

Overt attacks and covert thoughts



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ABSTRACT

The process in which an individual moves from radical opinion to violent action is of immense interest to law enforcement and counterterrorism agencies. A deep understanding of these processes could help in the complex pursuit to thwart terrorism. Our goal is to gain insight into the thought processes of a lone wolf terrorist prior to an event. Herein, we consider the case of the Army psychiatrist Major Nidal Malik Hasan. Utilizing a novel web-based text analysis environment that helps visualize the distribution of words within a single text corpus, we analyze Hasan's presentation at Walter Reed Medical Center in 2007 and his secret messages to Anwar al-Awlaki in 2009. We show that the analysis of the content of Hasan's speech and his correspondence can reveal his intention and motivation. The use of a case analysis of Nidal Hasan is unique, in that he was directly corresponding with a senior member of al-Qaeda, while he was an active duty Army officer. Thus, this paper contributes to our understanding of intent and thought patterns of some lone wolf terrorists.

1. Introduction

Lone wolf terror is one of the most important trends in terrorism (Joose, 2017). While the number of lone wolf attacks has increased each decade since the 1970s (Spaaij, 2010), researchers have failed to establish a usable profile (Gill, Horgan, & Deckert, 2014). Gill et al. (2014) studied an international collection of 119 mostly lone wolf terrorists; while no single profile was identified, they found that many seemed to be socially isolated. Analysts have noted that in the majority of cases, others knew something with regard to various aspects of the offender's extremist ideology prior to the event. In fact, lone wolves frequently take actions in advance of an attack that make them vulnerable to detection (Burton, 2007). In most cases, the offenders produce letters or public statements prior to the event outlining his/her beliefs (Gill et al., 2014, 429). Thus, profiling lone wolves may yet be possible (Moskalenko & McCauley, 2011).

The ability of the intelligence agencies to prevent terror attacks demands a clear understanding of the processes that lead to violent behavior. Hamm and Spaaij (2015) argue that insight into these processes may provide intelligence communities with signatures that an individual with a terrorist intent will demonstrate in preparing for an attack. In order to gain deeper insights in this method of violent behavior, researchers have examined the lone attackers' characteristics (Spaaij, 2010), the narratives that promote lone wolf terror events (Kaplan, 1997), and have conducted case studies on lone wolf terrorists (Waits & Shors, 2014; Michel & Herbeck, 2015; Willman, 2011; Meyer, 2013). Others emphasize the importance of focusing on behavior rather

than attempting to identify and interpret sociodemographic characteristics (Gill et al., 2014). However, important questions remain as to the thought processes that facilitate engagement in this method of violent behavior. Herein, we take the behavioral research in terrorism studies, a step further and introduce a novel approach to study the thought processes of a lone wolf terrorist prior to an attack. To improve our understanding of lone wolf terrorist's mindset, we utilize a novel method to analyze communication. Using a web-based text analysis platform, we introduce an innovative use of the Army psychiatrist, Major Nidal Malik Hasan's power point presentation and his messages to Anwar al-Awlaki. Nidal Hasan conducted the mass shooting at the military complex of Fort Hood in November 2009. Analyzing text can decipher subtle shifts in personality and reflect characteristics of self, which can then provide a workable profile of an individual (Kernot, Bossomaier, & Bradbury, 2017). Further, it allows researchers to study the original text in a new light (Schreibman, Siemens, & Unsworth, 2015), identify areas for action, and initiate further investigation (Maramba et al., 2015).

Until recently, terrorism research has been mostly unempirical (Silke, 2001; Lum, Kennedy, & Sherley, 2006). It is only in the last decade that scholars have begun to empirically investigate terrorism and radicalization (Sageman, 2014). Traditionally, most studies have used the interview method with captured terrorists. However, interviews and their interpretations are profoundly complex activities (Horgan, 2012) as they give "rise to significant conceptual and interpretation challenges" (Gubrium & Holstein, 2002). Furthermore, these studies can suffer from retrospective construction, which assumes that

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awareness of intention is referred retrospectively to the action (Aarts, Custers, & Wegner, 2005). Therefore, they have the proclivity to construct specific moments as significant in retrospect. Our research is a promising way to understand the mind of a lone wolf, while offering novel pathways to understand deeper levels of cognition. Herein, we avoid retrospective construction and temporal limitations of previous research. Our hope is to contribute to the development of counterterrorism strategies in mitigating the risks posed by such individuals. Our approach could potentially help predict violent behavior and thus, guide both policymaking and intelligence agencies. The rest of the paper proceeds as follows. In the next section, we provide [A brief review of the literature](#). We then proceed with the [Method](#) section. Finally, we conclude.

