

THE LINGUSITICS OF TERROR: A CONTENT ANALYSIS OF  
SUICIDE NOTES AND MARTYR MANIFESTOS

by

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A THESIS

Submitted in partial fulfillment of the requirements  
for the degree of Master of Science  
in the Department of Criminal Justice  
in the Graduate School of  
The University of Alabama

TUSCALOOSA, ALABAMA

2016

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## ABSTRACT

Despite growing interest in the motivations and psychological profiles of suicide attackers, few empirical studies have examined their personal writings and recordings. The present study seeks to uncover linguistic trends in the manifestos, suicide notes, and recorded speeches of suicide attackers. Using the content analysis software, Linguistic Inquiry and Word Count, the author seeks to uncover patterns within these documents and establish identifying trends across geography, attack type, and/or group affiliation. Given the framework provided by Institutional Anomie Theory, linguistic trends are expected to arise in relation to these factors and variations in societal anomie. This study also aims to add to previous literature regarding attacker attitudes and incentives more broadly using aggregated sample data.

## ACKNOWLEDGEMENTS

I am pleased to have this opportunity to thank my many colleagues, friends, and faculty members who have assisted me in this endeavor. I am most indebted to Adam Lankford, the chairman of this thesis, and my remaining committee members, Diana Dolliver and Stephen Schwab, for their invaluable input and support.

This research would not have been possible without the support of my husband, Adam, my parents, John and Donna Henderson, brother, Paul Matthew Henderson, friends, and fellow graduate students. Each of you never wavered in your support, and I am forever grateful to have you.

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## CHAPTER 1

### INTRODUCTION

8:46 a.m. September 11, 2001. American Airlines Flight 11 crashes through the northern façade of the World Trade Center's North Tower. 9:03 a.m. United Airlines Flight 175 strikes the South Tower. 9:37 a.m. The Pentagon is struck from the west, and at 10:03 a.m. Flight 93 crashes in Somerset County, Pennsylvania. At the conclusion of September 11<sup>th</sup>, this series of coordinated strikes resulted in the death of nearly 3,000 individuals (Kean, 2011). Prior to these events, such methods had been studied in conjunction with Japan's use of kamikaze pilots during the Second World War, and extremist organizations from Sri Lanka to the troubled Middle East. However, in the wake of September 11<sup>th</sup>, a new generation of citizens and government officials alike began to wonder: how can we defuse the 'ultimate smart bomb' (Post, Ali, Henderson, Shanfield, Victoroff, & Weine, 2009)?

Despite growing interest in the motivations and psychological profiles of suicide attackers, few empirical studies have examined their personal writings and recordings (Salem, Reid, & Chen, 2008). The purpose of the present study is to uncover thematic and structural trends in the suicide notes, statements, and manifestos of suicide attackers through the use of the rhetorically-sensitive content analysis software, Linguistic Inquiry and Word Count (Pennebaker Conglomerates, Inc., 2015). The author, through this form of analysis, sought to extrapolate key motivations and psychological features from an otherwise inaccessible population (i.e. deceased suicide attackers) in the hopes of contributing to the overall profile of a suicide attacker. Further, the present study, informed by Institutional Anomie Theory, aimed to identify thematic and structural trends in order to assist in the identification of such attackers across factors related to

societal anomie (i.e., geography and group affiliation). Critical implications will be discussed, but first we must look to the history of this unique brand of terror.

### **A Brief History of Suicide Attacks**

In March of 1881, near the Winter Palace of St. Petersburg, Tsar Alexander II became the victim of what some believe to be the first suicide attack in history. While traveling in an armored carriage gifted to him by Napoleon III of France, the Tsar's convoy was struck by an improvised explosive device (IED) (Reuter, 2004; Federal Bureau of Investigation, 2007). Meanwhile, a member of the Russian revolutionary organization, the People's Will, detonated explosives that ended both the life of the attacker and the life of Russia's highest commander (Reuter, 2004). However, there is no definitive evidence that the bomber intended to die in the process (Federal Bureau of Investigation, 2007).

Due to the considerable debate that surrounds this event, the Kamikaze pilots of World War II are often recognized as the first proven implementation of suicide attacks (Reuter, 2004). However, variations in terminology and criteria have also led the Oklahoma City National Memorial Institute for the Prevention of Terrorism (MIPT) to declare the December 15<sup>th</sup>, 1981 attack on the Iraqi Embassy in Beirut to be the first true act of suicide terrorism (Federal Bureau of Investigation, 2007).

Following the destruction of Japan's naval forces at the Battle of Leyte Gulf, the Imperial Japanese government operationalized self-sacrifice in the form of more than 3,000 manned aircrafts (Lewis, 2014). Unlike most modern attacks, these planes were exclusively directed towards military targets (Dodd, 2013). This tactic, by which pilots intentionally dove their aircrafts into the ships and bases of Allied naval forces, represented a weapon of asymmetrical warfare, and a symbol of unfathomable commitment to the cause (Lewis, 2014). At

its peak in the Battle of Okinawa, this practice resulted in the destruction or decommissioning of 30 Allied ships (Dodd, 2013). However, due to the advent of armored flight decks, these attacks later lacked the destructive capabilities they once wielded, and it would be nearly four decades before individuals and organizations alike significantly returned to the use of suicide attackers (Lewis, 2014).

As previously mentioned, variations in terminology and operational criteria have led some to postpone the first true occurrence of suicide terrorism to 1981. On the 15<sup>th</sup> of December, the Iraqi Ambassador to Lebanon was killed in a suicide attack claimed by the following collectives: the Army for the Liberation of Kurdistan, the Iraqi Liberation Army, and the al-Dawa or “The Call,” a Muslim fundamentalist organization (Federal Bureau of Investigation, 2007). Similarly, both the United States Marine Corps and French service barracks were later destroyed in a suicide attack, for which Hezbollah later claimed responsibility. In total, 299 multi-national service members lost their lives, 241 United States personnel and 58 French paratroopers (Horowitz, 2008). Given the success of these attacks and the ensuing media spectacle, both religious and secular groups began to embrace this method once more (Lewis, 2014).

A separatist guerilla movement known as the Liberation Tigers of Tamil Eelam (LTTE) utilized this tactic in pursuit of an autonomous state for the Tamil people of Northern Sri Lanka. Their founder, Vellupillai Prabhakaran, enjoyed astounding member commitment and a god-like stature until his death in 2009. Prior to September 11<sup>th</sup>, Prabhakaran’s organization was the most frequent and most proficient adopter of suicide terrorism (Horowitz, 2008). The Black Tigers, a collective specifically charged with suicide missions, operated off a lottery system in which applicants would write a plea to Prabhakaran, who would then determine their worth and

commitment to the cause (Dodd, 2013). The now-defunct organization is widely credited with over 150 deadly incidents (Horowitz, 2008). However, some experts suggest they could be responsible for nearly 200 suicide attacks as they led the world in suicide missions from 1980 to 2003 (Horowitz, 2008; Dodd, 2013). The Tamil Tigers also introduced the world to the use of discreet suicide vests and belts, which later became regular weaponry in the nations of Iraq, Afghanistan, and Pakistan (Dodd, 2013). Further, they pioneered the use of female martyrs (Horowitz, 2008).

Although the majority of suicide attacks discussed thus far have been carried out by young men, female martyrs have been used in a variety of conflicts. In 1985, an Israeli convoy was destroyed by a Lebanese woman armed with explosives (Dodd, 2013). The ‘Black Widows’ of the Chechen independence movement, however, represent the most prominent collective of female attackers. In August of 2004, 90 people died as women aboard two airliners detonated self-guided explosives (Dodd, 2013). Despite their unique appeal regarding media publicity and security access, female suicide bombers have made up just over five percent of suicide bombers from 1981 to 2010. Still, their popularity continues to rise in countries such as Russia, India, Iraq, Israel, Uzbekistan, and the Palestinian Territories (Dodd, 2013).

Similarly, the use of suicide attacks generally has continued to rise. By the early 1990s, suicide attacks were occurring in nations such as Turkey. The Kurdistan Workers’ Party, or PKK, has employed suicide bombings on Turkish security forces throughout their insurgency efforts (Reuter, 2004). Further south, Hamas and Palestinian extremists targeted Israeli heads using suicide bombers in an attempt to spoil the Oslo-Cairo peace process of 1993 (Lewis, 2014). Again, in 1998, al-Qaeda struck American embassies with suicide attacks that resulted in the destruction of Dar es Salaam in Tanzania. Campaigns of self-sacrificial attacks have steadily

risen from the early 1980s, with Hezbollah's destruction of the French-American barracks, to the 2000s, when Yasser Arafat's organization, Fatah, finally adopted the tactic (Horowitz, 2008).

More recently, over 400 acts of suicide terrorism were committed in Iraq between March of 2003 and February of 2006, compromising the lives of both American-led forces and Iraqi civilians (Horowitz, 2008). Further, suicide attacks have been similarly embraced across the region at large. From former Baathist Ideologues to al-Qaeda and the attacks committed by al-Shabaab in Somalia, the practice of suicide terrorism is an increasingly worrisome threat, especially to coalition forces in the Middle East and Northern Africa (Reuter, 2004). However, in March of 2016 an Islamic State attack in Brussels, the capital of the European Union and North Atlantic Treaty Organization, proved these tactics know no boundaries (Botelho, 2016).

In *Dying to Win: The Strategic Logic of Suicide Terrorism*, author Robert Pape found that a mere three percent of terrorist incidents from 1980 to 2003 could be considered acts of suicide terrorism. However, excluding the casualties of September 11<sup>th</sup>, these attacks represented nearly 48 percent of the victims (Pape, 2005). This finding suggests that suicide terrorism is not only a tactic of psychological warfare, but also a highly effective act of mass destruction.

### **Defining Terms**

As discussed above, the frequency and severity of suicide attacks has intensified and become one of many methodologies utilized by a number of collectives (Santifort-Jordan & Sandler, 2014). While it may be tempting to proceed with research based upon the term's face value, there are a myriad of frameworks and sociological priorities to consider when selecting an operative definition of "suicide terrorism" and "suicide attack" (Post et al., 2009).

First, it is valuable to distinguish terrorism from other military phenomenon, such as guerilla warfare and insurgency tactics (Post et al., 2009). Especially with regard to suicide

terrorism, the key differences lie in the operational goals and symbolic implications. Post et al. (2009) suggests that the aim of insurgency is the occupation of territory and overthrow of the ruling political system. While suicide terrorists may share in some of these aims, there is generally an additional political message (Post et al., 2009).

