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Linguistic and Narrative Trends Among Islamic State Videos and Magazines

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Abstract

This study applies the semi-automated method of sentiment analysis to magazines and videos that have been produced by the self-proclaimed Islamic State (IS) in order to determine what thematic narratives are prevalent within this propaganda and how consistent these narratives are between the platforms of magazines and videos. The data for this study included 28 individual IS-produced magazines and 32 IS-produced videos. A sentiment analysis of this data reveals that while videos tend to utilize more negative language on average when compared to magazines, the ways in which specific words and topics are discussed and represented are largely consistent between the two media platforms. Additionally, the themes of Muslim persecution, religious piety, and vengeance against enemies that were partially identified through sentiment analysis were found to be in line with the themes that have been previously identified through other studies. This suggests that sentiment analysis can act as a valuable tool in the future study of extremist textual media more generally.

Introduction

The mere online presence of the self-proclaimed Islamic State (IS) does not make them unique among extremist organizations, as many of these groups have been establishing themselves on the Internet for over twenty years (Caldwell 2008). However, what has gained the IS notoriety and made them distinct from their contemporaries is the proficiency and effectiveness with which they have used the Internet as a means of communicating with, influencing, and radicalizing individuals from around the world (Farwell 2014). The large influx of foreign fighters from a diversity of nations to the IS territory in Syria and Iraq, while attributable to several factors, is partially due to the extensively organized and well-maintained media and communications campaigns of the IS (Gates and Podder 2015). The IS media campaign is represented in several forms including well-produced propaganda videos, sophisticated online magazines, and elaborate social media activity across a number of platforms such as Twitter and YouTube (Lieber and Reiley 2016). And while it is difficult to pinpoint the specific role that IS media has in the larger radicalization process, a deeper understanding and familiarity with IS media is an important first step in any efforts aimed at countering potential effects that this media may have on individuals who are exposed, and possibly receptive, to it (Braouezec 2016).

To this end, this study utilizes the method of sentiment analysis to explore the language that is used within the English-language videos and magazines produced by the IS in order to identify any linguistic or topical trends contained within and to discern how, if it all, the messages of the IS vary across these media platforms. More specifically, there are three primary research questions guiding this study.

Question One: How does the language and topical focus of Islamic State media differ between magazines and videos?

While a growing amount of research has been conducted on the content of the IS media campaign whether it be magazines, videos, or social media, rarely have the linguistic and topical differences between these formats been directly compared in a quantifiable way. Sentiment analysis allows the linguistic trends of both magazines and videos to be quantified and directly compared to one another to see if these formats have any consistency in their topical and thematic focus or in the emotional extremity of the language that is used. This

information may prove useful when determining which of these two mediums – magazines or videos – are the more 'severe' threat.

Question Two: What can the specific words that are used the most positively and negatively tell us about the narratives of Islamic State media, and are the narratives identified this way in line with what has been identified by more traditional means?

Sentiment analysis is a method that allows the words and phrases of a text to be labelled as 'positive' or 'negative' depending on how they are being used. As such, it is possible to determine the specific words used within IS media with the most positive and most negative connotations. Once distinguished, these most extreme words will be used to identify any themes or narratives present within the language and then compared to the thematic narratives that have been identified in previous studies. If the themes identified this way match those that have been identified through more traditional means, this will be used as evidence to demonstrate the effectiveness of semi-automated techniques such as sentiment analysis and their application to extremist media more generally.

Question 3: How can the results of a sentiment analysis of Islamic State media be used as a means of countering or otherwise subverting the messages contained within?

It has recently been noted that, possibly due to increased military pressure and the subsequent loss of significant portions of their contested territory, that the IS propaganda output has begun to dwindle, particularly propaganda aimed at Western audiences (Winter 2018). While there has indeed been a lull in their media output, the IS has recently begun a new English-language video series entitles *Inside the Caliphate,* of which there are currently seven installments. While it is too early to tell if this new video series marks a true reinvigoration of media output, it is nevertheless important to continue examining the messages being delivered by the IS in order to inform potential strategies of countering or subversion.