2. A brief review of the literature

Lone wolf terrorism is not a new phenomenon (Borum, 2013). Borum (2013) notes that the use of the term *lone wolf* as it applies to terror attacks has its origin in the 1990s, when Alex Curtis, a white supremacist, envisioned a revolutionary movement that combined overt propaganda with covert violent attacks. Kaplan (1997) contends that the notion of *leaderless resistance*, as it was devised and propagated to the far right, “sought to make a virtue of weakness and political isolation”; in fact, it was a “mark of despair than a revolutionary strategy.” Kaplan defines *leaderless resistance* as a “lone wolf operation in which an individual, or a very small, highly cohesive group, engage in acts of anti-state violence independent of any movement, leader or network of support.” Hewitt (2003) uses the term *freelancer*, which he defines as “individuals who are not members of a terrorist group, or members of an extremist organization under the orders of an official of the organization.” For the sake of consistency, herein, we will use the general term: lone wolf.

There is no single, universally accepted definition of lone wolf terrorism (Spaaij & Hamm, 2015). Simon (2013) refers to lone wolf terrorists as individuals “acting alone or with minimal support from one or two other people,” and who perpetrate their violence “for purely personal or financial gain.” Pantucci’s (2011) categorization of lone wolf terrorism refers “to individuals pursuing Islamist terrorist goals alone, either driven by personal reasons or their belief that they are part of an ideological group.” Thus, Pantucci’s definition expands the term to *Lone Wolf pack* when referring to “small isolated groups pursuing the goal of Islamist terrorism together under the same ideology, but without the sort of external direction from, or formal connection with an organized group or network” (2011). Spaaij & Hamm (2015) argue that Pantucci’s conflation of lone wolves with small cells or lone wolf packs, which lack hierarchical organizational structure, confuses, rather than clarifies, definitional and conceptual boundaries. Becker (2014) defines lone wolf terrorism as “ideologically driven violence, or attempted violence, perpetrated by an individual who plans and executes an attack in the absence of collaboration with other individuals or groups.” Thus, only politically motivated, violent acts planned and carried out alone by an individual are considered (Becker, 2014). It is important to note that many lone wolf terrorists rely on the support of enablers who provide inspiration (Spaaij & Hamm, 2015). Juergensmeyer, 2017 argues that many of the acts that appear to be solo ventures conducted by rogue activists have broader ideological of validation behind them. Herein, we adopt Becker’s definition of lone wolf terrorism.

It is argued that lone wolves are more likely to struggle with a mental illness (Gruenewald, Chermak, & Freilich, 2013a, 2013b). The psychiatric community has identified the fundamental dynamics of violent radicalization: (i) Most terrorists are psychologically normal as individuals, and do not fit a medical diagnostic category; (ii) Radicalization is not precipitous, but a process with many way stations...; (iii) Violent radicals are creatures of a collective identity; (iv) Leaders are essential to radicalization; (v) Radicalization occurs when followers submit to the collective identity and leaders identify a shared enemy as

a target for violent behavior; (vi) Radicalization involves a continuing reinforcement by manipulative leaders, consolidating collective identity, externalizing, and justifying ... [and then] requiring violence against the enemy (Webster Commission Report, 2009). Corner and Gill (2015) tested whether significant differences in mental illness exist between lone wolf terrorists and group-based terrorists and examined whether there are distinct behavioral differences between them. They found that the odds of a lone wolf terrorist having a mental illness are 13.49 times higher than a group actor having a mental illness. Further, those with a mental illness were more likely to have a life changing event, were more likely to have been a victim of prejudice, and experienced proximate and chronic stress. However, mental illness is not necessarily the key variable for predicting the overwhelming cases of lone wolf attacks (Bjelopera, 2013).

McCauley and Moskaleiko (2014) suggest two profiles of lone wolf terrorists: i) disconnected-disordered are individuals with a grievance and weapons experience who are social loners and often show signs of psychological disorder; ii) caring-compelled are those who strongly feel the suffering of others and feel a personal responsibility to reduce or avenge this suffering. Thus, the latter refers to altruistic motivations with a perceived obligation to a cause. For example, Nidal Hassan and Faisal Shahzad justified their actions as selfless acts indicative of their commitment to a greater cause (Bates, 2012). Radicalization can begin when individuals become frustrated with their lives, society, or government policies (Precht, 2007). Some factors that have been attributed to the radicalization process are: i) social and religious identification; ii) prison, family and friend influences; iii) socio-economic status; iv) government policies; v) criminal history; and vi) psychological states (Veldhuis & Stauin, 2009; Rahimullah, Larmar, & Abdalla, 2013). Stern (2003) argues that lone avengers have a loose sense of ideology and a history of activity in other extremist organizations. In fact, rebuff from extremist groups, which the lone wolf initially desires to affiliate, is often a preface to solidification of the belief structure (Meloy & Yakeley, 2014).