In his seminal work, *Inside Terrorism*, Bruce Hoffman (1998) observes that the root term, “terrorist,” is subject to considerable debate. Hoffman suggests that both the definition and approach to combating terrorism differ based on the agency defining the act. For example, the Department of Justice and enforcement-based agencies such as the Federal Bureau of Investigation have defined terrorism in a manner that reflects a violation of law. Conversely, the USA Patriot Act of 2001 frames terrorism around the victim population (Hoffman, 1998). Santifort-Jordan and Sandler (2014) state that terrorist attacks are composed of individuals or subnational groups who use death and destruction in order to obtain a political or social objective. Moving forward, this academic definition will be utilized throughout the remainder of the study at hand.

Further, the term suicide can also be dubious. While any individual that ends their own life may appear to fit the bill, it is truly a matter of perspective. In Vietnam, for example, Buddhist monks doused themselves in gasoline and immolated their bodies in protest of the raging war at the border. In this scenario, many devout Buddhists and anti-war advocates declared their behavior to be acts of sacrifice, as opposed suicide (Post et al., 2009).

This battle of taxonomy can also be seen in debates regarding Emile Durkheim’s altruistic suicide (Leenars & Wenckstem, 2004). Within this conceptualization, scholars beg the question: is there a difference between those who sacrifice themselves for others and those who elect to commit suicide in order to fulfill personal needs? However, Leenars and Wenckstem

(2004) suggest there is little to no difference between the central actors. Therefore, questions of motivation and honor do not limit the scope of the present study. It is critical that we understand the ethnographic biases we, as researchers and consumers, bring to the table. However, the above research suggests that we need only refine our sample populations to those who intentionally died in the commission of an attack. For this reason, the author has elected to expand the present sample based on research regarding suicidal mass shooters and their previous inclusion in the study of suicide terrorism.

In 2012, professor and author, Adam Lankford, Ph.D. wrote the following:

“For years, the conventional wisdom has been that suicide terrorists are rational political actors, while suicidal rampage shooters are mentally disturbed loners. But the two groups have far more in common than has been recognized...In fact, we should think of many rampage shooters as non-ideological suicide terrorists.”

In the case of Sebastian Bosse, a suicidal shooter featured in the present study, the delineation proves quite unclear. A former student of the Emsdetten school, Bosse inevitably wounded five individuals and set off a number of smoke devices on the campus. However, only when he passed of a self-inflicted gunshot wound did authorities discover the explosives strapped to his body (CTV News, 2006). Had he successfully detonated the device, the headlines surely would have read ‘Suicide Bomber Hits Local School.’

On the other hand, Lankford and Hakim (2011) suggest there is one significant difference between the two collectives, the involvement in or influence of an organization. Suicide terrorists traditionally juxtapose rampage shooters in this regard, the latter almost exclusively acting alone (Lankford & Hakim, 2011). Given this distinction and the theoretical framework proposed

below, the results of these two collectives have been analyzed separately for any demarcating trends.

Nevertheless, just as a suicide bomber or kamikaze pilot, shooters wields the power to end not only the lives of others, but also themselves (Langman, 2009). Moving forward, the present study will refer to the selected individuals simply as ‘suicide attackers.’ The sampling criteria will be detailed further in sections to come.

### **Studying Suicide Attackers**

Despite growing interest in the motivations and psychological profiles of these attackers, few empirical studies have examined their personal writings and/or recordings. In his work, “Suicide Terrorism and the Biology of Significance,” Victoroff (2009) reacts to the highly popularized notion that terrorists are willing to sacrifice themselves in pursuit of personal significance. The author declares this tenant unsound based upon the small percentage of terrorists that actually pursue, and more importantly, complete acts of suicide terrorism (Victoroff, 2009). Despite the interesting conclusions presented in theoretical articles such as these, the article contains little empirical evidence, and does not speak directly to the attacker’s perspective. Within the realm of terrorism research, a field where the research population is almost entirely inaccessible, one is often limited to this form research.

In his work, “Could suicide terrorists actually be suicidal?,” Lankford (2011) discusses both suicide risk factors and the direct application to terrorist populations. Speaking in contradiction to common assumptions, Lankford (2011) suggests that suicide terrorists are not behaviorally normative, and are in fact classic expressions of depression and suicide. In his collection of nearly 75 case studies, the author demonstrates how these individuals exhibit classic signs of suicidal ideation including: loss of security, inflicting or being the victim of serious

illness or injury, substance abuse, traumatic brain injury, and shame (Lankford, 2011). This author further updates and extends his analysis in the book, *The myth of martyrdom: What really drives suicide bombers, rampage shooters, and other self-destructive killers* (Lankford, 2013). In many passages, Lankford directly references the notes or manifestos of suicide terrorists, but did not perform any structured content analyses (Lankford, 2013). This work did, however, contribute to the field of research which collates all methods of self-destructive killings.

Due to the mass dissemination and impact of the jihadi doctrine, Salem et al. (2008) suggest that the study of jihadi literature and multimedia can assist policymakers and analysts in both their understanding of extremist groups and the development of counter efforts. In this article, Salem et al. (2008) present an exploratory study of extremist multimedia. A sample of 60 jihadi videos were randomly selected from collection of 706 files obtained from the Dark Web (48 depicting violent attacks, and 12 depicting planning and logistical preparation). Using content analysis and a digital coding tool, the authors explored group dynamics, modus operandi, and features of the production. The Multimedia Coding Tool (MCT) was utilized for its editable coding scheme, which resulted in eight high-level classes and 25 content categories. Video content was also categorized using the IntelCenter's classification scheme. Categorical decisions were supported by the presence of two native domain analysts with an inter-coder reliability of .80. The results of this study led to the proposition of a 'matrix of *jihadi* groups' videos' (Salem et al., 2008). This matrix is a tool for classifying multimedia based upon its use (operational vs. non-operational, individual vs. group-oriented, etc.). Additionally, Salem et al. (2008) present a secondary contribution regarding division of labor. Their exploration of this methodology and jihadi multimedia led to the recognition of informal division of labor patterns in extremist organizations.

More specific to the research at hand, content analysis was utilized for the analysis of suicide notes, poems, and wills left by the self-sacrificial Kamikaze pilots of World War II (Orbell & Morikawa, 2011). In their article, “An Evolutionary Account of Suicide Attacks: The Kamikaze Case,” Orbell and Morikawa (2011) specify environmental triggers for heroic behavior. While some scholars feel that the majority of Kamikaze pilots were coerced actors as opposed to free-willing volunteers, Orbell and Morikawa (2011) created an algorithm reflecting trends of altruism in Kamikaze literature. Given the success of this research, which similarly employed content analysis of suicide attacker literature, the present study employed similar analytical tactics and expanded upon Orbell and Morikawa’s (2011) sample to include both literature and recorded speeches from a global population of suicide attackers.

As Orbell and Morikawa (2011) write, “Explanations for suicide attacks abound. Yet the literature remains fragmented...” (p. 297). Given this compilation of previous research, the authors expect to fill a remaining void through the use of rhetorically-sensitive content analysis software. The present study is further informed through the theoretical guidance of Institutional Anomie Theory (IAT).

### **A Theoretical Framework: Institutional Anomie Theory**

Over the past century of modern criminological research, scholars have attempted to explain crime through a variety of theoretical lenses. One sect of criminological theory, termed macro-level theory, attempts to elucidate variations in crime across populations, and understand the social factors that influence deviance at these societal, national, and international levels (Aas, 2007). Given the global scale of the current study, the authors have selected Institutional Anomie Theory as a framework by which they have guided the present research inquiries and trend analytics. Before proceeding with a specified discussion of Institutional Anomie Theory and its

relevance to the present study, it is critical that we first define operational components related to social organization, and discuss the conceptual origins of Anomie.

Scholars, such as Robert K. Merton, have drawn attention to two key components of social organization, culture and the social institution (Dolliver, 2013). Within the realm of sociology, *culture* has referred to the shared values and beliefs of a society or nation, as well as collective standards and aims (Lincoln & Guillot, 2006). According to Akers and Sellers (2013), a society, community, or nation may only be deemed socially organized if there is internal consensus regarding these values and normative behaviors. However, the influence of these cultural forces can only be understood in conjunction with Merton's second element of social organization, *social institutions* (Dolliver, 2013).

According to Scott (2008), "Institutions are comprised of regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life" (p.48). That is to say that institutions serve to regulate and inform societal behavior through commonly held expectations (Dolliver, 2013). For example, while American *culture* may value one's freedom of speech, it is the *institutions* of the nation that promote the valuation of this freedom and penalize those that infringe upon it. While scholars continue to study these elements, it is important to note that the individual cannot be understood apart from these cultural and institutional contexts (Pettit, 2013). This point is critical to the formation of the present study's research inquiries as we will examine the influence of culture and society upon suicide attackers.

At the heart of Institutional Anomie Theory lies Emile Durkheim's construct of *Anomie*. This term refers broadly to a state of normlessness or misalignment in a society (Dolliver, 2013). Such a normless state may be provoked by either institutional disruptions (i.e., market

fluctuations) or individual stressors (i.e., family death). In his study of suicide, Durkheim argues that these crises, no matter their origin, create anomic states, which in turn promote higher rates of deviance (Akers & Sellers, 2013). In an expansion of criminological theory, Robert K. Merton (1938) utilized this notion, in combination with various concepts of social strain and social organization, to develop his theory of Anomie (Dolliver, 2013).

In both frameworks, Durkheim and Merton assume that man is sociable and generally compliant. Further, both propose that social order lends itself to societal conformity, a notion also suggested by social disorganization theory (Akers & Sellers, 2013). Conversely, they emphasize that malintegration produces deviance (Paternoster & Bachman, 2001). While scholars such as Albert K. Cohen (1955) have emphasized the more structural sources of strain and their impact on criminal deviance, Messner and Rosenfeld utilized the foundation set forth by both Durkheim and Merton to construct the theory of Institutional Anomie, which, despite its namesake, places equal influential weight on both culture and social institutions (Akers and Sellers, 2013).

Institutional Anomie Theory can be seen as a theoretical groundwork upon which the present study will analyze the influence of society and culture on the individual. Initially, Steven Messner and Richard Rosenfeld studied the health of American society through a dissection of the 'American Dream.' The authors suggest that American crime rates, and the resultant rates of incarceration, can be explained by the distinctly American emphasis on monetary success and the institutional imbalance that results from an over emphasis on achievement in the economic realm (Messner & Rosenfeld, 1994). For example, Messner and Rosenfeld have argued that the dominance of economic institutions in this country has weakened the control of non-economic counterparts (Akers & Sellers, 2013).