The Al Hayat Media Center and the Islamic State Propaganda Machine

Members of the IS have proven to be savvy users of media communication strategies and were quick to establish a notable presence through a variety of online platforms including social media websites such as Twitter. The elaborate IS marketing strategy has been described as a key contributing factor to the organization's global recruitment capabilities (Stern and

Berger 2015). Of particular interest to this study is the media produced by the Al Hayat Media Centre, a branch of the IS's larger media campaign that is more directly involved in reaching international – particularly Western – audiences (Richards 2016). The media produced by Al Hayat, specifically their magazines and videos, are often in English (as well as translated into French, German, and several other languages), and generally rely on highly stylized and 'Westernized' production values (Macnair and Frank 2017). Attention has been given to the 'slickness', sophistication, and undeniable technical quality of Al Hayat propaganda and the potential impact this media may have on individuals who are exposed to it (Mahood and Rane 2017). Much of the media produced by Al Hayat has demonstrated the organization's familiarity with Western culture and lifestyles and their ability to use this familiarity to appeal directly to individuals in Western nations (Gates and Podder 2015). The most notorious of Al Hayat's media outputs are likely their high-quality videos and their magazines *Dabiq* and *Rumiyah*, of which a brief history will now be provided.

Islamic State Magazines

The precursor to the online magazines currently being released by the IS is most likely Al Qaeda's *Inspire* magazine, which was initially released online in 2010 (Soriano, 2012). *Inspire,* which was written in English and made readily available to all online, lacked some of the quality and 'shine' that would be seen in the IS magazines that followed a few years after, but did share some similarities with the IS variants (Ingram, 2017). Articles contained within *Inspire* urged Al-Qaeda sympathizers around the world to carry out lone wolf attacks on their home soil, often providing details and instructions on how to create homemade weapons and explosives (Colas 2017).

The first officially produced IS magazine, *Islamic State News,* was initially released by the Al Hayat Media Center in May of 2014. A total of three issues of *Islamic State News* were released during the summer of 2014. At approximately the same time (June 2014), four issues of another Al Hayat produced magazine, the *Islamic State Report* were released. When compared to the IS magazines that would come shortly after, *Islamic State News* and *Islamic State Report* were significantly shorter (averaging approximately 5-7 pages in length per issue), and heavily pictorial, containing far less text than their successors (Azman, 2016). The content of these

magazines (which were written in English) consisted almost entirely of photo-reporting of IS military campaigns and battle updates (Ingram, 2016; Ingram, 2017).

In July of 2014 the IS (via the Al Hayat Media Center) released the first issue of *Dabiq*, the magazine that would come to serve as one of their flagship media outlets. Far more detailed and expansive (an average issue consists of roughly 60 pages) than its predecessors, *Dabiq*, while still containing many high-quality images and graphics, was more text-based and was composed of several different sections that went beyond standard battlefield updates. Each issue of *Dabiq* (which was released in a variety of languages including English, French, and German) typically contained sections devoted to religious interpretations, ideology, news updates, interviews with IS leadership, testimonials from recent IS recruits, women's issues, and calls for international recruitment (Christien, 2016; Colas 2017; Kibble, 2016).

Initially, the Al Hayat Media Center maintained a regular monthly release schedule for *Dabiq*, though production slowed down in 2015 when it became bimonthly, and became slower still in 2016 when it was released only quarterly. This decrease in production is likely the result of increased military pressure and consistent attacks against the IS (Azman, 2016). In total, 15 issues of *Dabiq* were released in the two years between July of 2014 and July of 2016, and while it is difficult to pinpoint the direct impact that *Dabiq* may have had on its international audience, it has been suggested that the magazine, to some degree or another, was a contributing factor to the success of the IS global recruitment campaign (Celso, 2014; Ingram, 2016).

