts in the name of their parents and the injustices their families have faced. Omar Rezaq, a member of Abu Nidal, played a key role in hijacking an EgyptAir plane, which was forced down in Malta in 1985 (Post, 2010). It was reported Rezaq shot five hostages, two Israeli women, and three Americans before SWAT intervened and elevated that number almost tenfold. According to Post (2010), Rezaq's mother lost her home twice. First at 8 years old in 1948, she and her family were forced to flee their home in Jaffa, to the West Bank where they lived a comfortable life until 1967. Then, when Omar Rezaq was only 8 years old, as a consequence of the 1967 war, they were forced to flee the West Bank to a refugee camp in Jordan. Rezaq's mother was bitter. During Rezaq's upbringing in the refugee camp, the battle of Karameh occurred and the spirit of the revolution was building. Rezaq and his classmates were told by their teachers the only way to become a man was

to become a soldier of the revolution and fight for their stolen lands taken from their parents and earlier ancestors. In childhood, Rezaq began preparation to become a fighter for the cause and was instilled with the position victimization. Rezaq saw Israel as the cause of his family's hardships and took on this fight for his family.

There has been a movement away from the view lone extremists are emotionally damaged youths who fell victim to parental rejection leading to adult identity formation delay (Victoroff, 2005). Not all lone extremists are single, socially awkward, isolative males. In fact, many lone extremists may have families and children. According to Gill et al. (2014), over 24% of lone offenders in their sample had spouses or life partners that were connected to a network of the same ideology that motivated the lone extremist.

A lack of further information here is a reflection of a need for more research. To date, no researcher has attempted to study differences in frequency of having radicalized family members by lone extremist subtype. In doing so, authorities may hypothetically be able to detect trends of extremisms by kinship.

Radicalized Friendships

Socially secluded, disillusioned young men may turn to extremism in their search for identity, acceptance and purpose (Bizina & Gray, 2014). According to Bizina & Gray (2014), the upsurge of domestic terrorists has two critical components. The radicalization and the makings for such are derived from the society in which these young men live. Peers may inadvertently reject latent extremists due to their awkward nature and social shortfalls. In turn, society may unintentionally push latent extremists to look for other social opportunities like extremist connections. It may be important to point out at this

junction, the motivation of a lone extremist to act out, in many cases, is as a result of perceived transgressions against them personally or against the cause for which they are affiliated. Despite their motivation, socialization may be a key consideration in the development of lone extremists.

As outlined above, oftentimes, lone extremists suffer from social ineptness and social isolation (Spaaij, 2012). On the contrary, radicalized networks and individuals appear to influence potential extremists with existing member actions or influence. Hence, although lone extremist have been traditionally thought of as social deviants and isolative, their social surroundings may heavily influence their belief system and affiliation. According to Endal (2018), it is relevant to note that lone extremists rarely if ever radicalize in total isolation. In the pre-9/11 era, radicalization of lone extremists occurred primarily through extremist groups and other formal social organizations. Post 9/11, a shift towards online environments and other informal social networks like Facebook became the trend (Endal, 2018).

In fact, social media may be a key determinate in the radicalization process towards Islamic extremism. According to Benigni, Joseph, & Carley (2017), the Islamic State of Iraq and Al-Sham (ISIS), continues to use social media as a fundamental method to motivate support. On Twitter, ISIS has a unique capacity to influence unaffiliated sympathizers to retweet propaganda (Benigni et al., 2017). This has been recognized as a primary method in their success in motivating lone extremists. In addition, ISIS uses small teams of social media users to lure potential recruits with a lot of attention then moves the conversation to more protected online platforms (Benigni et al., 2017). For

many, the social ties that flourish on Twitter or Facebook may be the place where
recruitment begins.

Summary and Conclusions

Despite demands for research on comparisons of lone extremist subgroups, there
have been no know empirical comparisons to date. Developing a comparative model that
uncovers variances in psychosocial factors may have implications in identifying a lone
extremist before they act. Early detection has considerable national security advantages.
These high profile and challenging to detect acts may be better understood if researchers
had a general understanding of their psychosocial underpinnings. The prominent
shortcoming of past lone extremist research has been the lack of delineation by extremist
subtype. Studying lone extremism as an umbrella phenomenon is as useful as with
attempting to understand violence as a blanket occurrence. Violence can take many
forms: domestic violence, sexual violence, elder violence, criminal violence, violence in
warfare and more. Like violence, extremism also exists in various forms and deserves to
be studied and observed as such.

Developing a typology, while still an imperfect tool, can provide a valuable
framework for understanding the complex patterns of lone extremism. And while the
dividing lines between types of lone extremists may not always be clear, they are a useful
step away from a one-size-fits-all model. This and future research should seek to
understand and detect commonalities and variances among extremists subtypes.
Constructing an understanding of lone extremist psychology is fundamental in order to

construct successful counter-terrorist strategies (Post, 2010). Next, Chapter 3, the

research design, data collection, and data analysis are described.