Bakker and de Graaf (2010) argue that lone wolves are a nightmare for the police and intelligence community because they often do not share their intentions with others prior to attacks. They conclude that not the profile of the perpetrator, but their modus operandi offer clues for a better response to this particular threat. Becker (2014) argues that lone wolves are weak opportunists whose target selection is predominantly driven by ideology but constrained by their relative weakness, which leads many of them to strike in areas with which they have some familiarity. Meyer (2013) argues that lone wolf attacks are difficult to detect through intelligence due to limited communication between plotters. Thus, Meyer combines crime scripts, situational crime prevention and rational planning to study how to impede attacks. Analyzing the 2011 Norway attacks, Meyer demonstrates that entry control measures that focus on checking identity and searching for firearms could potentially impede attacks. Others argue that lone wolves are more likely to be socially embedded within wider networks than be socially isolated (Burton, 2007; Gill et al., 2014). In this case, communications prior to the commission of events can make lone wolf identification possible. Communication analysis is a promising way to progress from documentation of intelligence to achieving high quality intelligence. The usual method of analyzing communication is scarce resource intensive and is prone to human error. Herein, we use a novel method to efficiently evaluate large amount communication instantly.

2.1. Current study

We focus on the thought processes rather than attempting to identify sociodemographic characteristics of lone wolves. This allows us to get a sense of the individual’s thought patterns, which can then be used to identify anonymous persons with similar intentions. Herein, we offer the potential to detect lone wolf terrorists based on their communications. Using Voyant, a web-based text analysis environment, Nidal Hasan’s presentation at Walter Reed Medical Center and his messages to

Anwar al-Awlaki will be analyzed. Evaluating text corpora can be a promising way to understand the mind of a lone wolf. Voyant's visualization offers novel pathways to deeper levels of cognition (Stafford, 2011). Its functionality allows us to extract useful information from Hasan's speech and correspondence, and helps identify key concepts that can be revealed by computerized text processing, currently available at no cost on the Web.

2.2. Voyant

Voyant is a web-based text analysis environment (Rockwell, 2003; Rockwell, Sinclair, Ruecker, & Organisciak, 2010). Text analysis can be used for interpretative purposes (Schreibman et al., 2015); it can serve as a reading tool that can extract distinctive words and perform Keyword in Context (KWIC) analysis (Fielding, Lee, & Lee, 1998). KWIC helps identify underlying connections that are being implied by the text being analyzed (Leech & Onwuegbuzie, 2007) and can provide new insight. Importantly, KWIC functionality searches for a keyword in the text corpus and analyzes its meaning in relation to a fixed number of words that precede and follow it (Baskarada & Koronios, 2013). Word counts are based on the belief that people have distinctive vocabulary and word usage patterns (Leech & Onwuegbuzie, 2007). We recognize these patterns as linguistic fingerprints (Pennebaker, Mehl, & Niederhoffer, 2003). Generally, critical words for an individual will be used more often (Carley, 1993). Miles and Huberman (1994) count several reasons for counting themes: (i) to identify patterns more easily, (ii) to verify a hypothesis, and (iii) to maintain analytic integrity. Counting can enhance understanding by preventing researchers from overweighing or underweighing the emergent themes (Sandelowski, 2001). Counting function words is also important syntactically (greater numbers convey significance) (Schreibman et al., 2015). This functionality allows researchers to get a sense of the individual's style, which can then be used in trying to identify anonymous persons (Foster, Tonkyn, & Wigglesworth, 2000; Schreibman et al., 2015).

3. Method

3.1. Nidal Hasan: an analysis

Our goal is contribute to discovering the sequence of individual trajectories leading to lone wolf attacks. The criteria that were drafted in order to find a suitable subject for the analysis were that i) the individual must fit the previously mentioned definition of a lone wolf terrorist; and ii) the individual must have been under periods of investigation. The reason for the latter criterion was to enable us easy access to FBI documents on lone wolf attacks. The case of Nidal Hasan fits the stated criteria and makes him a pertinent study. Nidal Hasan was born and raised in Virginia, U.S. After high school he joined the US Army, which put him through medical school (BBC, 2009).

3.2. Nidal Hasan's presentation at Walter Reed Medical Center

Hasan spent six years as a psychiatrist at Walter Reed. In 2007, he was scheduled to conduct a grand rounds power point presentation on a medical topic of his choosing as a culminating exercise of the residency program (Priest, 2009). The title of Hasan's nearly an hour long presentation was "The Qur'anic World View As It Relates to Muslims in the U.S. Military," which consisted of 50 slides.¹ At the start of his presentation, Hasan delved into the tenets of Islam, the number of Muslims in the U.S. military, and the concept of jihad.² He then talked about the

¹ The slides are available here: <http://unconstrainedanalytics.org/wp-content/uploads/2015/05/nidal-hasan-powerpoint.pdf>.