Since this time, their initial arguments have been further developed to encompass the more general happenings of advanced capitalist nations (Dolliver, 2013). However, what is most critical to the study at hand is the proposition that the health of one's society can impact individual behavior. This point gains traction when discussing the occurrence of self-sacrificial attacks, a phenomenon that combines both Durkheim's work regarding suicide and the overall discussion of crime at the macro-level.

In summary, Institutional Anomie Theory presents a compelling synthesis of major sociological concepts, such as Anomie and social structure. While shortcomings related to testing require greater attention, IAT continually succeeds in its applicability to a myriad of social systems and methods of deviance (Akers & Sellers, 2013). For the purposes of the present research, IAT will merely inform the following research objectives and serve as a lens through which any linguistic trends may be viewed. The present study will discuss the linguistics and motivations of suicide attackers from across the globe. Therefore, societal traits such as cultural norms, geography, and prevailing group affiliations are used to group the collected linguistic data. Trends are expected to arise as varieties in Anomie will likely influence the behavior of each society's members.

## CHAPTER 2

### METHODOLOGY

#### **The Current Study**

In an attempt to gain greater insight into the psyche of a suicide attacker, the current study sought to uncover linguistic trends in the notes, manifestos, and audio transcripts from 30 successful suicide attackers. Through the use of the content analysis software, Linguistic Inquiry and Word Count, the present study was able to extrapolate various findings regarding the linguistics, and, thereby, the psychology of suicide attackers from across the globe. The sample, analytical tool, procedure, study limitations, and research objectives are detailed below.

#### **Data**

Tausczik and Pennebaker (2010) tell us that “the internet world provides a far more diverse population from which to draw as well as access to a wide range of languages” (p. 38). For this reason, the present study employed an internet-based snowball methodology in order to obtain relevant suicide notes and manifestos. A list of search terms was compiled from the above literature review, and informed an initial search of three leading search engines: Google, Yahoo, and Bing. Initial search terms included but were not limited to the following items and combinations thereof: suicide attack (Lankford, 2011; Lankford, 2013; Salem et al., 2008; Orbell & Morikawa, 2011), suicide pilot (Victoroff, 2009; Lankford 2013; Orbell & Morikawa, 2011), suicide bomber (Victoroff, 2009; Lankford, 2011; Lankford, 2013; Salem, et al., 2008), mass shooter (Langman, 2009; Lankford, 2011, 2012, 2013; Lankford & Hakim, 2011), rampage shooter (Langman, 2009; Lankford, 2011, 2012, 2013; Lankford & Hakim, 2011), school shooter (Langman 2009; Lankford, 2013; Lankford & Hakim, 2011), suicide note and/or manifesto

(Lankford 2011; Lankford 2013; Orbell & Morikawa, 2011), martyr video (Salem, et al., 2008) and self-sacrifice (i.e., Victoroff, 2009; Orbell & Morikawa, 2011). From this point, the snowball methodology was employed in order to obtain the most representative and reliable sample available. When available and/or necessary transcripts were cross-validated with a minimum of one additional resource in order to ensure proper translation and avoid publishing errors.

Each of the qualifying texts were selected based on availability of resources and completeness of record. Further, texts were only selected if they met the following criteria. First, complete documents were required for analysis. Quotations and short excerpts, while insightful, would have skewed the output percentages given by the analytic program. While this requirement limited the study's sample size, it allowed the researcher to exercise quality control, and ensure proper and comparable statistical output. Next, a minimum word count was set at 100 words per text. This specification again takes into consideration the software's percentage output format, and ensured that the data was not unjustly skewed due to minimal content. Finally, in order to maintain consistency and prevent retroactive revisions, materials were only considered if the individual successfully completed the attack, and therefore died in the process.

As stated above, the present study utilized the suicide notes, manifestos, and audio transcripts from 30 suicide attackers across various nationalities, religions, and group affiliations. Within the confines of this study, suicide attackers were defined as individuals who intentionally died as part of their pursuit of human fatalities and/or mass destruction, typically in support of a political, religious, social, personal, or national effort (Santifort-Jordan and Sandler, 2014).

## **Analysis**

In this exploratory study, the author utilized content analysis software. Content analysis methodology has long been utilized in the field of communications (Pettit, 2013). While more

commonly used in that arena, the following research speaks to this method's relevance to the present study.

**Analyzing the content of non-suicide literature.**

According to Tausczik and Pennebaker (2010), the technological revolution has brought researchers the ability to relate oral and written word use to a number of behaviors. Further, they suggest that “the simultaneous development of high-speed personal computers, the Internet, and elegant new statistical strategies have helped usher in a new age of the psychological study of language” (Tausczik & Pennebaker, 2010, p. 25). In line with this notion, content analysis has, in recent years, been extended from the field of general communications to the study of political manifestos (i.e., Laver & Garry, 2000), jihadi propaganda (i.e., Salem, Reid, & Chen, 2008), and suicide literature (i.e., Handelman & Lester, 2007).

For example, in the *International Journal of Market Research*, Pettit (2013) validated the utility of such methodology through their study of social media posting. In particular, this study sought to examine variations in expressed sentiments based on a number of author characteristics (e.g. gender, age, and country of origin). The author created a ten category dataset, which compiled millions of brief postings. The results of this study showed that more positive sentiments were displayed by both women and elderly populations, especially with regards to the citizens of Australia. Conversely, the American sample showed increasingly negative sentiments (Pettit, 2013). While this analytical method was neither computer-based nor relevant to the study of suicide attacks, the success of content schemas suggests that the methodology is capable of identifying trends across various documents.

In order to both cross-validate analytical methods and estimate political policy positions, several articles have examined the application of content analysis to the study of political

manifestos and party positioning. Laver and Garry (2000), for example, utilized both hand-coding and computer-based content analysis to ascertain political affiliations and policy positions from British and Irish political manifestos. Through the study of party manifestos from British (1992) and Irish (1997) election periods, the authors proposed a new scheme for hand-coding content analysis, and cross-validated it using English language computer-coding and expert political surveys. Laver and Garry (2000) based their research and methodology upon the work of the Manifesto Research Group (MRG) and the Party Change Project, both of which designed coding schemes to analyze policy emphasis among post-war parliamentary democracies.

The authors constructed “economic left-right” and “liberal-conservative values” scales across both methods. From this point, raw counts using expert coders and the computer software calculated terms relevant to both political scales. Results indicate that correlations between computer-coding and other scales range from 0.72 and 0.94, which suggests considerable consistency (Laver & Garry, 2000). The most compelling findings showed a high degree of cross-validation between computer coding, revised expert coding, and expert surveys. These results suggest that computer coding can reliably estimate policy positions from political texts. The technique proved especially sensitive to changes in the British Labor Party (Laver & Garry, 2000). Given the validation of computer-based coding, this approach was extrapolated and later applied to the study of terrorist manifestos.

In 2007, Benoit and Laver expanded upon Laver’s previous study. In an attempt to compare political positioning estimates, Benoit and Laver (2007) analyzed expert surveys and Comparative Manifestos Project (CMP) data. Their research revealed some agreement in cross-national assessment and single nation assessments across time. Remarkably, through the authors’ investigation of Comparative Manifestos scores, they discovered that the substantive meaning of

the political left and right spectrum were not constant. This study again demonstrates the sensitivity of content analysis (Benoit & Laver, 2007). The fact that this methodology was able to detect shifts in the political spectrum suggests that this form of coding is capable of detecting even minor variations in the present literature.

As a reinforcement to the previous study, Protsyk and Garaz (2013) studied the politicization of ethnicity using various party manifestos. The proposed approach allowed for a comprehensive comparison of how parties broached multiethnic issues. Again, the authors utilized content analysis and political manifestos. While their methodology employed human-based coding, their results similarly suggest that content analysis is sensitive to subtleties in rhetoric (Protsyk & Garaz, 2013). Further the authors conclude by suggesting that party manifestos can assist the academic community in understanding shifts in general writing (Protsyk & Garaz, 2013).

The preceding studies, while not topically relevant to either suicide attacks or suicide literature, validate the use and sensitivity of content analysis, both computer and human-based. However, there are a number of studies that specifically address the study of suicide literature.

#### **Analyzing the content of traditional suicide literature.**

In their work, “Who leaves suicide notes? A six year population-based study,” Cerel, Moore, Brown, van de Venne, and Brown (2014) found that 18.25% of suicides resulted in the leaving of notes, statements, or manifestos. These authors found discernible demographic and circumstantial predictors for the leaving of a note. For this reason, content analysis has been utilized in the study of suicide literature across said variables.

In 2014, Ioannou & Debowska sought to examine the authenticity of suicide notes, in order to develop a series of identifying themes. In an attempt to differentiate between 33 genuine

and 35 simulated notes, these notes were analyzed by content and subjected to smallest space analysis (SSA). At the foundation of each note were three distinct constructs: expressions of love, positive construction of partner, and final apologies. While the entire sample appeared to be the same in this manner, content analysis rendered seven themes that demarcated the two forms (Ioannou & Debowska, 2014). Genuine notes contained references to: a planned escape, negative affect, positive affect, failed relationships, and a general lack of self-acceptance. Simulated notes were also found to contain content referring to escape and positive affect, but also referenced notions of self-blame and a purposeless life. By implementing these thematic identifiers, the authors suggest one could identify simulated notes based on content (Ioannou & Debowska, 2014). This study further suggests that content analysis would result in thematic trends that can speak to both the author and the authenticity of the note. Both factors are valuable in the present study of suicide attack literature.

In a continued study of suicide literature, Black and Lester (2013) examined the effects of method, age, and gender in relation to suicide note content. Forty notes were collected and classified based upon affect, textual content, quality of thought, and a number of other variables. According to Black and Lester's results (2013), females displayed less hostility, used less absolute language, gave little instruction, and did not accept as much responsibility as their male counterparts. This study, again, indicates the potential information to be gained through content analysis, especially with regard to suicide literature.

### **The present instrument.**

Based on researcher needs and empirical objectivity, as well as the success demonstrated by Handelman and Lester (2007), the text analysis program, Linguistic Inquiry and Word Count 2015, has been selected as the present study's analytical tool. LIWC is a transparent text analysis

program written to analyze the occurrence of various coded items across 80 pre-established language dimensions on a word-by-word basis. This software consists of two central processing features – the processing element and the categorical dictionaries (Tausczik & Pennebaker, 2010). The pre-established dictionaries are based upon four basic categories: standard linguistic processes, psychological processes, relativity, and personal concerns (see Table 1).

Table 1. LIWC Categories.