Chapter 3: Research Method

Lone extremist typology should be fundamentally reconsidered (Schuurman et al., 2018). As indicated in Chapter 2, current beliefs about lone extremists are based on conceptually and methodologically questionable assumptions and research. For instance, many individuals labeled "lone extremists" have interpersonal, political, or operational ties to larger terrorist groups (Schuurman et al., 2018). But, the problem is greater than being mislabeled. Current research has failed to assess lone extremism by subtype, making the assumption that all extremist types must be uniform. Hence, published article have failed to recognize typologies that may emerge when delineating lone extremism by subtype. This research sought to assess whether there was a significant relationship between select psychosocial variables and far right, far left, Islamic and single-issue extremists. In this chapter, the study design and how the data were collected and analyzed are examined.

Research Questions

The research questions and hypotheses that guided this research are as follows:

Research Question 1: Is there a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype?

H_o1: There is no statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

H_a1: There is a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

Research Question 2: Is there a statistically significant relationship

between having family members affiliated with radical activities and lone

extremism by subtype?

H_o2: There is no statistically significant relationship between between having

family members affiliated with radical activities and lone extremism by

subtype.

H_a2: There is a statistically significant relationship between between having

family members affiliated with radical activities and lone extremism by

subtype.

Research Question 3: Is there a statistically significant relationship between

mental illness and lone extremism by subtype?

H_o3: There is no statistically significant relationship between mental illness

and lone extremism by subtype.

H_a3: There is a statistically significant relationship between mental illness and

lone extremism by subtype.

Research Question 4: Is there a statistically significant relationship

between substance use and lone extremism by subtype?

H_o4: There is no statistically significant relationship between substance use

and lone extremism by subtype.

H_a4: There is a statistically significant relationship between substance use and

lone extremism by subtype.

Research Design and Rationale

This research study was quantitative. The dependent variables are four lone

extremist subtypes and the independent variables are four psychosocial variables. Chi-

square analyses of independence were used to assess if there are significant differences

between select psychosocial variables and far right, far left, Islamic, and single issue

extremists. In conjunction with chi-square analyses, SPSS Crosstabs was used to analyze

frequency data. From this analysis, crosstabulation tables were constructed to present the

results of all lone extremist subtypes to reveal relationships in the data that may not be

readily apparent. The designated alpha variable was set at $p< .05$. If values of p were less

than or equal to the designated alpha the null hypothesis was rejected. If values of p were

greater than the designated alpha the null hypothesis could not be rejected. Lastly, size

effect was considered for all significant results. A Cramer's V test was utilized to reveal

the strength of the relationship between statistically significant variables. Cramer's V was

be used in place of Phi to test the strength of associations because Phi is only used to

measure the strength between variables when each only has two categories. The Cramer's

V, on the other hand, is used to measure the strength of the association between one

nominal variable with either another nominal variable, or with an ordinal variable. The

following guidelines were be used to determine the magnitude of the effect size: small .1,

medium .3 and large .5 (Cohen, 1988).

Based on the PIRUS database, my independent variables were measured as

follows: mental illness (ordinal: 0 = No; 1 = Yes, according to public/popular speculation

and 2 = Yes, professionally diagnosed); alcohol/drug (dichotomous: 0 = No and 1 = Yes),

radicalized friend (ordinal: 0 = No; 1 = Yes, but only known to have engaged in legal activities; 2 = Yes, but only known to have engaged in non-violent illegal activities; 3 = Yes, known to have engaged in extremist violence and -99 = Unknown), and radicalized family member (ordinal; 0 = No; 1 = Yes, but only known to have engaged in legal activities; 2 = Yes, but only known to have engaged in non-violent illegal activities; 3 = Yes, known to have engaged in extremist violence and -99 = Unknown). The dependent variables were measured as follows: Radicalization-Islamist (dichotomous: 0 = No, 1 = Yes, and -99 Unknown), Radicalization-Far right (dichotomous: 0 = No, 1 = Yes, and -99 Unknown), Radicalization-Far left (dichotomous: 0 = No, 1 = Yes, and -99 Unknown) and Radicalization-Single issue/Ideological (dichotomous: 0 = No, 1 = Yes, and -99 Unknown).

Since the database used in this research is open source, time or resource constraints consistent with the design choice or access to data did not occur. Additionally, a quantitative research design was selected because past research on lone extremism has been considerably qualitative in nature. Past research in this area has used a phenomenological approach to investigate the origin and practice of lone extremism. A qualitative approach helps to descriptively define, approximate, or characterize a phenomenon while a quantitative approach helps measure the attributes or properties of the phenomenon. In the study of lone extremism, more quantitative research is needed to advance knowledge towards a typology allowing researchers to summarize characteristics within and across groups.

Methodology

Population

According to START (2018), in order for an individual to be included in the PIRUS dataset, one of the five criteria had to have been met:

- The individual was arrested for committing an ideologically motivated crime.

- The individual was indicted for committing an ideologically motivated crime.

- The individual was killed as a result of their committing an ideologically motivated action.

- The individual was determined to have been a member of a Designated Terrorist Organization (DTO) even if the group itself did not acknowledge the membership.

- The individual was connected with an extremist organization whose head was indicted for an ideologically motivated violent offense.

In addition to one of the criteria above, each individual must have:

- Been radicalized within the United States,

- Espoused or currently espouse ideological motives, and

- There must be evidence their behaviors are linked to the ideological motives they espoused.

Within the PIRUS sample, far right extremists made up the majority of the database ($N = 746$), followed by Islamist extremists ($N = 455$), then single issue ($N = 340$), and far left ($N = 324$) totaling 1,865 subjects (See Table 1).