² We have chosen only segments of Hasan's speech, which are most relevant to our study. His complete power point presentation is available here: <http://video.foxnews.com/v/2663135028001/?#sp=show-clips>.

notion of "complete submission" in Islam by making references to the Qur'an (slides 22–24). Utilizing Voyant, we analyzed his speech on the concept of submission. He said,

"God expects complete submission, not coming in half-heartedly, he wants to you to come in whole-heartedly, and sometimes I get the impression that although this sounds like a simple concept to understand that we really don't appreciate the gravity of what full submission means. Sometimes we have a construct in our minds of what God is or what God would do. And if someone presents something that differs to that we then reject it."

As Voyant's algorithm goes through the text, it positions the words in such a manner that the most frequent terms are also the largest. The word cloud places small words within spaces left by larger words. This corpus includes 76 total words and 55 unique word forms. Voyant selects "god", "submission" and "heartedly" as the most frequently occurring words. This highlights Hasan's heavy emphasis on submission to god as a pertinent ingredient of true faith. (See Fig. 1.)

Under the slide (#48) titled "Comments," Hasan talked about Osama bin Laden, the Taliban, and suicide bombers. He said:

"Osama bin-Laden is an interesting person. You have this multi-millionaire almost billionaire, that goes ahead and gives up the life of luxury to fight against the Russians with the help of the United States. And so in a sense he really embodies the spirit of jihad. That someone is going to give up their wealth and status to fight in God's cause. And God would expect that. That's highly looked upon. Now, that doesn't mean anyone agrees with the rest of the stuff he does, but again, that's not the important thing. The important thing is that there are lots of Muslims out there from different parts of the world that are identifying with his cause."

This corpus has 111 total words and 79 unique word forms.³ We utilize Voyant's TextArc visualization technique, which is designed to discover patterns and concepts by leveraging human visual processing and intuition to help extract meaning (TextArc, 2001).⁴ TextArc presents the text as two concentric spirals. The spirals include a weighted centroid of terms and an arc that follows the terms. The arc loops clockwise around the spiral (Fig. 2). The user can adjust the speed of the loops. Frequently used words will emerge from the background and are drawn at their average location in the corpus. Each occurrence of the term in the corpus pulls the term closer to its location on the perimeter; and hence, the position of the term is the average of these forces.⁵ Here, the most frequent words are: "cause" (2), "important" (2), "fight" (2), "agrees" (1), and "ahead" (1). Additional information is revealed when we point the cursor at the word "cause", which appears inside the spiral. Its rays are visible showing where it is collocated; it links to "fight" and "important". This is important because word associations make sense in context. The tight integration between "fight", "cause" and "important" allows a deeper insight into Hasan's belief system. It reveals Hasan's conviction in fighting for what he perceived to be an important cause.

Under the "Conclusions" slide (#9), Hasan argues that,

"God expects full loyalty. He promises heaven and threatens hell. And it is something to be taken seriously. Muslims may be seen as moderate and in some cases that may be seen as compromising from the Qur'anic worldview. But God is not moderate, as I try to point out. And then, the statement that someone made in an article that I

³ The word "that" was removed from the text corpus before analysis as it did not provide additional insight.

⁴ TextArc compliments approaches such as Computational Linguistics; further, information is available here: <http://www.textarc.org/TextArcOverview.pdf>. Also see: <http://www.textarc.org/>.

⁵ The instructions for the Voyant visualization tools are available here: The <https://voyant-tools.org/docs/#!/guide/textualarc>.



Fig. 1. Most frequent words: god (3), submission (2), and heartedly (2). Only the high frequency words stand out.