Category	Example Content
1. Linguistic processes	Word count, total pronouns, articles
2. Psychological processes	Affective process, positive emotions, negative emotions
3. Relativity	Time, space, motion
4. Personal concerns	Occupation, leisure activity, money/financial issues, religion

*\*Note.* Adapted from Salas-Zarate, Lopez-Lopez, Valencia-Garcia, Aussenac-Gilles, Almela, and Alor-Hernandez (2014)

The dictionaries further consist of specific language dimensions that encompass all grammatical permutations of each item. For example, the dimension titled “articles” consists of items such as “a,” “an,” and “the.” Other dimensions, however, required human evaluation of fitness. “Positive emotion,” for example, contains items such as accept (i.e., acceptance, accepting, etc.), excited (i.e., excitement, exciting, etc.), and reward (i.e., rewarding, etc.) (see Table 2).

Table 2. LIWC Dimensions.

Dimension	Example Content*
Personal pronouns	them, I, her
Common verbs	walk, went, see
Negative emotion	hurt, ugly, nasty
Certainty	always, never
Religion	Allah, amen, soul, temple

\**Note.* Examples taken from the provided software dictionary (Pennebaker Conglomerates, Inc., 2015).

Word counts may also examine structural pronoun use (“I” vs. “they”) and the author’s focus as it relates to their past, present, and future (Handelman & Lester, 2007). The program, designed by James W. Pennebaker, Roger J. Booth, and Martha E. Francis, also allows researchers to determine the frequency of particular topical references. For example, the degree to which each author references their metaphysical beliefs (i.e., God, paradise, etc.) is itemized, and can be drawn upon in specific relation to one’s research inquiry (Pennebaker Conglomerates, Inc., 2015). Further, empirical results validate LIWC’s ability to perceive meaning as it relates to social relationships, individual thinking styles, and attentional focus (Tausczik & Pennebaker, 2010).

For each manufactured category, judge agreement fell between 93 and 100%, which lends considerable validity to the use of LIWC’s pre-coded dictionaries (Tausczik & Pennebaker, 2010). Specifically, an average of 89.03% of words within the present sample were able to be

identified by the pre-established dictionary. Once one takes into account the presence of proper nouns, such as location names (i.e., Yasukuni Jinja Shrine), and other miscellaneous terms, this average indicates a high level of analytical coverage. For this reason, the present study chose to utilize this well-established and heavily validated dictionary, including a total of 15 focus dimensions displayed below (see Table 3).

Table 3. Focus Dimensions

Dimension	Example Content*
Function	Inside, another, about
I	I, I've, I don't know
We	Let's, our, us
Family	Brother, cousin, baby
Friend	Amigo, ally, colleague
Positive Emotion	Excel, important, wellbeing
Negative Emotion	Dislike, aggression, ugly
Anxiety	Anxious, avoid, confused
Anger	Aggressive, annoy, protest
Sadness	Cry, fail, hopeless
Death	Alive, casket, kill
Religion	Sunni, veil, bless
Focus Past	Ago, broke, weighed
Focus Present	Attracts, thanks, stay
Focus Future	Ahead, anticipate, fate

\*Note. Examples taken from the exported software dictionary (Pennebaker Conglomerates, Inc., 2015)

Below, Tausczik and Pennebaker (2010) provide an example of precisely how the program is able to analyze a line of text and correctly classify each dictionary item.

For example, if LIWC were analyzing the first line of the novel *Paul Clifford* by Edward Bulwer-Lytton (1842):

“It was a dark and stormy night”

the program would first look at the word “it” and then see if “it” was in the dictionary. It is coded as a function word, a pronoun, and, more specifically, an impersonal pronoun. All three of these LIWC categories would then be incremented. Next, the word “was” would be checked and would be found to be associated with the categories of verbs, auxiliary verbs, and past tense verbs. After going through all the words in the novel, LIWC would calculate the percentage of each LIWC category. So, for example, we might discover that 2.34% of all the words in a given book were impersonal pronouns and 3.33% were auxiliary verbs. The LIWC output, then, lists all LIWC categories and the rates that each category was used in the given text (p. 27).

Handelman and Lester (2007) utilized this software when comparing the linguistic differences between those who attempt suicide and those who complete the act. After analyzing the content of 40 suicide notes, the authors found that completers made fewer metaphysical references (i.e., God), more frequently referenced the future and others (social references), and were generally more positive than their unsuccessful counterparts. However, these notes tended to contain more self-blame. The authors argue that the content indicates a greater level of distress among attempters, which coincides with “cry for help” literature (Handelman & Lester, 2007). This study speaks directly to the types of insight to be gained and the validity of this specific methodological approach for studying the words of individuals who commit various types of suicide.

## Procedure

The current procedure, following collection of relevant suicide notes and manifestos, consisted of formatting, error correction, and analysis. The text of each verified transcript was converted into an individual text file in accordance with LIWC's preferred media formatting. Once each file was created, spelling checks were completed to ensure that each term had the potential to be accurately categorized. However, precautions were taken to ensure content was not altered, and grammar was left in its original form. For example, in the manifesto left by "Jihadi Jake" Bilardi, the Australian teen employed British spelling (i.e., realisation). By correcting this item to the American variation, the term was categorized, but the content remained unaltered. Conversely, Duane Morrison's suicide note contains the following line: "Don't get me wrong, I thankful that none of you had to go through what I did!" In similar instances, these grammatical errors, omissions, and word choices were left unaltered.

Once each document was processed, the pattern-based linguistic analysis was conducted using Linguistic Inquiry and Word Count 2015 (Pennebaker Conglomerates, Inc., 2015), which produces 80 output variables and provides comparable percentages for each document. Next, trends were analyzed across several factors (i.e., geography and group membership) in accordance with Institutional Anomie Theory. For the present study, it is important to distinguish an attacker's origin from the event location. 'Event location' refers to the literal location of each attack. 'Attacker origin' refers to the birthplace and/or long term residence of attacker. The only case in which birthplace and long term residence did not align was the case of Taimour Abdulwahab Al-Abdaly whose attacker origin was jointly categorized as both Iraq (i.e., birthplace) and Sweden (i.e., long term residence). Selected findings are also discussed in relation to the sample as a whole.

## **Limitations**

As is true with every study, the present research contains limitations that should be considered before the findings are discussed.

### **Data limitations.**

With regard to the writings and speeches of deceased suicide attackers, we must first consider the inequality and inaccessibility of data. To be considered for the present study, the attacker must have left some form statement prior to their death. As cited previously, Cerel et al. (2014) found that only 18.25% of suicides result in the leaving of notes, statements, and manifestos. This considerably restricts the available pool of candidates. Further, said document or audio visual material must have been accurately and completely released on the World Wide Web. This facet of the present research is intrinsically bound to complications such as Internet access and illiteracy. These features are also exacerbated, in some geographic regions, by gender inequality and standards of familial control. In order to best represent the available sample of suicide literature from these assailants, the author actively pursued a sample with significant variation in race and geographic distribution.

The present study failed to locate an equal sample of writings or recordings from female suicide attackers, a phenomenon that may relate to gender oppression or simple statistical probability (e.g., females appear to represent only a small fraction of all suicide attackers). As cited in Tausczik and Pennebaker (2010), Newman, Groom, Handelman, and Pennebaker (2008) found that “sex differences in language use show that women use more social words and references to others...” (p. 36). By acknowledging this potential influence, known gender disparities were noted for further analysis.

Further, when conducting research that involves global sampling, translation is of the utmost concern. This is an especially valid concern with regard to linguistic research. While some terms may never properly translate, the author sought to ensure that available sources were cross-validated when necessary and/or available.

### **Testing limitations.**

First and foremost, the present sample consists of 30 video transcripts, suicide notes, wills, and manifestos from a collection of suicide attackers (e.g., suicide bombers, suicide pilots, and mass suicidal shooters). This is not a large sample size, but the present sample does represent an important launching point for future research. Naturally, the sample size could be expanded in future studies to allow for greater sampling diversity and further statistical analyses. The present author also suggests expanding the current sample to include not only more attackers, but also potentially comparative groups such as control populations (i.e., traditional suicide notes or manifestos from non-suicide attackers).

With regard to data analysis, the present study took precautions relating to both search bias and the software's representation of data. First, terms such as "terrorist" represent a potential ethnographic bias and lack of neutrality. Therefore, the author utilized terms compiled from the literature review to inform their search. Additionally, it is important to note that the selected content analysis software, Linguistic Inquiry and Word Count, presents findings in terms of percentages per total word count. While this gives us a sense of comparison between documents of varying lengths, the value may differ slightly based on the total word count of each document. To battle this limitation, the authors have selected to limit their search to documents and transcripts with a minimum of 100 words. The present sample contains 30 text documents ranging in length from 100 to 4,406 words, averaging 790 words per text.

With regard to this analytical approach, programs such as LIWC are not able to interpret context, irony, sarcasm, and idioms (Tausczik & Pennebaker, 2010). For example, the term “mad” is coded appropriately as an “anger” term. However, in the line “I’m mad about him,” the intent would be miscoded. Despite this complication, Linguistic Inquiry and Word Count (2015) has been well validated and is capable of yielding insight in this particular study.

Finally, the present study is primarily exploratory in nature. While the selected content analysis software is capable of providing great insight and a foundation for future research, further tests of statistical significance would be valuable. The author suggests that future research both employ and expand upon the present methodology in order to determine the true value of any noted statistical variations found here.

### **Research Objectives**

While the present study has been declared exploratory in nature, and therefore lacks true predictive hypotheses, the framework provided above by Institutional Anomie Theory has informed the following research objectives:

1. In prior research, there has been debate regarding the existence of fundamental differences between suicidal mass shooters, and other self-sacrificial attackers (i.e., suicide bombers and suicide pilots). This study will test whether the language used by suicidal mass shooters appears fundamentally different from the language utilized by suicide bombers and pilots across multiple dimensions including; function words, pronoun use (i.e., I and we), social references (i.e., family and friend), use of emotion (i.e., anxiety, anger, sadness, positive emotion, and negative emotion), relevant topical references (i.e., death and religion), and time focus (i.e., focus past, focus present, focus future).

2. Institutional Anomie Theory suggests that in the United States, due to the prevalence of the American Dream, there is “a commitment to the goal of material success, to be pursued by everyone in society, under conditions of open, individual competition” (69) and this “is composed of four values that serve to anchor this cultural concept: achievement, individualism, universalism, & a fetishism of money” (Dolliver, 2013). This study will test whether the language of suicide attackers in the United States differs from the language of suicide attackers in other regions in ways that are consistent with Institutional Anomie Theory.