Table 1

PIRUS Sample, N=1,865

Subtype	N	%
Far right	746	39.9
Islamic	455	24.4
Single issue	340	18.2
Far left	324	17.3

Sampling and Sampling Procedures

In the PIRUS sample, each individual was identified and coded using public sources comprised of newspapers, media coverage, and legal documents. The individual's name and other identifying information were not used and a 4-digit code was used for identification in its place. This method protects the identity and privacy of each subject. For purposes of this dissertation, the entire PIRUS database of 1,865 subjects was used.

According to START (2018), PIRUS data were collected and coded in several stages. First, researchers used open-sources and existing START research to collect a list of names and background information on 4,000 individuals from various ideological movements. Second, researchers coded each of these observations to determine if inclusion criteria had been met. Third, researchers coded all relevant background,

contextual, and ideological information available. Then, a random sample of individuals who met criteria was selected for inclusion by START researchers.

For coding, START utilized full-time project researchers and supervised research assistants to carefully weigh each case to assess if inclusion requirements had been met (START, 2018). Then, as stated above, random sampling techniques were used to maximize representativeness. Initially, a nonprobability sampling method was used to collect data from open sources. Once the data were collected and coded, simple random sampling from the subset was completed so that each member of the subset had an equal opportunity at being chosen for PIRUS database inclusion.

Not only are sampling methods important to the validity of research study, having an adequate sample size is as well. Power analysis is useful in determining sample size. In order to calculate power, a tool called the Power Calculation for Chi-Square Test was used (Power Calculator, n.d.). For this calculation, the significance level was set at 0.05 and the effect size was set at .5 for a large size effect (Cohen, 1988). The degrees of freedom were calculated by (columns -1) x (rows-1) or 3 x3 = 9. Lastly, the PIRUS database has an $N = 1,865$. A power of 1.0 was estimated according to these calculations. A power of 1.0 suggests a potentially reliable experiment due to a low probability of a type II error. A type II error, also known as a false negative, refers to rejecting a false null hypothesis (McClelland, Lynch Jr., Irwin, Spiller, & Fitzsimons, 2015).

Using Archival Data

Data contained in the PIRUS database were collected via public sources. Therefore, subjects contained in this database were not recruited or asked to participate in

any research study. Demographic and other descriptive information was gathered through open source methods, and then numerical identifiers were used in place of names to protect subject anonymity. No subjects were contacted in this project or while collecting raw data for the PIRUS database.

The PIRUS database in an open source database and freely available for download on the START webpage or through the project's data visualization tool at http://www.start.umd.edu/profiles-individual-radicalization-united-states-pirus-keshif. Although, permission to use this database for purposes of this dissertation was not required by START, START does outline Terms of Use (see https://www.start.umd.edu/pirus-terms-use). By accessing the portal, per their agreement, the researcher was agreeing with their Terms and Conditions.

Data Analysis Plan

Data analysis was carried out using IBM SPSS Statistics version 25 for Mac. Initially, a crosstabulation or contingency table will be constructed in order to understand potential correlations between variables. A crosstabulations analysis can conceivably reveal, in frequency percentages, significant differences among lone extremist groups by psychosocial variable. It can also be useful in revealing patterns, trends, and probabilities within raw data. Multiple chi-square tests for independence will also be used to measure the statistical significance of the association among the variables involved. Following this, a Cramer's V test to determine the strength of an association will be performed with all statistically significant relationships.

However, before these calculations occur, the PIRUS database was converted from an Excel document into SPSS version 25 for Mac. By opening SPSS then importing the Excel database, this transformation was complete. Additionally, because the PIRUS Excel document was formatted properly and the option to read variables from top row was selected, no further revisions to the dataset were needed.

Threats to Validity

Validity is central to any research project. As a researcher, I want to be confident that the conclusions made in this dissertation accurately reflect what was being studied. Threats to internal validity can compromise a researcher's confidence in reporting a relationship exists between an independent and dependent variable. Similarly, threats to external validity can compromise a researcher's confidence that a study's results are generalizable to other situations or people. Conceivable threats to internal validity include sampling issues, selection bias in open source data, coding error, human error, or poor representativeness within the data. START (2018) offered the following discussion of validity:

> Every effort was made to maximize the representativeness of the data using
> random sampling techniques. However, for reasons outside of our control, the
> data may not be representative of radicalization in the United States at all points
> in time. First, given our reliance on open-sources, the sample likely reflects news
> reporting trends over time. That is, as reporters shift their primary focus from one
> ideology or movement to another, it becomes increasingly easier to identify
> individuals who are associated with the groups that are under intense media

scrutiny, and increasingly harder to identify those who are not. For example, the post-9/11 period in the PIRUS data is likely over-representative of Islamist extremists compared to individuals affiliated with other extremist ideologies. Second, despite exhaustive searches, limited access to digital historical sources from the period beginning in 1940s and ending in 1980s make it difficult to properly represent this era in the data. Therefore, the database very likely includes a disproportionate number of more recent cases, which, if not corrected for, can bias the results of longitudinal trend analysis. Considering this, researchers should take caution when performing trend analysis with the PIRUS data. In particular, researchers should avoid analyses that compare aggregate numbers of cases over time. In addition, controls for exposure date should be included in all statistical analyses to help account for the effects of reporting trends. (para. 11)

Equally important is external validity. Population validity refers to the extent to which research results may generalize from the studied sample to a larger sample. While these results may not be generalizable to the general population, they ought to be representative of other lone extremists radicalized within the United States. START researchers coded more than 4,000 cases then selected a random sample of over 1,800 cases. This helped to ensure the PIRUS sample was representative. However, the limits of the ecological validity of this research should be carefully understood. Results implied from this research may not be consistent with lone extremist populations radicalized outside of the United States. Future research should examine the extent to which the

results of this research can be generalized from those radicalized in the United States to those radicalized in other countries.