As of early 2018, there have been no new issues of *Dabiq* since Issue 15 was released in July of 2016, however, in September of 2016, the Al Hayat Media Centre released the inaugural issue of a new magazine, *Rumiyah.* Structurally similar to *Dabiq* in terms of length and production value, *Rumiyah* also shared much of the language and thematic content of its predecessor (Macnair and Frank 2018). Issues of *Rumiyah* were released on a regular monthly schedule for a full year, though there have been no new issues of the magazine since Issue 13 was released in September of 2017. The IS's recent losses of contested territory and other various setbacks may be the cause for this sudden cessation of production, and it remains to be seen whether any new issues of *Rumiyah* (or perhaps a new magazine entirely) will be released in the future or if it has run its course after one year of publication.

Islamic State Videos

While jihadist videos are not exclusive to the IS and have been filmed, produced, and released by various other extremist organizations (Klausen et al. 2012; Weisburd 2009), the early days and rapid growth of the IS coincided with the increased accessibility and affordability of the technology required to create and share high-quality videos with relative ease. The videos of the Al Hayat Media Centre have gained notoriety for their tendency to feature IS members from a variety of ethnic and national backgrounds, many of whom come from Western nations such as Canada, the United Kingdom, and Australia, and speak fluent English (Macnair and Frank 2017). In addition, videos produced by the IS have been shown to rely more heavily on narration and on speakers than videos by other extremist organizations, often selecting speakers that are young males who are capable of speaking directly to the individuals in Western nations that they are trying to entice (Bérubé 2018).

The Narratives and Consistency of Al Hayat Media

Whether it is delivered through their magazines or videos, the thematic elements of IS media are generally very consistent, suggesting that the organization is committed to maintaining cohesive narratives and a certain 'brand image' (Melki and Jabado 2016). Previous studies focusing on IS media have noted that in the roughly four years since the IS began their international media campaign, that the content and message of IS propaganda has undergone little change and has remained largely in line with the original goals and vision of the organization (Kuznar 2017; Wignell et al. 2017). While a full review of all of the consistent narratives present within IS media is outside the scope of this paper, a select example of some of the most prevalent narratives, particularly those that commonly occur within IS magazines and videos, will be briefly described. While the following narratives rely heavily on the visual mediums of film and imagery in order to be effectively disseminated, it will be tested to see whether a purely textual analysis of IS propaganda can reveal similar themes.

The Narrative of Good and Evil

IS media typically depicts a very rigid dichotomy between what they believe to be the forces of good, truth, and justice (themselves), and the forces that they believe to be heretical, infidel, or otherwise 'evil' (everyone that is not them, but primarily the nations of the West).

This narrative draws heavily from the dualistic interpretation of 'good and evil' found in the texts of Abrahamic religions and allows the organization to clearly establish who their allies and enemies are (Richards 2017). This technique of portraying enemies as a force of evil that is ultimately incompatible with the lifestyles of the 'just' is not unique to the IS. It has, for example, been compared to the ways in which the United States and the Soviet Union depicted one another during the Cold War (Zelizer 2018), though nevertheless it serves as an effective way of implementing a stark 'us vs them' dichotomy that adds a compelling and dramatic element to their media (Ingram 2016).

The Narrative of Victimhood

Despite showing its soldiers committing executions and engaging in other acts of violence, the media of the IS typically portrays itself and the global Muslim population more generally as the victims of rampant Islamophobia and persecution spearheaded by the nations of the West (Winter 2018). For example, IS videos have shown the aftermath of US airstrikes including injured civilians, blown out schools and hospitals, and orphaned children, all of which serve the narrative of Muslim victimization at the hands of the West (Macnair and Frank 2017).

The Narrative of Victory

IS media often portrays the organization and its mission from a perspective of eschatological determinism and suggests that they are on an unwavering path toward an inevitable and ultimate victory over their enemies. This narrative of victory applies to both short term and current victories, such as successful battles and skirmishes, but also to a long term vision that ends with a total IS victory and the eventual and unchallenged establishment of their caliphate (Farwell 2014). IS media depicts its soldiers as perpetual winners in both life and death, focusing on notions of progress, growth, and forward momentum despite their underdog status (Zelin 2015).