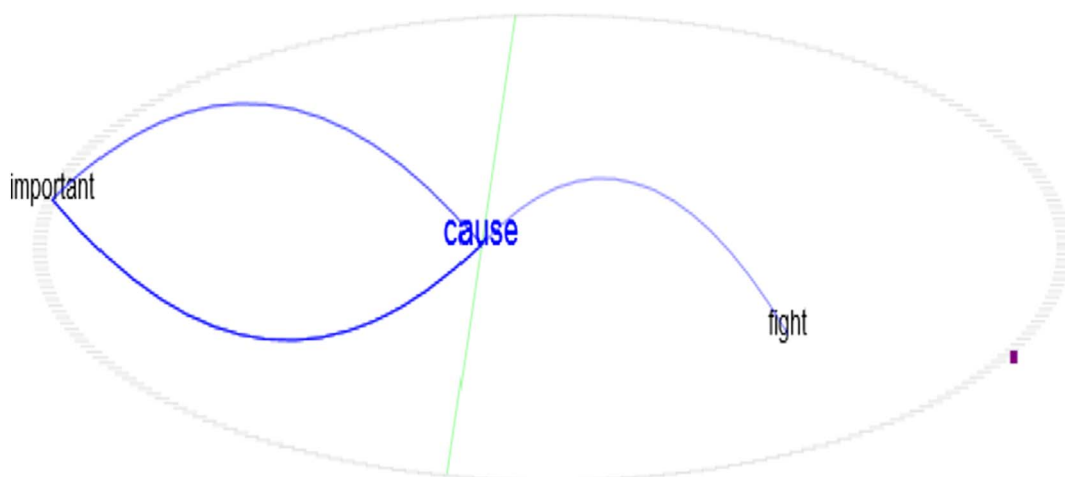


Fig. 2. TextArc visualization technique represents the current text on the perimeter of a circle. Each occurrence of a term pulls the term toward its location on the perimeter and the position of the term is the mean of these forces. High frequency words stand out.

was reading, ‘I love the Qur’an and being a Muslim. But I don’t want to live under Islamic rule.’ I think a lot of Muslims fall in that category and that’s why they like living in Western countries like the United States but even then it doesn’t condone destroying an Islamic state, which is part of the conflict. And then, as I showed - fighting to establish an Islamic state to please God even by force - is condoned. I hope I made that clear, from the Qur’anic worldview - from the Qur’anic perspective. And then Muslim soldiers should not serve in any capacity that renders them at risk of hurting or killing believers unjustly.”

Here, we analyze the concordance of the key word in context for the passage. The content has 173 total words and 102 unique word forms. The most frequent words in the corpus are: “God” (3); “Islamic” (3); “Qur’anic” (3); “like” (2); and “moderate” (2). By default, Voyant selects the most common term, as the key word (in here “god”). The keyword enables us to

Table 1
Key word in context.

Left	Term	Right
...from the Qur’anic worldview. But	God	expects full loyalty.
...an Islamic state to please	God	is not moderate...
	God	even by force - is condoned...

Note. The key word is “god”. Voyant identifies words that appear before and after the key word.

quickly locate relevant matches (Rockwell & Sinclair, 2016). Double-clicking on the most common word triggers a phrase search. This functionality reveals words in context. By comparing words that appear before and after the key word, Voyant identifies the underlying connections implied in speech. The words collected around the keyword make the statements meaningful. The results show how Hasan envisaged the Qur’anic worldview. For him, full loyalty to god was fundamental. He perceived god not to be moderate. Importantly, he notes that use of force in order to establish an Islamic state is justified (Table 1).

As he presents the final slide, labeled “Recommendation,” he notes that Muslim soldiers should have the option of being released as conscientious objectors to decrease adverse events. He adds,

“Now the conscientious objector status as it stands-if you read the fine print - doesn’t allow you to object to certain wars. You have to be against all wars. So for a Muslim-this poses a dilemma, when clearly Jihad is one of the hallmarks-or can be one of the hallmarks of Islam.”

In his first slide, he promised to identify Muslim soldiers that have religious conflicts with the current wars. However, he failed to provide a clear recommendation as to how mental health providers and commanders can identify these soldiers. Instead, he presented a slide labeled “Muslims in the Military” (#12), noting that the Qu’ran states that, “whoever kills a believer intentionally, his punishment is hell.” During the question and answer period he was asked, “How can mental

health providers and commanders identify soldiers that might actually have conflict with being a Muslim and being in the military?" The questioner pressed whether "anyone that is a practicing Muslim is someone that we should keep an eye on and be aware of?" Hasan replied, "Yeah... Absolutely, a sensitive issue, you're right. I am not sure how to maneuver over that. You are right. You're absolutely right. How do you maneuver that?" In all of these early statements in 2007, it is apparent that, Hasan was pressing closer to his final mission. Next, we study the FBI documents on Hasan.

3.3. Webster commission report on fort hood

The FBI requested a full investigation of the manner in which the agency and its Joint Terrorism Task Forces (JTTF) handled and acted on counterterrorism intelligence before and after the Fort Hood shootings. In 2012, Judge William H. Webster delivered to the FBI the *Final Report of the William H. Webster Commission on The Federal Bureau of Investigation, Counterterrorism Intelligence, and the Events at Fort Hood, Texas*. An unclassified version of the report [found here (pdf)] and a copy of Judge Webster's transmission letter are publically available [found here (pdf)] (FBI, 2012). The FBI provided the commission with more than 100 formal and informal interviews, meetings, and briefing and while the Webster Commission found shortcomings in the FBI policy guidance, information review protocols, and training, they did not find intentional misconduct or the disregard of duties on the part of the agents (FBI, 2012). Next, we will analyze Hasan's correspondence with al-Awlaki.