Ethical Procedures

This research did not involve contacting or collecting data from subjects thus no overt ethical concerns arose. Archival data, like the PIRUS database, contains information that cannot be linked directly to an individual and does not reveal their identity. Confidentiality was been properly accounted for. No subject identifiers were revealed and subjects were given 4-digit identifiers in place of their names. Also, subjects were never approached for consent by START researchers or this writer. Information was gathered via open sources and subjects were not individually identifiable or recognizable in the dataset.

Another ethical consideration in this research is this writer's responsibility to the researchers whom collected the original data. Although permission to use the data set is not required, compliance with START's Terms of Use must be abided by. Also there is an ethical obligation to Walden University and the IRB not only to protect the anonymity of subjects, but also to produce research with social and clinical value. Research is designed to answer a question or gap with the literature. The question and potential gain should be worthy. A researcher's work should aim to address social change and promote improvement in the current methods of preventing, treating, or otherwise aiding people for the greater good.

Summary

A quantitative research design using crosstabulation and chi-square will be used in this study. The dataset, PIRUS, available through START, is an open source dataset. Permission to use this dataset is not required, however, START does specify Terms of Use.

In Chapter 4, further discussion of the data collection methods and the representativeness of the sample will be explored. Also, an evaluation of the statistical assumptions and statistical findings will follow.

Chapter 4: Results

Introduction

As presented in Chapter 3, there is evidence to support the notion that studying lone extremism by subtype may uncover psychosocial differences among extremists. The purpose of this quantitative research study was to measure whether there is a statistically significant relationship between lone extremist subtypes (far right, far left, Islamic, and single issue) on four psychosocial dimensions (having radicalized friends, having radicalized family members, mental illness, and substance use issues). The research questions and hypotheses that directed this study were as follows:

Research Question 1: Is there a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype?

H_o1: There is no statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

H_a1: There is a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

Research Question 2: Is there a statistically significant relationship between having family members affiliated with radical activities and lone extremism by subtype?

H_o2: There is no statistically significant relationship between between having family members affiliated with radical activities and lone extremism by subtype.

H_a2: There is a statistically significant relationship between between having

family members affiliated with radical activities and lone extremism by

subtype.

Research Question 3: Is there a statistically significant relationship between

mental illness and lone extremism by subtype?

H_o3: There is no statistically significant relationship between mental illness

and lone extremism by subtype.

H_a3: There is a statistically significant relationship between mental illness and

lone extremism by subtype.

Research Question 4: Is there a statistically significant relationship

between substance use and lone extremism by subtype?

H_o4: There is no statistically significant relationship between substance use

and lone extremism by subtype.

H_a4: There is a statistically significant relationship between substance use and

lone extremism by subtype.

The remainder of Chapter 4 will discuss the use of the PIRUS archival database

and the representativeness of this sample. Also, the results of the research

crosstabulations and chi-square analyses will be presented and each research question

will be addressed.

Data Collection

After approval from Walden University's Institutional Review Board (IRB) to

generate data for the study, I accessed the most recently released version of the archival

dataset, PIRUS. It was downloaded from the START website in Excel form, then converted to an SPSS document using SPSS Version 25 for Mac. The methods described in Chapter 3 were sustained. The deidentifed information for 1,865 subjects was used as the sample size and included 746 far right extremists, 455 Islamist extremists, 340 single issue/ideological extremists, and 324 extreme far left extremists. To ensure a representative sample, the PIRUS researchers coded and collected data for over 4,000 subjects that met their inclusion criteria. Then, a total of 1,865 subjects were randomly selected by PIRUS researchers from that subject pool. The entire PIRUS database of 1,865 subjects was used as the sample in this dissertation.

The independent variables were measured as follows: mental illness (ordinal: 0 = No; 1 = Yes, according to public/popular speculation and 2 = Yes, professionally diagnosed); Alcohol/Drug (dichotomous: 0 = No and 1 = Yes), radicalized friend (ordinal: 0 = No; 1 = Yes, but only known to have engaged in legal activities; 2 = Yes, but only known to have engaged in non-violent illegal activities; 3 = Yes, known to have engaged in extremist violence and -99 = Unknown), and radicalized family member (ordinal; 0 = No; 1 = Yes, but only known to have engaged in legal activities; 2 = Yes, but only known to have engaged in non-violent illegal activities; 3 = Yes, known to have engaged in extremist violence and -99 = Unknown). The dependent variables were measures as follows: Radicalization-Islamist (dichotomous: 0 = No, 1 = Yes, and -99 Unknown), Radicalization-Far Right (dichotomous: 0 = No, 1 = Yes, and -99 Unknown), Radicalization-Far Left (dichotomous: 0 = No, 1 = Yes, and -99 Unknown) and Radicalization-Single Issue (dichotomous: 0 = No, 1 = Yes, and -99 Unknown).