## CHAPTER 3

### RESULTS

#### **Descriptive Statistics**

A total of 30 documents from 30 different suicide attackers were selected and formatted for the current study. Below, each attacker's age, method, and geographical origin are detailed in addition to the date and location of each attack, as well as the word count for each document (see Table 4 and Figure 1).

As shown in Table 4, the featured attackers ranged from 15 to 53 years of age, with a clear majority under the age of 35 ( $n = 25$ ). Readers should note that due to the lack of available female manuscripts for the present sample, sex-related effects were examined but not controlled for in the final stage of analysis.

The final sample consisted of 16 suicide pilots, five suicide bombers, and nine suicidal mass shooters originating from the following locations: Australia, Brazil, Canada, China, Egypt, England, Germany, Japan, Lebanon, South Korea, Sweden, the United States of America, Vietnam, and Gaza City. Future research should seek to utilize a sample that more equally represents suicide pilots, bombers, and mass shooters for equal comparison. As illustrated in Figure 1, 53.3% of attackers originated from Asia ( $n = 16$ ). Conversely, 76.7% ( $n = 23$ ) of attacks were committed on North American land or property (i.e., event location).

Table 4 additionally details the event date and word count for each resulting document. Chronologically, the events span from October 1944 to March 2015. The selected documents range in length from 100 to 4,406 words with an average of 790 words per text. Given the

percentile format provided by Linguistic Inquiry and Word Count, these documents are considered statistical comparable.

Table 4. Descriptive Statistics.

Name	Age	Method	Origin of Attacker	Event Date	Event Location	Word Count
Nobuo Aihana	18	Plane	Japan	5/4/1945	United States*	241
Taimour Abdulwahab Al-Abdaly**	28	Bomb	Iraq/Sweden	12/11/2010	Sweden	281
Haruo Araki	Unknown	Plane	Japan	5/11/1945	United States*	131
Mohammad Atta**	33	Plane	Egypt	9/11/2001	United States	2518
Jake Bilardi**	18	Bomb	Australia	3/11/2015	Iraq	4406
Charles Bishop**	15	Plane	United States	1/5/2002	United States	167
Sebastian Bosse	18	Gun	Germany	11/20/2006	Germany	306
Seung Hui Cho	23	Gun	South Korea	4/16/2007	United States	1961
Tadasu Fukino	26	Plane	Japan	1/6/1945	United States*	244
Robert Hawkins	19	Gun	United States	12/5/2007	United States	186
Nobutaka Inoue	18	Plane	Japan	4/28/1945	United States*	303

\**Note.* Event locations followed by (\*) refer to attacks made on United States property, not locations within the continental United States (e.g., American naval ships). Thus, this also denotes a Kamikaze attack (see Table 8). See Appendix A for source information.

\*\*Attackers affiliated with Islam or Islamic extremism (see Table 9).

\*\*\*Female suicide attacker.

Name	Age	Method	Origin of Attacker	Event Date	Event Location	Word Count
Mohammad Sidique Khan**	30	Bomb	England	7/7/2005	England	333
Seiichi Kosaku	19	Plane	Japan	4/16/1945	United States*	205
Geddy Lee Kramer	19	Gun	United States	4/29/2014	United States	496
Masanobu Kuno	Unknown	Plane	Japan	5/25/1945	United States*	110
Marc Lepine	25	Gun	Canada	12/6/1989	Canada	450
Gang Lu	28	Gun	China	11/1/1991	United States	1722
Isao Matsuo	23	Plane	Japan	10/28/1944	United States*	338
Duane Morrison	53	Gun	United States	9/27/2006	United States	1786
Kiyoshi Ogawa	24	Plane	Japan	5/11/1945	United States*	174
Wellington de Oliveira	23	Gun	Brazil	4/7/2011	Brazil	371
Reem Riyashi**/**	22	Bomb	Gaza City	1/14/2004	Israel	100

\**Note.* Event locations followed by (\*) refer to attacks made on United States property, not locations within the continental United States (e.g., American naval ships). Thus, this also denotes a Kamikaze attack (see Table 8). See Appendix A for source information.

\*\*Attackers affiliated with Islam or Islamic extremism (see Table 9).

\*\*\*Female suicide attacker.

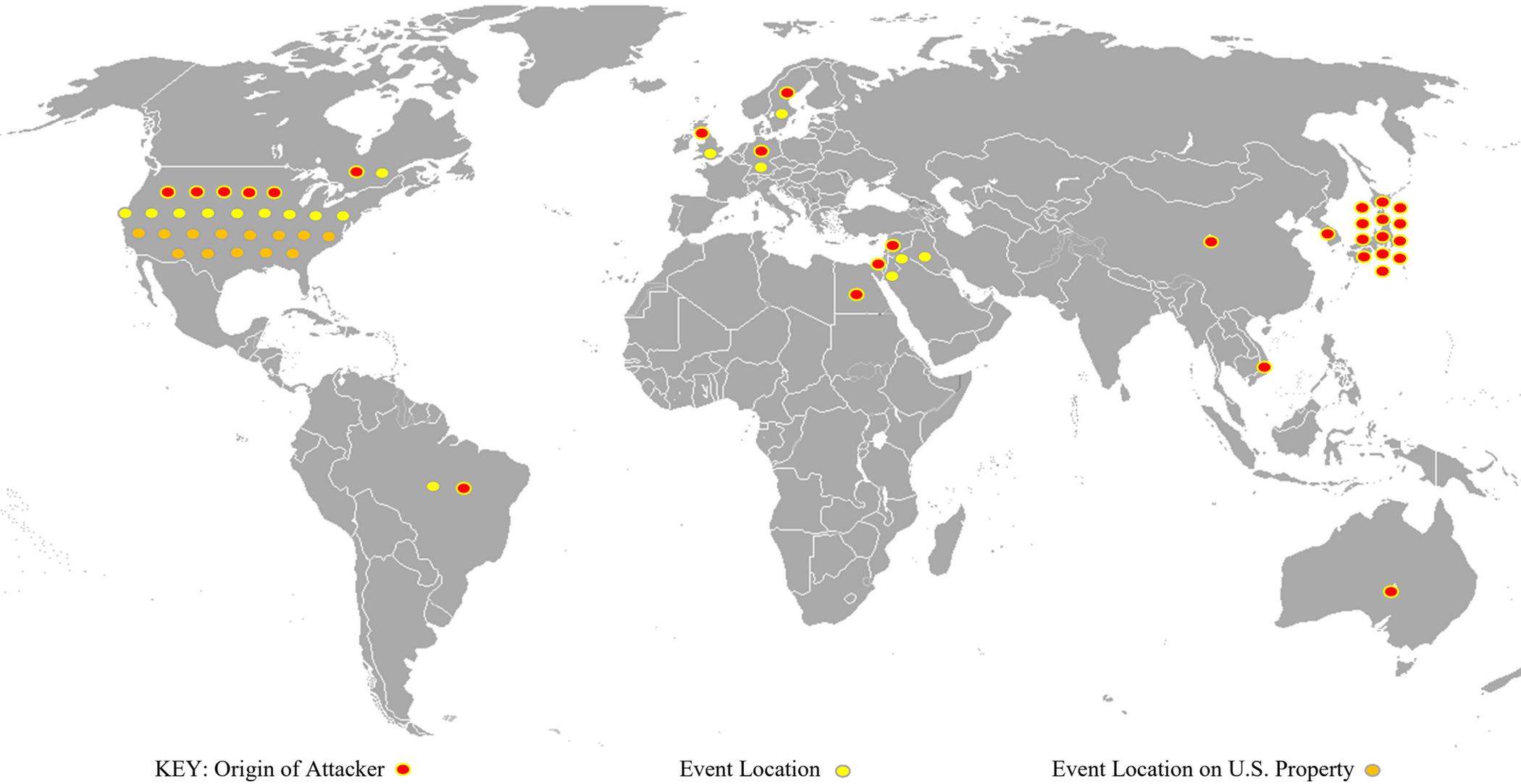
Name	Age	Method	Origin of Attacker	Event Date	Event Location	Word Count
Jamal Sati**	23	Bomb	Lebanon	9/6/1985	Lebanon	567
Kenichi Shibuya	31	Plane	Japan	6/11/1945	United States*	438
Joe Stack	53	Plane	United States	2/18/2010	United States	3229
Kenji Tomisawa	23	Plane	Japan	4/6/1945	United States*	269
Ryoji Uehara	22	Plane	Japan	5/11/1945	United States*	818
Sanehisa Uemura	25	Plane	Japan	10/26/1944	United States*	285
Jiverly Wong	41	Gun	Vietnam	4/3/2009	United States	545
Teruo Yamaguchi	23	Plane	Japan	6/21/1945	United States*	712

\**Note.* Event locations followed by (\*) refer to attacks made on United States property, not locations within the continental United States (e.g., American naval ships). Thus, this also denotes a Kamikaze attack (see Table 8). See Appendix A for source information.

\*\*Attackers affiliated with Islam or Islamic extremism (see Table 9).

\*\*\*Female suicide attacker.

Figure 1. Geographic Distribution: Origin vs. Event Location



\*Note. Base map taken from Educyclopedia (2011).

## Research Objectives

Given the volume of available linguistic dimensions provided by Linguistic Inquiry and Word Count, the following dimensions were selected, based upon previous research and significance, as focus dimensions: function words, pronoun use (i.e., I and we), social references (i.e., family and friend), use of emotion (i.e., anxiety, anger, sadness, positive emotion, and negative emotion), relevant topical references (i.e., death and religion), and time focus (i.e., focus past, focus present, focus future).

Table 5 contains the results for each document and dimension of interest, as well as sample means. In the first column of the table below (see Table 5), the name of each document's author (e.g., the corresponding suicide attacker) is provided. The remaining columns detail the LIWC results for each of the selected focus dimensions. The final row provides a mean for each dimension across the collective sample.

It is important to note that each score provided represents a percent value. For example, if a document received a score of 1.20 under the 'anger' dimension, this would indicate that 1.20% of the content was anger-related terms. While this output format provides researchers with comparable scoring, variations in document length must be considered. Seiichi Kosaku and Teruo Yamaguchi's samples, for example, received identical scores for sadness at 0.98%. However, due to variations in document length, these results do not represent equivalent word counts, and thus there could be differing interpretations about whether one writer was "more sad" than the other.

Please note that the present study is exploratory and descriptive in nature, and therefore lacks any measure of statistical significance. Further analysis will be required in order to

determine the broader applicability of any findings discussed below. The potential implications of these findings are further explored in the subsequent chapter.

Table 5. Summary Output.