3.4. Communication with al-Awlaki

The San Diego JTTF identified the first two communications from Hasan to al-Awlaki as a reason for concern because of the message's content and implications that the sender was a U.S. military officer. At this time, Hasan was working as a psychiatrist at the Walter Reed Army Medical Center. Thus, a lead was set on Hasan to the JTTF in the Washington, D.C. Field Office (WFO) (Webster Commission Report, 2009). Months later, WFO conducted an assessment of Nidal Hasan. In the meantime, San Diego field office had acquired and reviewed additional messages and emails from Hasan to al-Awlaki and two emails from al-Awlaki to Hasan. WFO did not assess Hasan to be involved in terrorist activities. While San Diego field office advised WFO that the assessment was inadequate, neither field office took further action (Webster Commission Report, 2009). We will review the contents of some of the emails sent to al-Awlaki by Hasan, which can shed some light in analyzing his thought processes. In his first email to al-Awlaki, Hasan writes,⁶

"There are many soldiers in the U.S. armed forces that have converted to Islam while in the service. There are also many Muslims who join the armed forces for a myriad of different reasons. Some appear to have internal conflicts and have even killed or tried to kill other us soldiers in the name of Islam i.e. Hasan Akbar, etc. Others feel that there is no conflict. Previous Fatwas seem vague and not very definitive. Can you make some general comments about Muslims in the U.S. military? Would you consider someone like Hasan Akbar or other soldiers that have committed such acts with the goal of helping Muslims/Islam (Lets just assume this for now) fighting Jihad and if they did die would you consider them Shaheeds (Martyrs)?"

(Webster Commission Report, 2009)

Hasan's initial email was marked as a product of interest. The

second and third email discussed Israel and questioned the permissibility of firing unguided rockets into Israel knowing its potential to indiscriminately kill civilians (Webster Commission Report, 2009). Hasan's fourth message to al-Awlaki, sent on January 18, 2009, was lengthier and discussed how the Western world viewed Hamas (Webster Commission Report, 2009). On February 16, 2009, Hasan again wrote to al-Awlaki inquiring about alternative methods to donate to his website; later in the day, another message was sent by Hasan to inform al-Awlaki about a \$5000 scholarship prize to be awarded for the best essay entitled: *Why is Anwar al-Awlaki a great activist and leader?* The analysts found this message a product of interest (Webster Commission Report, 2009). On February 19, 2009, al-Awlaki responded for the first time to Hasan, "I don't travel so I won't be able to physically award the prize and I am too 'embarrassed' for a lack of the better word to award it anyway" (Webster Commission Report, 2009). On the same day, Hasan replied to al-Awlaki,

...You have a very huge following but even among those there seems to be a large majority that are paralyzed by fear of losing some aspect of dunya (Temporal World). They would prefer to keep their admiration for you in their hearts...

(Webster Commission Report, 2009)

In this email, he also stressed his willingness to provide any monetary assistance that al-Awlaki may need, noting his financial situation to be his biggest strength. However, he did add that everything should be legal and in accordance with the U.S. Law (Webster Commission Report, 2009). This email to al-Awlaki was not identified to be a product of interest. On February 28, 2009, Hasan sent al-Awlaki another email attaching a document titled "*Public Opinion in the Islamic World on Terrorism, al Qaeda, and U.S. Policies*." He wrote, "This well done survey sponsored by the U.S. government through the University of Maryland shows that most Muslims feel that US is trying to undermine Islam. It substantiates an earlier study it did as well as other studies by other organizations" (Webster Commission Report, 2009). On the same day, Hasan sent al-Awlaki a link to a news article about Imam Yayha Hendi of the Islamic Society of Frederick, Maryland saying, "He is well known in the Greater Washington Area and serves the U.S. military as Imam for the Bethesda medical center. A true vision of what the government views as a good role model for all Muslims" (Webster Commission Report, 2009). The FBI Special Agent identified this email to be a product of interest (Webster Commission Report, 2009). On May 31, 2009, Hasan sent another message to al-Awlaki. He wrote,

"I heard a speaker defending suicide bombings as permissible and have been using his logic in debates to see how effective it really is. He contends that suicide is permissible in certain cases. He defines suicide as one who purposely takes his own life but insists that the important issue is your intention. For example, he reported a recent incident were an American Soldier jumped on a grenade that was thrown at a group of soldiers. In doing so he saved 7 soldiers but killed himself. He consciously made a decision to kill himself but his intention was to save his comrades and indeed he was successful. So, he says this proves that suicide is permissible in this example because he is a hero. Then he compares this to a soldier who sneaks into an enemy camp during dinner and detonates his suicide vest to prevent an attack that is known to be planned the following day. The suicide bombers intention is to kill numerous soldiers to prevent the attack to save his fellow people the following day. He is successful. His intention was to save his people/fellow soldiers and the strategy was to sacrifice his life...I would assume that a suicide bomber whose aim is to kill enemy soldiers or their helpers but also kill innocents in the process is acceptable."