Results

This study adopted a new approach in the study of lone extremism by delineating subjects by extremist subtype. The purpose of this research was to assess if statistically significant relationships exist between lone extremist subtypes on the psychosocial variables of mental illness, substance use, and having radicalized friends or family members. If differences among lone extremists exist among psychosocial variables, this provides support that lone terrorisms are not uniform and should not be studied as such. To assess these relationships, using SPSS 25, crosstabulation analysis, and multiple chi-square tests for independence were be used. Before the results are deliberated, a discussion of chi-square assumptions and PIRUS sample demographics will be addressed.

Assumptions

The type of analysis chosen in a study depends largely on the research design, characteristics of the variables, level of measurement, and whether the assumptions required for a particular statistical test are met (McHugh, 2013). A crosstabulation is a combined frequency distribution of subjects within a sample separated on two or more categorical variables. A display of the distribution of subjects by these values generates a contingency table analysis. This data can be analyzed further using the chi-square statistic to determine if the categorical variables are statistically independent or associated. If a statistically significant association between variables does exist, other indicators such as Phi and Cramer's V can be used to describe the strength in the ability of one variable

being able to predict or vary with another. In order to conduct a chi-square analysis, according to McHugh (2013), the following assumptions must be considered:

1. Data in the cells must be frequencies rather than percentages or types of data;

2. Subjects must only fit in one category and contribute to only one cell;

3. Groups should be independent;

4. There should be 2 or more variables, both measured as categories, typically at the nominal or ordinal level; and

5. The value of each cell should be 5 or more in at least 80% of the cells, and no cell should have an expected value of less than 1.

There assumptions were carefully weighed within the PIRUS sample and violations were not found.

Descriptive Statistics

The entire PIRUS database including all 1,865 subjects was used as the sample in this research. Within this sample, 39.9% was comprised of far right extremists, 24.4% Islamic, 18.2% single issue/ideological, and far left extremists occupied 17.3% of the database (see Table 1). Of the cases defined in the PIRUS database, 544 of these individuals were defined as single (never married), 428 married, 96 divorced or separated, 11 widowed and in 786 cases martial status was unknown (see Table 2).

Table 2

PIRUS Martial Status

Subtype	N	%
Single/Never married	544	29
Married	428	23
Divorced/Separated	96	5
Widowed	11	.6
Unknown	786	42
Total	1865	100

Additionally, in terms of education, 6 subjects within the sample did not attempt high school, 96 completed some high school, 163 obtained a high school diploma, 197 completed some college, 11 completed some work towards a Master's degree, 35 completed a Master's degree, and 56 completed or worked towards a Doctoral degree. Also, 1,693 subjects in the PIRUS sample were male and 172 females. In terms of ethnicity, 1100 subjects were Caucasian/White, 248 African American/Black, 158 Middle Eastern/North African, 90 Hispanic/Latino, 67 Asian, and 7 Native American (see Table 3).

Table 3

PIRUS Ethnicity

Subtype	N	%
Caucasian/White	1295	69
African American/Black	248	13
Middle Eastern/North African	158	8.5
Hispanic/Latino	90	4.8
Asian	67	3.6
Native American	7	.4
Total	1865	100

Following an assessment of demographics of the PIRUS sample, inferential statistics were run. Using SPSS 25, Analyze, Descriptive Statistics, and then Crosstabs was selected from the dropdown menu. Next, I selected the variables for my analysis from the list box. The following 8 variables were selected: far right, far left, Islamic, single issue, psychological, alcohol/drug, radicalized friends, and radicalized family. The extremist subtypes (far right, far left, Islamic, and single issue) were selected and placed in the rows Crosstabs box and the psychosocial variables (psychological, alcohol/drug, radicalized friends, and radicalized family) were selected and placed in the columns Crosstabs box. In order to test variables for independence, a chi-square test was selected under the Statistics option. To measure effect size, the Phi and Cramer's V box was also selected.

From the SPSS cell data; several multi-level contingency tables were created in Word to display the results from the four extremist subtypes by each psychosocial variable. The tables below represent the results of all four lone extremist subtypes according to each psychosocial variable (See Tables 4-7).

Table 4
Crosstabulation: Frequency of Radicalized Friends by Extremist Subtype

Radical Friends	Islamic		Far Right		Far Left		Single issue	
	N	%	N	%	N	%	N	%
Yes	307	67.5	324	43.4	192	59.2	115	33.8
No	102	22.4	25	3.3	7	2.2	10	2.9
Unknown	46	10.1	397	53.2	125	38.6	215	63.2

Table 5

Crosstabulation: Frequency of Radicalized Family by Extremist Subtype

Radical Family	Islamic		Far Right		Far Left		Single issue	
	N	%	N	%	N	%	N	%
Yes	81	17.8	92	12.3	24	7.4	37	10.9
No	287	63.1	64	8.6	35	10.8	27	7.9
Unknown	87	19.1	590	79.1	265	81.8	276	81.1