Name	Function	I	We	Family	Friend	Anxiety	Anger	Sadness
Charles Bishop	54.59	5.39	0.00	0.00	0.00	0.60	1.20	0.00
Duane Morrison	60.19	10.64	0.28	0.39	0.00	0.73	0.39	0.73
Gang Lu	49.94	5.17	0.23	0.12	0.52	0.29	1.28	0.58
Geddy Lee Kramer	54.03	10.48	0.00	0.00	0.00	0.20	1.61	1.21
Haruo Araki	57.25	12.21	0.76	0.76	0.00	0.00	2.29	1.53
Isao Matsuo	57.10	8.28	2.66	1.18	1.18	0.00	1.78	0.00
Jake Bilardi	52.50	4.93	0.23	0.30	0.32	0.45	1.57	0.34
Jamal Sati	52.03	7.05	0.53	1.59	0.53	0.53	0.71	0.53
Jiverly Wong	46.24	8.81	0.00	0.00	0.73	0.00	0.92	0.37
Joe Stack	54.20	4.52	1.05	0.40	0.12	0.28	0.81	0.46
Kenichi Shibuya	60.27	5.71	0.68	3.88	0.00	0.00	1.83	1.60
Kenji Tomisawa	56.51	10.04	0.74	2.23	1.49	0.37	1.12	0.00
Kiyoshi Ogawa	58.62	9.77	0.00	5.17	0.00	0.00	0.57	0.00
Marc Lepine	54.00	6.00	0.22	0.22	0.00	0.00	1.33	0.89
Masanobu Kuno	59.09	6.36	0.00	3.64	0.91	0.00	1.82	0.00

Name	Function	I	We	Family	Friend	Anxiety	Anger	Sadness
Mohammad Sidique Khan	55.86	6.91	4.20	1.50	0.30	0.60	1.20	0.00
Mohammed Atta	56.04	0.56	0.91	0.36	0.20	0.75	1.07	0.08
Nobuo Aihana	53.94	10.79	0.41	7.88	0.41	0.83	2.90	0.83
Nobutaka Inoue	54.79	10.23	0.33	1.65	0.66	0.00	0.99	0.99
Reem Riyashi	51.00	12.00	0.00	0.00	0.00	0.00	1.00	0.00
Robert Hawkins	62.37	13.98	0.54	0.00	3.79	0.00	2.69	2.15
Ryoji Uehara	58.68	5.50	0.24	1.22	0.24	0.86	0.37	0.24
Sanehisa Uemura	59.30	7.37	0.00	3.16	0.00	0.00	0.00	0.35
Sebastian Bosse	56.21	11.44	0.00	1.96	1.63	0.00	2.94	1.31
Seiichi Kosaku	51.22	5.85	0.98	1.95	1.95	0.00	3.41	0.98
Seung Hui Cho	56.81	2.75	2.86	0.36	0.31	0.66	4.13	0.25
Tadasu Fukino	53.69	4.51	0.82	1.23	0.41	0.41	0.00	1.64
Taimour Abdulwahab al-Abdaly	57.65	3.20	1.42	2.85	0.00	1.78	2.14	0.00
Teruo Yamaguchi	58.85	7.87	0.98	1.40	0.42	0.14	0.70	0.98
Wellington de Oliveira	57.14	9.16	0.54	2.16	0.81	0.00	0.27	1.35
MEAN	55.67	7.58	0.72	1.59	0.56	0.32	1.43	0.65

Name	PosEmo	NegEmo	Death	Religion	Focus Past	Focus Present	Focus Future
Charles Bishop	1.20	1.80	0.60	1.80	4.19	9.58	4.19
Duane Morrison	2.41	3.53	0.50	0.11	6.38	10.13	2.80
Gang Lu	2.50	3.19	0.41	0.23	3.60	6.85	1.28
Geddy Lee Kramer	2.02	3.43	0.81	0.00	5.04	9.48	0.60
Haruo Araki	6.11	3.82	0.76	0.00	3.82	8.40	4.58
Isao Matsuo	7.10	1.78	1.78	0.89	3.55	9.76	3.55
Jake Bilardi	2.70	2.81	0.68	1.88	5.88	4.20	0.86
Jamal Sati	7.05	2.29	1.06	1.06	2.82	6.70	1.23
Jiverly Wong	2.02	2.57	0.00	0.00	4.95	7.16	0.37
Joe Stack	2.32	2.57	0.25	0.12	4.89	7.43	0.74
Kenichi Shibuya	5.94	3.65	2.28	0.68	1.37	14.84	1.83
Kenji Tomisawa	8.18	2.23	0.74	0.37	3.72	13.75	4.09
Kiyoshi Ogawa	6.32	0.57	1.15	1.72	2.30	10.34	4.02
Marc Lepine	2.44	2.67	1.33	0.00	3.56	9.78	0.89
Masanobu Kuno	4.55	2.73	0.91	0.91	1.82	17.27	1.82

Name	PosEmo	NegEmo	Death	Religion	Focus Past	Focus Present	Focus Future
Mohammad Sidique Khan	3.00	1.80	0.60	3.90	0.60	11.41	2.70
Mohammed Atta	4.37	2.42	0.52	6.39	2.94	10.64	2.22
Nobuo Aihana	3.32	4.56	0.41	0.41	3.32	8.30	0.41
Nobutaka Inoue	8.58	1.98	0.66	0.99	2.97	12.87	1.98
Reem Riyashi	5.00	1.00	1.00	9.00	3.00	6.00	2.00
Robert Hawkins	3.76	5.38	0.00	0.00	3.76	18.82	1.61
Ryoji Uehara	4.52	2.32	2.08	1.22	3.06	9.17	2.69
Sanehisa Uemura	7.37	0.70	0.35	0.70	4.91	12.63	2.11
Sebastian Bosse	6.21	5.23	0.00	0.33	3.27	14.05	3.59
Seiichi Kosaku	5.37	4.39	0.49	0.00	2.93	7.80	2.44
Seung Hui Cho	2.40	6.88	1.02	3.31	3.82	11.83	2.35
Tadasu Fukino	6.97	2.87	1.23	0.00	4.10	8.20	1.64
Taimour Abdulwahab al-Abdaly	1.78	2.85	1.78	9.25	1.07	10.68	3.20
Teruo Yamaguchi	5.20	2.39	1.12	0.56	3.23	9.69	2.25
Wellington de Oliveira	1.89	1.89	2.43	1.62	2.70	11.59	1.89
MEAN	4.42	2.88	0.90	1.58	3.45	10.31	2.20

### Research Objective One

*ROI. Test whether the language used by suicidal mass shooters appears fundamentally different from the language utilized by suicide bombers and pilots across the selected focus dimensions.*

In the graphic below (see Table 6), the summary output provided in Table 5 has been displayed by attack method. In fulfillment of research objective one, this data was compiled to test whether the language used by suicidal shooters appeared fundamentally different from the language utilized by both suicide bombers and pilots, henceforth collectively referred to as ‘other self-sacrificial attackers.’

Table 6. Output by Attack Method.

Method	Function	I	We	Family	Friend	Anxiety	Anger	Sadness
Shooter (n = 9)	55.21	8.71	0.52	0.58	0.86	0.21	1.73	0.98
Bomber (n = 5)	53.81	6.82	1.28	1.25	0.23	0.67	1.32	0.17
Pilot (n = 16)	56.50	7.19	0.66	2.26	0.50	0.27	1.30	0.61
SAMPLE MEAN	55.67	7.58	0.72	1.59	0.56	0.32	1.43	0.65

Table 6. Output by Attack Method Cont.

Method	PosEmo	NegEmo	Death	Religion	Focus Past	Focus Present	Focus Future
Shooter (n = 9)	2.85	3.86	0.72	0.62	4.12	11.08	1.71
Bomber (n = 5)	3.91	2.15	1.02	5.02	2.67	7.80	2.00
Pilot (n = 16)	5.46	2.55	0.96	1.05	3.32	10.67	2.54
SAMPLE MEAN	4.42	2.88	0.90	1.58	3.45	10.31	2.20

Overall, the sample displayed considerable consistency across all 15 focus dimensions, suggesting that shooters do not fundamentally differ from other self-sacrificial attackers. Future research that employs control groups could help demonstrate whether words of suicide shooters, bombers, and pilots are more similar to each other than they are to the words from other individuals (e.g., various types of non-suicide attackers). Further, such research would provide an expanded scale for the comparison of variations. In addition, one area that may prove particularly fruitful for additional research is pronoun use. The collective sample of suicide attackers more frequently cited themselves (i.e., the first person singular ‘I’) ( $M = 7.58$ ) than the collective ‘we’ ( $M = 0.72$ ). Shooters, in particular, were found to use the former, ‘I’, more than any other grouping ( $M = 8.71$ ), and ‘we’ the least ( $M = 0.52$ ), creating the greatest differential at 8.19% percent. This trend, in addition to the minimal social references (e.g., Family  $M = 0.58$ , Friend  $M = 0.86$ ) employed, suggest a lack of social engagement and a general tilt toward isolation, a finding supported by previous research.

Suicidal mass shooters do not appear to dramatically differ across any other focus dimensions. While the present sample’s general consistency restricts exploration of this objective, these findings do affirm the present inclusion criteria and research previously cited (Lankford, 2012). At this time, the only dimensions displaying variations greater than 3% were that of ‘religion’ (range = 0.62 - 5.02) and ‘focus present’ (range = 7.80 - 11.08), in which suicide bombers represented the highest and lowest percentile respectively. Yet, even these variations remain small and require further statistical analysis. These findings, or lack thereof, suggest that shooters do, at least linguistically, belong in the same realm of research.

In summary, there does appear to be a small but notable variation with regard to pronoun use, but shooters largely appear consistent with their other self-sacrificial counterparts. However, further statistical analysis is required.

### Research Objective Two

*RQ2. Test whether the language of suicide attackers in the United States differs from the language of suicide attackers in other regions in ways that are consistent with Institutional Anomie Theory.*

Below, the summary output has been reorganized by geographical origin of attacker (see Table 7). This data was compiled to test for linguistic differences between suicide attackers from the United States and all other featured locations, in accordance with the provided theoretical framework. Please note that the origin of attacker has been selected as the demarcating variable as opposed to event location since one’s origin profoundly shapes an individual’s psychology, behavior, and resulting linguistics, while event location may be temporary or reflect recent travel.

Table 7. Output by Attacker Origin.

Origin	Function	I	We	Family	Friend	Anxiety	Anger	Sadness
United States (n = 5)	57.06	9.00	0.37	0.16	0.78	0.36	1.34	0.91
Other (n = 25)	55.39	7.30	0.79	1.87	0.52	0.31	1.45	0.59
SAMPLE MEAN	55.67	7.58	0.72	1.59	0.56	0.32	1.43	0.65

Table 7. Output by Attacker Origin Cont.