(Webster Commission Report, 2009)

3.5. Text analysis of Hasan's last email

Hasan's last email was analyzed using Voyant. The word cloud

⁶ This message and most of the messages that followed contained misspellings and other typographical errors in their original form. We present part of the texts with corrections.

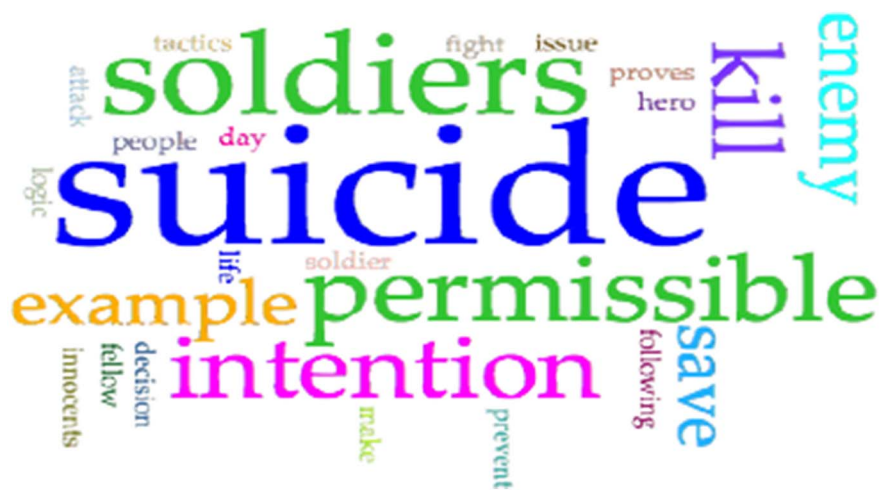


Fig. 3. The word cloud content includes 313 total words. “Suicide”, “soldiers”, and “intention” are the most common words. However, the word “suicide” is the largest word in the cloud. It’s important to note that the absolute position of the words and their color are not significant.



Fig. 4. Link tree of related terms are generated from the entire corpus. This visualization shows a web of terms by depicting them in a network through the use of a force directed graph. The frequency of the words is indicated by relative size of the term.

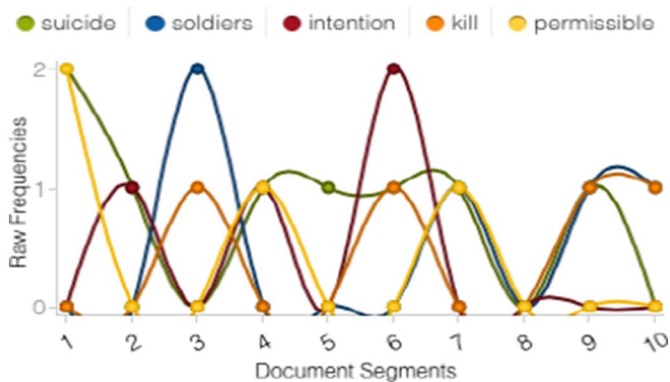


Fig. 5. Here the trends within contexts are depicted. “Permissible”, “soldiers” and “intention” seem to be major concerns. “Permissible” has a significant peak at segment 1, though it resurges at segment 4.

content includes 313 total words. Most frequent words in the corpus of his email are: “suicide” (8); “soldiers” (5); “intention” (4); “kill” (4); and “permissible” (4) (Fig. 3). The word “suicide” has the highest

frequency suggesting a significant presence in Hasan's thought trajectory. Suicide is also heavily linked to the word “permissible”. Next, we utilize Voyant's link tree feature. The link tree reveals a web of terms (Fig. 4). This mode shows connections between different words and how often they are paired with the thickness of the line between them. In other words, links represent the collocation of terms. It depicts words in a network through the use of a force directed graph (TAPOR: Research Tools For Text Analysis, 2016). “Suicide”, “intention” and “soldiers” are linked to other words in the text. However, “permissible” and “suicide” are heavily linked. Also illuminating are keywords in the context data. We find that [“soldiers, kill”] and [“intention”, “kill”] are repeated in the same document segment at points 3 and 6 (Fig. 5). Both segments are followed by the word “permissible” at points 4 and 7. This indicates Hasan's urge to justify the notion of killing soldiers and thus, his intent to do so.