Table 6

Crosstabulation: Frequency of Mental Illness by Extremist Subtype

Psychological	Islamic		Far Right		Far Left		Single issue	
	N	%	N	%	N	%	N	%
Yes	57	12.5	79	10.6	15	4.6	39	11.5
No	398	87.5	667	89.4	309	95.3	301	88.5
Unknown	0	0.0	0	0.0	0	0.0	0	0.0

Table 7

Crosstabulation: Frequency of Substance Use Issues by Extremist Subtype

Substance Use	Islamic		Far Right		Far Left		Single issue	
	N	%	N	%	N	%	N	%
Yes	47	10.3	89	12.0	19	5.9	22	6.5
No	408	89.7	657	88.0	305	94.1	318	93.5
Unknown	0	0.0	0	0.0	0	0.0	0	0.0

Statistical Findings

Crosstabulation analyses provided a breakdown of the data by displaying the

frequency of lone extremist subtype by each psychosocial variable. These multi-level

contingency tables also show frequency percentages of subjects by lone extremist

subtype and psychosocial variable but do not specify if these relationships are significant.

The chi-square test of independence statistic exposes whether the results of the

crosstabulation frequencies are statistically significant by identifying if the categorical

variables are independent or unrelated of one another. A total of four chi-square tests of independence were performed to test hypotheses and address each research question. These tests examined distribution frequencies of each variable by extremist subtype.

Hypothesis 1

H_o1: There is no statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

H_a1: There is a statistically significant relationship between having close friends affiliated with radical activities and lone extremism by subtype.

Chi-square revealed there is a statistical relationship between having radicalized friends and lone extremist subtype Islamic, $\chi2$ (4, $N = 1865$) $= 406.59$, $p=.00$, $\phi c=.60$; far right, $\chi2$ (4, $N=1865$)$= 98.90$, $p=.00$, $\phi c=.23$; far left, $\chi2$ (4, $N=1865$)$=26.18$, $p=.00$, $\phi c=.23$; and single issue, $\chi2$ (4, $N=1865$)$=81.11$, $p=.00$, $\phi c=.21$. According to these results, the null hypothesis can be rejected and alternative hypothesis accepted indicating there is a significant relationship between having close friends affiliated with radical activities and each lone extremist subtype. However, the relationship between Islamic lone extremism and having radicalized friendships was the strongest and all other lone extremist subtypes were considered small to medium associations (see Table 5).

Table 8

Lone Extremist Subtype and Radicalized Friendships

Extremist Subtype	*p*	φc
Islamic	.00	.60
Far Right	.00	.23
Far Left	.00	.23
Single issue	.00	.21

Hypothesis 2

H_o2: There is no statistically significant relationship between having family members affiliated with radical activities and lone extremism by subtype.

H_a2: There is a statistically significant relationship between having family members affiliated with radical activities and lone extremism by subtype.

Chi-square tests of independence were performed and revealed a statistically significant relationship between having radicalized family members and lone extremist subtype Islamic, χ2 (4, N=1865)=674.40, *p*=.00, φc=.60; far right, χ2 (4, N =1865)=141.45, *p*=.00, φc=.28; far left, χ2 (4, N=1865)=49.36, *p*=.00, φc=.16; and single issue, χ2 (4, N=1865)=57.12, *p*=.00, φc=.18. According to these results, the null hypothesis can be rejected and alternative hypothesis accepted indicating there is a significant relationship between having family members affiliated with radical activities and each lone extremist subtype. These results also suggest there is a strong relationship between having family members affiliated with radical activities and Islamic lone extremism. However, the strength of the association between having radicalized family members and far left and single issue lone extremism was small and the association between far right and radicalized family members was medium (see Table 6).

Table 9

Lone Extremist Subtype and Radicalized Family Members

Extremist Subtype	p	ϕc
Islamic	.00	.60
Far Right	.00	.28
Far Left	.00	.16
Single issue	.00	.18

Hypothesis 3

H_o3: There is no statistically significant relationship between mental illness and lone extremism by subtype.

H_a3: There is a statistically significant relationship between mental illness and lone extremism by subtype.

A chi-square test of independence was performed and revealed the following outcome. A statistically significant relationship was not found between mental illness and lone extremism by subtype far right, $\chi2$ (2, N=1865)=.69, p=.74; single issue, $\chi2$ (2, N=1865)=.79, p=.68; or Islamic, $\chi2$ (2, N=1865)=4.63, p=.10. However, a statistically significant relationship was found between mental illness and lone extremism by subtype far left, $\chi2$ (2, N=1865)=13.42, p=.00, ϕc=.09. These results suggest a statistically significant relationship between mental illness and lone extremism by subtype far left, but not Islamic, far right, or single issue lone extremists (see Table 7). Furthermore, Cramer's V revealed a very weak relationship between far left lone extremism and mental illness. In terms of Islamic, far right, and single issue lone extremists, evidence suggests the null hypothesis cannot be rejected and acceptance of the alternative

hypothesis occurred in the relationship between far left lone extremism and mental illness.

Table 10

Lone Extremist Subtype and Radicalized Mental Illness

Extremist Subtype	*p*	φc
Islamic	.10	N/A
Far Right	.74	N/A
Far Left	.00	.09
Single issue	.68	N/A

Hypothesis 4

*H*o4: There is no statistically significant relationship between substance use and lone extremism by subtype.

*H*a4: There is a statistically significant relationship between substance use and lone extremism by subtype.