Data and Methods

Sentiment Analysis

Sentiment analysis is a method of analysis which relies on natural language processing to analyze large amounts of textual data and to extract any emotions, attitudes, or linguistic trends contained within (Kharde and Sonawane 2016). By using words as the units of analysis, sentiment analysis software employs algorithms to automatically label the language of textual data from a wide range of sources as positive, neutral, or negative based on the types of words used and the context in which they appear (Philander and Zhong 2016). For example, if a member of IS wrote the sentence, '*the evil nation of Canada is a land of debauchery and lies*', sentiment analysis can be used to look at the subject of a given sentence, in this case Canada, and provide that word with a quantifiable score, whether positive, neutral, or negative, based on the surrounding words that are used in the sentence. In this example, the sentiment score given for the word 'Canada' will likely be a negative one given that 'negative' words such as 'evil', 'debauchery' and 'lies' are being used to describe it. Based on the sentiment results of this sentence, you could then conclude that 'Canada' has been depicted negatively by the author. Obviously with larger datasets more precise and accurate sentiment results can be uncovered.

Though sentiment analysis is a relatively new method, and one that was originally applied primarily by those in hospitality studies to examine online customer reviews and ratings of services and businesses (Martínez-Cámara et al. 2012), it has recently been applied to a more diverse range of topics and platforms including Twitter (Ficamos and Liu 2016; Pandarachalil et al. 2015) and YouTube (Wöllmer et al. 2013). While examples of sentiment analysis being applied to extremist media data are rare, it has been shown as an effective tool for examining the patterns of online extremist content (Scrivens et al. 2017).

Data Collection

This study applied sentiment analysis to the online magazines and propaganda videos of the IS. However, because sentiment analysis assesses textual data, the language of magazines and videos, which are partially visual mediums, needed to be extracted. This process began by first compiling as many IS magazines and videos as possible – within certain requisite criteria.

Magazines

Though the IS produces several propaganda magazines, this study only included issues of the magazines *Dabiq* and *Rumiyah*. The decision to limit the analysis to these two magazines was based primarily around the fact that these magazines are printed in English and are generally aimed at Western audiences, thus making them more likely to reach audiences in Canada than other IS magazines. Complete issues of *Dabiq* and *Rumiyah* are easily accessible online and can be directly downloaded from a variety of sources.[1] As of March 2018, the IS has released 15 issues of *Dabiq* and 13 issues of *Rumiyah*, all of which were downloaded as PDF files. The text from each individual issue was then extracted and placed into a document that could be used for sentiment analysis.

Videos

English-language (whether spoken or subtitled) videos produced by the IS were located first by generalized Google searches ("Islamic State propaganda video"), followed by more specific searches through video-sharing sites such as LiveLeak, various news sites, and other special interest websites devoted to cataloguing Islamic extremist content.[2] In total 32 IS videos produced between 2014 and 2018 were included in this study, and while the IS does produce significantly more video content than this, this study was concerned only with videos that appear in English, and by extension, those that are aimed at Western audiences. Once located, these videos were downloaded and manually transcribed and the accuracy of the transcription was double-checked. These transcriptions were then combined into a textual document that could be used for sentiment analysis.

Data Cleaning, Pre- and Post-Processing

Because a complete sentiment analysis of every word of the textual data would yield a vast amount of redundant information, it was required to compile and refine a list of relevant keywords that would be used for analysis. The specific words selected for analysis were based on the criteria of frequency (the most recurring words) and word type (nouns only). The decision to select only the most recurrent words was based on the methodology of a similar study (Scrivens et al. 2017) and the assumption that the words that the IS uses the most in their

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[1] https://clarionproject.org/
[2] http://jihadology.net/

media are generally words that serve an important narrative function. In total, the top one hundred words with the most occurrences were used for this study.

Additionally, all possible variations of a particular noun, rather than being assessed individually, were combined and analyzed as a singular block. For example the word 'crusader' accounts for all possible variations of this word, including the plural 'crusaders' and the possessive 'crusader's.' Similarly, some Arabic words may have slight variations in their English spellings. For example, the word 'kufaar' (a word that roughly translates as 'disbeliever' or 'infidel') may also be spelled as 'kuffar' or 'kafir', and as such, all alternate spellings were combined and analyzed together, a decision borrowed from the methodology utilized in a similar study (Ghajar-Khosravi et al. 2016).