Origin	PosEmo	NegEmo	Death	Religion	Focus Past	Focus Present	Focus Future
United States (n = 5)	2.34	3.34	0.43	0.41	4.85	11.09	1.99
Other (n = 25)	4.84	2.78	0.99	1.82	3.17	10.16	2.24
SAMPLE MEAN	4.42	2.88	0.90	1.58	3.45	10.31	2.20

As with research objective one, the sample displayed considerable consistency across all 15 focus dimensions. Therefore, the present study cannot firmly assert that the words of American attackers differ significantly from those of their international counterparts without further statistical analyses. However, the author would like to highlight two findings at this time: pronoun use (i.e., I vs. We) and emotional expression (i.e., positive and negative emotion). As explained below, both results, while small in scale, do support previous research regarding Institutional Anomie Theory, and therefore should be considered for future research.

First, as with the results regarding suicidal mass shooters, American attackers more frequently cited themselves (i.e., the first person singular 'I') ( $M = 9.00$ ) than the collective 'we' ( $M = 0.37$ ) (see Table 7). All other documents displayed a similar trend ( $M = 7.30$ ,  $M = 0.79$  respectively). However, the American sample displayed the greatest use of individual voice, while the remaining sample employed 'we' more than twice as frequently. When considered in conjunction with the almost complete lack of familial references ( $M = 0.16$ ), the American sample appears to be considerably more individualistic.

Second, the dimensions of both positive and negative emotion seem to suggest a more negative American sample, as is consistent with previous IAT research (Akers & Sellers, 2013). At less than half of both the sample mean ( $M = 4.42$ ) and comparison group ( $M = 4.84$ ), attackers originating from the United States utilized a mere 2.34% positive emotional content. Further, the American sample expressed more negative emotion ( $M = 3.34$ ) than the international comparison group ( $M = 2.78$ ).

Again, these findings are primarily exploratory at this time. Further statistical analyses are required in order to both confirm the presence of and properly assess the significance of these

linguistic patterns. The findings detailed above, however, should be considered a valid launch point for future research.

### Additional Findings

Upon further analysis, two additional patterns were discovered and should be equally considered as grounds for future research. Collectively, a sample average of 4.42% (range = 1.20 - 8.58) created a low threshold for variance in the dimension of positive emotion (see Table 8). Nevertheless, the Kamikaze pilots of Japan’s Imperial ranks ( $M = 6.12$ ) were found to be nearly twice as positive as their counterparts ( $M = 3.12$ ). While further analysis is again required, this finding could speak to not only Japanese culture (e.g., familial honor), but also the influence of military institutions.

Table 8. Kamikaze Attacks.

Collective	Function	I	We	Family	Friend	Anxiety	Anger	Sadness
Kamikaze (n = 13)	56.87	8.04	0.66	2.72	0.59	0.20	1.37	0.70
Other (n = 17)	54.75	7.23	0.77	0.72	0.54	0.40	1.49	0.60
SAMPLE MEAN	55.67	7.58	0.72	1.59	0.56	0.32	1.43	0.65

Table 8. Kamikaze Attacks Cont.

Collective	PosEmo	NegEmo	Death	Religion	Focus Past	Focus Present	Focus Future
Kamikaze (n = 13)	6.12	2.61	1.07	0.65	3.16	11.00	2.57
Other (n = 17)	3.12	3.08	0.76	2.29	3.64	9.78	1.91
SAMPLE MEAN	4.42	2.88	0.90	1.58	3.45	10.31	2.20

The sample again bore a low ceiling for variance in the dimension of religion (see Table 9) with an average of 1.58% religious content (range = 0 – 9.25). However, as shown in Table 9, those affiliated with or inspired by Islam and Islamic extremism ( $M = 4.75$ ) appear to utilize more religious content than the remainder of the sample ( $M = 0.62$ ).

Table 9. Output by Religious Affiliation

Affiliation	Religion
Islam (n = 7)	4.75
Other (n = 23)	0.62
SAMPLE MEAN	1.58

*\*Note.* Religious affiliation was determined by both document content and available profile information.

Finally, in an attempt to contribute to the literature regarding suicide attackers more generally, the following dimensions will be summarily discussed: pronoun use (i.e., I and we), social references (i.e., family and friend), use of emotion (i.e., anxiety, anger, and sadness), relevant topical references (i.e., death and religion), and time focus (i.e., focus past, focus present, focus future).

As previously discussed in both research objective one and research objective two, the overall sample more highly referenced themselves ( $M = 7.58$ ) than ‘we’ ( $M = 0.72$ ). This trend of individualism and/or isolation is further supported by the sample’s minimal use of social references. Both friend ( $M = 0.56$ ) and familial ( $M = 1.59$ ) dimensions reported minimal scores, and often bore no social references at all (see Table 5). While these results may be complicated by the author’s use of proper nouns (e.g., sibling names), both points may speak to the author’s social engagement (Tausczik & Pennebaker, 2010) and integration (Durkheim, 1951).

The overall sample also displayed remarkably low content with regard to the following dimensions: anxiety ( $M = 0.32$ , range = 0 – 1.78), anger ( $M = 1.43$ , range = 0 – 4.13), sadness ( $M = 0.65$ , range = 0 – 2.15), death ( $M = 0.09\%$ , range = 0 – 2.43), and religion ( $M = 1.58$ , range 0 – 9.25) (see Table 5). Again, the minimal dimension thresholds do not allow for significant variation, and therefore further statistical analysis is required. However, these dimensional

outputs do prompt a discussion of suicidality, depression, and the institutional influence of religion.

To close, the present author compared the use of past, present, and future focus dimensions. At an average of 10.31%, references to the present exceeded the relatively equal occurrences of past ( $M = 3.45$ ) and future ( $M = 2.20$ ) oriented content. This finding stands in contradiction to Handleman and Lester's (2007) future-oriented findings regarding those that complete suicide.

In summary, the following linguistic dimensions were found to speak to the sample overall: pronoun use (i.e., I and we), social references (i.e., family and friend), use of emotion (i.e., anxiety, anger, and sadness), relevant topical references (i.e., death and religion), and time focus (i.e., focus past, focus present, focus future). Meanwhile, positive emotion and religion were the only *focus* dimensions that clustered in relation to these additional research variables. The implications and limitations of these findings are explored in the following chapter.

## CHAPTER 4

### DISCUSSION AND CONCLUSIONS

#### **Discussion**

According to Santifort-Jordan and Sandler (2014), the frequency and severity of suicide attacks has intensified in recent history. From the 1881 attack on reigning Tsar Alexander II, to the rise of Japan's imperial kamikaze force, to the rampant gun violence plaguing American hometowns, self-sacrificial attacks continue to span not only time, but religion, nationality, and group affiliation. Yet, few empirical studies have sought to examine the personal statements of these attackers (Salem, Reid, & Chen, 2008).

To fill this gap in the existing literature, the present study employed rhetorically-sensitive content analysis software (LIWC 2015) in its exploration of 30 suicide notes, manifestos, and video transcripts obtained through a web-based snowball methodology. During analysis, 89.03% of the provided content was coded under the pre-established LIWC2015 dictionary. In future research, this level of analytical coverage may only be improved upon through the construction of a custom dictionary.

In accordance with the provided theoretical framework, two research objectives were proposed and several potential points were presented for discussion. However, due to the limited exploratory nature of the present study, the statistical significance of these trends were not accessed. Moving forward, the author will address many key points of variation and contribute to the discussion of an overarching attacker profile.

## **Research Objective One**

*ROI. Test whether the language used by suicidal mass shooters appears fundamentally different from the language utilized by suicide bombers and pilots across the selected focus dimensions.*

The present results display a considerable level of internal consistency. These findings suggest that shooters largely do not differ from their other self-sacrificial counterparts. While these findings do restrict our present exploration of this research objective, they do affirm the present inclusion criteria and offer support to previous research (e.g., Lankford, 2012). In 2012, for example, Dr. Adam Lankford asserted that many rampage shooters were simply ‘non-ideological suicide terrorists.’ It has been suggested in years of communications research that an individual’s linguistic patterns and selected subject matter are direct reflection of said individual’s internal processes (Pettit, 2013; Laver & Garry, 2000). If the reader accepts this notion, then the present research can equally assert the presence of similarities between suicidal mass shooters and other self-sacrificial attackers on a psychological level.

General similarities considered, the present author chose to highlight the potentially intriguing dimensions of pronoun use (i.e., I vs. we) in both this objective and the next. As previously discussed, the collective sample more frequently referenced themselves ( $M = 7.58$ ) than the collective ‘we’ ( $M = 0.72$ ). Mass shooters, however, displayed the greatest use of individual voice. This trend, when considered in conjunction with the sample’s minimal social references may speak to the social engagement (Tausczik & Pennebaker, 2010) and integration (Durkheim, 1951) of this collective.

The scholars Durkheim and Merton assert that a well-integrated individual is both sociable and compliant. Conversely, they emphasize that malintegration and isolation produce deviance within a society (Akers & Sellers, 2013). If the pronoun patterning displayed by both

the sample and shooters more specifically does in fact reflect a certain level of isolation, this finding may also suggest that said isolation may be contributing factor to the attackers' deviance. Further, prior research has suggested that many self-sacrificial attackers exhibit predictive signs of suicide to which isolation and malintegration may be a contributing factor (Lankford, 2012).

Other potential explanations include but are not limited to group affiliation, attacker origin and event location, and the pursuit of personal significance (i.e., egocentricism). Lankford and Hakim (2011) suggest that the key difference between suicidal mass shooters and other self-sacrificial attackers is the involvement in or influence of an organization. It may be the case that shooters traditionally do not have a collective to speak of, resulting in fewer references to the collective 'we.' For example, the English suicide bomber, Mohammad Sidique Khan, utilized the phrase "We are at war..." while American shooter, Geddy Lee Kramer declared "I'm a sociopath. I want to hurt people." Given that seven out of nine shooters either originated from or completed attacks in the United States, this finding must also be considered in conjunction with the findings of research objective two. Finally, this grouping and the sample as a whole may simply be displaying egocentric personalities, which supports considerable research regarding attackers willingness to sacrifice themselves in pursuit of personal significance (Victoroff, 2009) or fame (Lankford, 2016).