A chi-square test of independence was performed and revealed a statistically significant relationship between substance use and lone extremism by subtype far right, χ2 (1, *N*=1865)=8.62, *p*=.00, φc=.07; far left, χ2 (1, *N*=1865)=6.00, *p*=.01, φc=.06; and single issue, χ2 (1, *N*=1865)=4.42, *p*=.04, φc = .05. However, statistical significance was not found in relationship between substance use and lone extremism by subtype Islamic, χ2 (1, *N*=1865)=.50, *p*=.48. Cramer's V tests of association revealed very small associations exist between far right, far left, and single issue extremists and substance use (see Table 8). These results suggest the null hypothesis cannot be rejected in the relationship between Islamic lone extremists and substance use. In the relationship between far right, far left, and single issue lone extremism and substance use, acceptance

of the alternative hypothesis occurred. Additionally, caution should be used in interpreting the relationships between far right, far left, and single issues lone extremists and substance use since their size effect is well below .1, the threshold for a small association (see Table 8).

Table 11

Lone Extremist Subtype and Radicalized Substance Use

Extremist Subtype	p	ϕc
Islamic	.48	N/A
Far Right	.00	.07
Far Left	.01	.06
Single issue	.04	.05

Summary

In the beginning of this chapter, the research questions were reintroduced then the sample, results, and statistical assumptions were discussed. Next, the descriptive and inferential statistics were explained followed by hypothesis testing. Results showed a statistically significant relationship between having close friends and family members affiliated with radical activities and each lone extremist subtype. Far left extremists were the only lone extremist subtype to have a significant relationship with mental illness and far right, far left, and single issues extremists shared a significant relationship with substance use.

In conclusion, despite various statistically relationships among variables, the strongest relationships were found between the lone extremist subtype, Islamic, and having radicalized family members and friends. All other associations were very small to medium.

In Chapter 5, the results along with the relative strengths and limitations of the study, implications for social change, and suggestions for future research will be reviewed.

Chapter 5: Interpretation of Findings

Introduction

The purpose of this study was to explore the incidence of mental illness, substance use, and having radicalized friendships and family members among far right, far left, Islamic, and single issue lone extremists. Early research on lone extremists was qualitative and focused on the individual traits of extremists while later research studied lone extremists under the blanket term terrorist. Past research discussed in Chapter 3 highlighted wide ranges in the presence of mental illness, substance use, and having radicalized social supports and called for more comprehensive look into this occurrence.

The four hypotheses in this quantitative study were tested using crosstabulations to assess frequency differences among lone extremists. Also chi-square tests of independence were used to measure whether observed frequency differences were significant; Cramer's V revealed the strength of the significant associations. The key findings of this research are as follows. In testing Hypotheses 1 and 2, statistically significant relationships were found among each lone extremist subtype and having radicalized family members and friends. However, the strongest relationship was found between Islamic lone extremists and having radicalized family and friends. Second, in terms of Hypothesis 3, mental illness and far left extremisms were the only lone extremist subtype to reveal significance; however, with further investigation this relationship was found to be weak. Lastly, in testing Hypothesis 4, the relationship between substance use and far right, far left, and single issue extremists was significant, but again, after further investigation, these associations were found to have been weak as well.

Interpretation of the Findings

After reviewing the results from the current study and examining the related

literature, there is evidence to suggest studying lone extremism by subtype is a worthy

approach. For instance, Islamic lone extremists had the strongest association with having

radicalized family members and friends, but they were also not as likely to suffer

substance use issues or mental health concerns. Far left extremists were the only

extremist subtype to have statistical relationship with mental illness, according to

Hypothesis 3 testing, but again, this association was very weak. Interestingly, in testing

Hypothesis 4, all lone extremist subtypes except Islamic had a statistically significant

relationship to substance use, but again, these associations were determined to be weak.

Although many of the associations found in this study were weak associations, this

research provides support for a psychosocial approach to studying lone extremism.

De La Corte (2010) stressed that while sociological and psychological approaches

have been useful building blocks in the development of terrorism research, a

psychosocial approach to terrorism may be the most informative. Studying lone

extremism from this approach takes into consideration that neither the individual

psychology of a lone extremist nor his or her environment provides a comprehensive

explanation of extremist activity. The psychosocial approach of De La Corte's principles

of terrorism urges scholars to consider political influence, such as extremist subtype,

along side psychosocial dimensions. Bridging from De La Corte's concepts, Vargas

(2011) theorized that lone extremists might be driven to exert political and social

influence on friends and family. Again, this study found that all extremist subtypes

displayed a statistically significant relationship with having radicalized friends and family. However, the direction of this relationship is beyond the scope of this research. For instance, it remains unclear if extremists in the PIRUS database were radicalized by family or friends and/or if these extremists were driven to exert radicalism over their family and friends. This research does support the theory that lone extremists have friends and family involved in an extremist movement. Vargas (2011) also suggested terrorism should be understood as rationality gone wrong and studying the psychological wellness of extremists, such as their mental health and substance use, should be assessed. This research revealed a very weak, but statistical relationship between far left extremists and mental illness. It also revealed a very weak, but statistically significant relationship between far right, far left, and single issue lone extremists and substance use, but not Islamic lone extremists. Given these results, Vargas' take on how to approach the study of terrorism appear commendable and worthy of further exploration.