3.6. Psychological evaluation

McCauley and Moskalenko (2014) identify four common characteristics of assassins and school attackers: grievance, depression, unfreezing, and weapons use outside the military. They suggest these

four characteristics suggest the importance of means and opportunity. Grievance is a motive for violence, weapons experience provides a means, and depression and unfreezing lower the opportunity cost of violence as the perpetrator has less to lose. They note Hasan turned to the religion after the death of his parents, seems to have had no close relationships after he was transferred to Fort Hood, and was about to be transferred to Afghanistan (unfreezing). They argue that Hasan saw himself discriminated against as a Muslim (personal grievance) and perceived the war on terrorism as a war on Islam (political grievance). On the day of the shooting, he brought two weapons to Fort Hood, one a sophisticated *cop-killer* pistol for which he purchased a laser sight—indicating experience with weapons beyond weapons training the U.S. Army provides for physician-psychiatrists (McCauley & Moskalkenko, 2014). While Hasan showed no sign of depression, he had three of the four characteristics common to assassins and school attackers: unfreezing, grievance, and weapons experience (McCauley & Moskalkenko, 2014).

In 2010, a military panel conducted a mental evaluation of Hasan. The board found that the U.S. Army psychiatrist was not mentally ill (Levin, 2016). The board reviewed 10,000 documents, interviewed witnesses, and evaluated Hasan (Levin, 2016). The investigations revealed a quiet man whose life spiraled downward after a series of tragedies: the deaths of his father in 1998 and his mother in 2001, followed by the September 11 terror attacks; collectively, these events led Hasan to a deeper involvement with religion (Levin, 2016). The sanity board concluded that, at the time of the crime, Hasan was not suffering from a mental illness, did not have any clinical diagnosis when evaluated and he was not “unable to appreciate the nature and quality and wrongfulness of his conduct” (Levin, 2016). He referred to his motivations as altruistic and justified his actions as selfless acts indicative of his commitment to a greater cause.

4. Conclusion

The analysis of Hasan's presentation at Walter Reed Medical Center highlights the malignant nature of his thought trajectory and intention. Hasan addressed the concept of complete submission in Islam by making references to the Qur'an. For him, submission to god was paramount. He perceived god not to be moderate. He believed that god would expect his full loyalty. He also emphasized the importance of fighting for a cause. He noted that use of force in order to establish an Islamic state was justified. When pressed, he revealed his inability to reconcile the Qur'anic worldview with the obligations of serving in the U.S. Army. In 2009, Hasan asked al-Awlaki whether killing innocents in the process of killing soldiers is permissible. Our results show that by this time, he had firmly concluded that such actions were permissible. The heavy collocation between the words “suicide” and “permissible” signify his justification for the killings that followed. While Hasan showed no sign of depression, he had three of the four characteristics common to assassins: unfreezing, grievance, and weapons experience (McCauley & Moskalkenko, 2014). He had no history of violence before his attack at Fort Hood, was not suffering from mental illness, and was not involved in criminal activity. After the shootings, he stated that he wanted to become a martyr (The Guardian, 2013). He perceived his motives as altruistic and justified his actions as indications of his commitment to a greater cause.

Our aim was to contribute to the study of terrorism by providing insights into the thought processes of a lone wolf that may provide intelligence communities with markers that an individual with a terrorist intent will demonstrate in preparing for an attack. Scholars argue that with more primary data, psychological profiling of lone wolves will be substantiated as a successful measure (Danzell & Maisonet Montañez, 2016). However, there are hesitations toward profiling potential lone wolves (Danzell & Maisonet Montañez, 2016). This is because profiling may become narrow in scope ignoring the possibility of threats that do not fit the profile (Danzell & Maisonet Montañez, 2016) or create one-

dimensional measures which can ignore the multidimensionality of terrorism (Rae, 2012). Here, we have offered a novel approach that lacks the inefficiencies of subjective markers.

Our study relies on a single case. An obvious criticism may relate to the generalizability of one case. However, single case studies can provide a nuanced, empirically rich, holistic account of specific phenomena (Willis, 2014). Willis (2014) argues that from “various epistemological and analytical standpoints, single case study analysis can incorporate both idiographic *sui generis* cases and, where the potential for generalization may exist, nomothetic case studies suitable for the testing and building of causal hypotheses”. Other studies have also benefitted from in-depth analysis derived from single case studies (e.g., Jack Roller).

Our findings can contribute to identifying other persons with violent intentions. The method used here is a promising tool, which offers novel pathways to underlying motives and hidden themes. In future studies, we aim to combine text analysis with neurophysiological data and geospatial data - to not only detect the intent of potential lone wolves but also to create an algorithm that can prevent violent behavior. This allows investigators to identify anonymous persons with covert thoughts and prevent terrorist attacks.

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