The most sizeable variations shown in Table 6 came from a different collective entirely. Suicide bombers scored both the highest in religious references and lowest in 'focus present.' First, please note that suicide bombers and radical jihadists are inextricably intertwined in the present study with 100% of featured bombers ( $n = 5$ ) dedicating their acts to Islam. Therefore, this finding cannot be considered separate from the religious breakdown found in Table 9, where those affiliated with Islam employed 4.13% more religious references. With regard to 'focus

present,' the present author suggests that the volume of religious content and rhetorical goals limited the available personal speech and resultant time-orientation within this sample. Taimour Abdulwahab al-Abdaly, for example, wrote "In the name of Allah, the Merciful, your children must die." However, even these trends remain minimal at just over 3% variance. Therefore, additional research is required regarding the linguistics and motivations of both suicide bombers and suicidal rampage shooters.

### **Research Objective Two**

*RQ2. Test whether the language of suicide attackers in the United States differs from the language of suicide attackers in other regions in ways that are consistent with Institutional Anomie Theory.*

The present results, again, indicate a considerable amount of consistency across both groupings regarding attacker origin. However, both pronoun use and emotional expression present cause for discussion. For this objective, attacker origin was selected as the demarcating dimension as opposed to event location. It is the opinion of this author that culture, presently defined as the shared values, beliefs, standards, and aims of a society or nation (Lincoln & Guillot, 2006), is largely imparted in youth. Therefore, one's origins would have the greatest impact on not only their critical formation, but also their later actions.

At the heart of research objective two lies a theoretical framework provided by Institutional Anomie Theory. This macro lens has been applied to the present study in an attempt to uncover variations in suicide attacks across a broad geographical area, and explore the potential influence of various factors on social deviance. In this instance, the concept of the 'American dream' has informed a look into the variations between American suicide attackers and the remaining sample.

In review, the ‘American dream’ refers to the uniquely American emphasis placed on financial success, which has been found to promote a distinct form of societal strain and neglect of non-financial institutions (Dolliver, 2013). Upon perceived failure, individuals and societies alike experience various levels of anomie or normlessness. According to Akers and Sellers (2013), such a state may arise from disruptions in one’s institutions (i.e., the financial market) or individual stressors (i.e., family death). Durkheim argues that these anomic states, no matter their origin, promote greater deviance in a society.

Generally speaking, the entirety of the present sample could arguably be considered to have been facing normlessness. Whether it be mental instability or in defense of a failing nation, each attacker’s profile exhibits various stressors that may have also contributed to their final state. Gang Lu, for example, believed he had been unjustly denied a prize for his dissertation, which included a monetary award and an increase in potential employment opportunities. In his state of distress, Lu returned to campus with a weapon, killing multiple faculty members and a fellow student (Langman, 2009). However, the present research does indicate a greater sense of individualism and negativity among the American sample, which supports years of previous IAT research (Akers and Sellers, 2013; Dolliver 2013).

One’s pronoun use, as discussed previously with research objective one, can yield a number of implications such as trends of individualism. As with suicidal mass shooters, American attackers more frequently cited themselves ( $M = 9.00$ ) than the collective ‘we’ ( $M = 0.37$ ) (see Table 7). However, as stated previously, this finding is complicated by both the overlap between location and methodology, and this findings general alignment with the total sample trend. Future research will be need to statistically isolate these factors in order to

determine if American suicide attackers do in fact display a more egocentric perspective. For now, the present findings do support previous IAT research.

Next, the present results also suggest that American suicide attackers express greater negativity than their counterparts. For example, Joe Stack was driven by his hatred for institutional bureaucracy, and openly discusses perceived societal failures in his final letter. He writes:

“...this is where I learned that there are two “interpretations” for every law; one for the very rich, and one for the rest of us...That little lesson in patriotism cost me \$40,000+, 10 years of my life, and set my retirement plans back to 0. It made me realize for the first time that I live in a country with an ideology that is based on a total and complete lie.”

An American attacker such as Joe Stack has been reinforced by the institutions of his society to value the monetary rewards and stability of hard work. Whether rooted in a warped sense of entitlement or honest perceptions of systematic failures, such beliefs naturally inform a negative sense of the world, and this is mirrored in the attacker’s linguistic patterns.

Further, our society’s insistent reinforcement of free expression empowers citizens to express both positive and negative emotions (equally considered reflections of psychological processes under the four provided LIWC categories, see Table 1). Conversely, the generational and cultural differences between modern American attackers and World War era Kamikaze pilots may explain the contradicting positivity displayed by the latter sample. With the notions of family and military honor in mind, as well as Orbell and Morikawa’s (2011) trends of altruism in kamikaze literature, a connection can be drawn between the culture and institutions surrounding Kamikaze acts, and the elevated rate of positive expressed emotion. However, one must also consider the potential effects of coercion with regard to Kamikaze pilots.

These men were traditionally writing to various family members and often spoke largely of their service and national pride. Commander Haruo Araki, for example, wrote the following: “I, who have lived from the eternal principals of justice, will forever protect this nation from enemies that surround us.” In this instance, it is clear to see how one’s institutions, shared beliefs, and even generational birth may influence the content of such documents. However, said sentiments may also, at least in part, reflect those of the military commanders and government officials demanding this act of self-sacrifice.

While again the American population cannot be isolated from the shooters at this time, these findings do support previous research and suggest that, at least in writing, suicide attackers do vary in relation to their given society. These findings are purely exploratory however, and should be considered merely grounds for future empirical research. Moreover, it is important to note that any findings represent only information extrapolated from suicide attackers who left suicide notes or martyr videos. Therefore, present conclusions cannot be automatically extended to all suicide attackers, since those who do not leave notes may intrinsically differ from those who do.

### **Additional Findings**

As is stated the abstract above, the current study also sought to add to previous literature regarding suicide attackers more broadly using aggregated sample data. Given the relative consistency of the present findings, the following discussion should add statistical content to the profile a suicide attacker. The present sample contained a total of 30 documents from suicide attackers around the globe. However, the overwhelming majority of featured attackers were below the age of 35 and male. As extensively discussed above, the collective displayed a greater use of ‘I’ than ‘we’ and minimal social references. These findings support previous research

relating to both Institutional Anomie Theory (Akers & Sellers, 2013) and social integration (1951), as well as research specific to suicide attackers (Lankford & Hakim, 2011).

Overall, the present sample also displayed remarkably low content with regard to the following dimensions: anxiety ( $M = 0.32$ ), anger ( $M = 1.43$ ), sadness ( $M = 0.65$ ), death ( $M = 0.09\%$ ), and religion ( $M = 1.58$ ) (see Table 5). The first three featured dimensions may reflect either a lack of emotional expression, which would be supported by the minimal presence of both positive and negative emotion, or a general absence of such said thoughts and expressions. If the latter, these findings would call for an intriguing exploration of suicidal predisposition in self-sacrificial attackers. However, further research is required.

While the low prevalence of both death and religion may seem contrary to popular belief, the majority of documents analyzed spoke very little of such matters directly. It is important to remind the consumer of a critical limitation of the selected software at this time. Programs such as Linguistic Inquiry and Word Count (2015) are not currently able to interpret context, irony, sarcasm, and idioms (Tausczik & Pennebaker, 2010). Therefore, future construction of a custom dictionary may again prove helpful in future research. However, as it stands, the current findings regarding religion do support previous research regarding successful suicide attempts (Handleman & Lester, 2007).

Finally, at an average of 10.31%, suicide attackers more greatly spoke of the present than either the past ( $M = 3.45$ ) and future ( $M = 2.20$ ). This finding in the category of relativity (see Table 1) stands in direct contradiction to Handleman and Lester (2007) who suggest that those who complete the act of suicide more frequently reference the future. Further research is needed to explore this finding. It may be the case that suicide attackers, as opposed to ordinarily suicidal

citizens, more often focus on the significance of the moment and the message they intend to send rather than on their personal future.

## **Conclusions**

In prior research, there has been considerable debate regarding the existence of fundamental differences between suicidal mass shooters, and other self-sacrificial attackers (i.e., suicide bombers and suicide pilots). The present study sought to explore the relevant linguistics of both these populations, and geographically aggregated samples in accordance with Institutional Anomie Theory. Yet, despite the consistent media interest in self-sacrificial attacks, few empirical studies have utilized the firsthand writings of attackers in an empirical study.

To fill this gap in the literature, the present study employed a web-based snowball collection method and computer-based content analysis software. The present study was exploratory in nature, and therefore offered two research objectives as opposed to predictive hypotheses. First, the author sought to test for fundamental linguistic differences between suicidal mass shooters and all other featured attackers. While the low thresholds, general consistency of sample, and lack of statistically significant measures prohibited any definitive conclusions from being drawn, the collective of suicidal mass shooters did appear to display a greater use of the focus dimension 'I' than 'we,' which may be inextricably intertwined with the trends of individualism found American attackers.

During this stage of analysis, suicide bombers, who are wholly represented by known Islamic profiles, were also found to more highly employ more religious references and less frequently be oriented towards the present. Again, these findings are strictly exploratory at this time and lack measures of statistical significance. However, the overall consistency displayed by

the current sample does directly support the present inclusion criteria regarding suicidal mass shooters and previous research (Lankford, 2012).

Next, the current study sought to explore the linguistic variations between attackers originating from the United States versus an aggregated sample of remaining attackers as informed by Institutional Anomie Theory. The featured American sampling, largely comprised of mass shooters, also more frequently exhibited trends of individualism, and were found to be more highly negative than their counterparts, which supports years of previous IAT research regarding the cultural concepts of achievement and a fetishism of monetary success (Dolliver, 2013; Akers & Sellers, 2013). Again the low thresholds and general consistency of the present sample limit the definitive nature of these findings without further statistical analysis.

Finally, in its tertiary aim, the present study sought to contribute to the overall existing profile of a self-sacrificial attacker. The highly consistent findings suggest that such attackers are generally males below the age of 35 who display an egocentric voice, rarely make references to family, friends, death, and religion; and show little sign of anxiety, anger, or sadness (which are dimensions traditionally considered preemptive signs of suicide).

According to Orbell and Morikawa (2011), “Explanations for suicide attacks abound. Yet the literature remains fragmented...” (p. 297). While the present study has contributed to this battle, no definitive evidence could be asserted at this time due to restrictions in statistical analyses. However, this author would assert that the study at hand fulfilled its exploratory objectives, and that future research can benefit from the foundation laid here.

In addition to expanding the statistical analyses, future researchers ought to consider expanding the sample to include a more diverse and potentially representative sample in terms of not only gender, but all of the factors featured above. Finally, the prevalence of proper nouns,

such as locations and individual's names, call for the creation of a custom dictionary within the present software. The author suspects that instances of friend and familial references would increase, and that 100% analytical coverage could be attained. Through the analysis of firsthand writings and transcriptions, we may hopefully continue gain greater insight into the minds of suicide attackers.

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## APPENDIX

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