Limitations of the Study

Every study has limitations. Clarifying these limitations is useful in understanding the conditions in which the results should be interpreted. Also, these limitations are important because they place the research findings in context and help interpret the validity of the research. One of the primary limitations of this study is that the PIRUS database and thus this research sample, is not a complete list of all persons who have been radicalized in the United States. However, the expectation is the PIRUS database is representative of this population. This database offers a large sample size and random sampling techniques were used by START researchers to select from a larger

sample over 4000 subjects. Certainly large datasets have many advantages especially in studying rare events such as lone extremism (Kaplan, Chambers, & Glasgow, 2014). Nevertheless, while large sample sizes are advantageous, studies may be of no value if the large sample size is not representative of the population to which the results will be generalized. Also, if data are missing key information or derived in a nonrandom basis, limitations may also arise.

Furthermore, START researchers managing the database note users should use caution as the PIRUS database is not complete when looking at collective rates on variables of interest. And while every effort was made to maximize the representativeness of the data using random sampling techniques, for reasons outside of PIRUS researchers' control, data may not be symbolic of radicalization at all points on an time spectrum (START, 2018). As stated in Chapter 1, START researchers' reliance on open sources such as newspapers, media reports, and magazines may reflect news reporting trends over time. A focus on a particular ideology may occur following a devastating event like 9/11 making it increasingly easier to identify individuals who are associated with this ideology. Lastly, these results are limited in terms of generalizability and results may not be applicable to lone extremists radicalized outside of the United States.

Recommendations

This research stemmed for a significant gap in the literature on how lone extremists should be studied. Past research that has failed to delineate by extremist subtype has yielded inconclusive generalizations and wide ranges in the presence of

psychosocial traits. The results of this study provide support for psychosocial differences among lone extremist subtypes radicalized within the United States. Further research should examine other psychosocial variables and their relationship to lone extremism including, but not limited to, specific mental health diagnoses, history of violence or criminal charges, age of radicalization, how an extremist was radicalized (Internet, in person, media, etc.), history of childhood abuse, and more. Also, during the process of writing this dissertation, a more recent update of the PIRUS database was released by START. The updated PIRUS database now includes 2,149 individuals and spans from 1948-2017. It may also be of interest to run the same statistical measures found in this research with the addition of the updated 300 individuals to see if results may differ. Finally, noteworthy advances in lone extremism may also come in studying psychosocial differences among violent versus nonviolent lone extremists.

Implications

In recent years, there has been increased interest in the political, social, and psychological influences that lead an individual to act in a fit terrorism. According to Schuurman et al. (2018), the concept of lone extremist typology should be fundamentally reconsidered. De La Corte (2010) urged researchers to test associations between social interaction and psyche development, the social influence of friends and family, and psychological wellness. Past research has fallen short and studied lone extremism homogeneously. Many publications have failed to recognize typologies that may emerge when delineating lone extremists by subtype, however, a movement towards and support for studying lone extremism by subtype has been found when examining differences

among subtypes of psychosocial variables such as mental health (Corner & Gill, 2015; Gill, Horgan, & Deckert, 2014; McCauley & Moskalenko, 2011; Meloy & Gill, 2016; Nijboer, 2012; Pitcavage, 2015; Weenick, 2015), substance use (Gill et al., 2014; Gruenewald et al., 2013; Simi et al., 2015; Bubolz & Simi, 2015), and radicalized family and/or friendships (Endal, 2018; Gill et al., 2014; Morrison & Gill, 2016; Post et al., 2003).

This study raises awareness on how lone extremism is studied by exposing differences among extremist subtypes. Continued strides to identify variables consistent of lone extremists by subtype afford the opportunity for building a predictive model. Empirically based research on lone extremists can lead to positive social change by providing the knowledge to fuel advancements in intelligence and training towards prevention. Programmatic support in recognizing and deradicalizing, developing community education and training procedures on detection, and developing community resilience programs to minimize damage are ultimate goals stemming from this and subsequent related research. Ultimately, if researchers and law enforcement are able to understand the psychosocial dimensions that may facilitate lone extremism, as a society, we may be better able to combat, prevent, or identify these individuals prior to radicalization. In an effort to promote social change, this research produced some rudimentary information as a movement towards a predictive model. However, this information alone cannot be used to predict lone extremism and should not be interpreted as having that capability.

Conclusion

The purpose of this research was to investigate potential differences in psychosocial variables by lone extremist subtype. The conceptual framework for this study was De La Corte's psychosocial principles of terrorism because this approach addresses both the social and political influences of terrorism in conjunction with complex psychosocial constructs. The PIRUS database was chosen as the sample for this study because it includes de-identified individual-level information on 1,865 extremists. Crosstabulation analysis and multiple chi-square tests for independence were used to test the relationship between the categorical variables. The key findings of this research were as follows. First, statistically significant relationships were found among each lone extremist subtype and having radicalized family members and friends. However, the strongest relationship was found between Islamic lone extremists and having radicalized family members and friends. Second, in terms of mental illness, far left extremisms were the only extremist subtype that had a significant relationship, however, with further investigation this relationship was found to be weak. Lastly, the relationship between substance use and far right, far left, and single issues extremists was significant, but again, after further investigation via Cramer's V calculation for size effect, these associations were found to have been weak.

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