A sample of the final keyword list can be seen in Table 1 which highlights the ten most common words within the dataset.

Table 1 – Most Occurring Words

Word	Occurrences
Allah	7760
Islamic	2938
State	2103
People	1899
Muslim	1920
Messenger	1158
Religion	1139
Soldier	1080
Khilafah	1066
Kufaar	1061

Once the keyword list had been compiled it was subjected to sentiment analysis via the software SentiStrength[3], an open software designed for this purpose. SentiStrength provided sentiment values for each individual keyword, however, due to the large discrepancy in word counts between the magazine and video datasets, the raw sentiment values needed to be

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[3] http://sentistrength.wlv.ac.uk/

standardized in some way in order for these values to be directly comparable across media platforms. This was done by taking the raw sentiment score of any given noun and determining the average expected sentiment expression of that noun across 1000 words. Expressed as an equation:

Raw sentiment score / (total word count / 1000)

The resulting values indicate the expected sentiment score of a particular word per every 1000 words of text – values that can then be directly compared regardless of how many words exist within the original text document. All values discussed in the results sections are based on this equation, and should be interpreted thusly.

Results

Table 2 outlines the overall average sentiment values of the various forms of IS media. Given that the average sentiment value of each media type is negative, it can be inferred that the IS tends to favor language of a predominantly negative nature in their propaganda outputs. However, these results also indicate that the average sentiment value of IS videos (-4.25) is more extreme than that of IS magazines (-1.39). These results also suggest that the average sentiment of the Dabiq magazines (-1.34) is comparable and only slightly different from that of the Rumiyah magazines (-1.45) indicating a strong consistency between the two magazines with regard to the average severity of language used.

Table 2 – Average Sentiment by Media Type

Media Type	Average Sentiment
Dabiq	-1.34
Rumiyah	-1.45
Combined Magazines	-1.39
Videos	-4.25
All Media	-2.18

Table 3 outlines the ten specific words with the highest and lowest average sentiment values within magazines, videos, and all media in general. These results suggest that there is consistency with how certain words are being used across the platforms of video and magazines. For instance, of the top ten most negative words of videos and magazines, five of them (war, Muslim, battle, kufr, Islamic) are shared between each list. Similarly, five of the ten most positive words (victory, truth, diwan, lord, Muhammad) are shared between magazines and videos. Also of note is the discrepancy between the most negative and most positive words. While the most positively valued word across all media, 'truth', has a sentiment score of 0.94, the most negatively valued word, 'war', has a sentiment score of -10.08, which is much more extreme score. This discrepancy further supports the IS's predilection toward the use of primarily negative language in their media outputs.

Table 3 – Most Negative and Most Positive Valued Words by Media Type

Most Negative Words	Average Sentiment	Most Positive Words	Average Sentiment
Magazines	**-1.39**		**-1.39**
War	- 5.79	Truth	0.43
Islamic	-5.56	Lord	0.28
Enemy	-4.71	Earth	0.03
Muslim	-4.57	Message	-0.01
Allah	-4.02	Religion	-0.09
State	-3.98	Victory	-0.10
Murtaddin	-3.29	Diwan	-0.11
Kufaar	-3.11	Muhammad	-0.13
Crusader	-3.04	Sharia	-0.14
Battle	-2.92	Call	-0.29
Videos	**-4.25**		**-4.25**
War	-17.58	Victory	2.25
Muslim	-17.24	Truth	2.12

Flame	-12.68	Diwan	2.03
Weapon	-12.60	Him	1.52
Death	-11.93	Lord	1.47
Battle	-11.86	Murtaddin	1.22
Islamic	-10.70	Muhammad	1.03
Order	-9.30	Path	0.62
Kufaar	-8.29	Sallam	0.50
Women	-8.15	Prophet	-0.01
All Media	**-2.18**		**-2.18**
War	-10.08	Truth	0.94
Muslim	-9.18	Victory	0.72
Islamic	-7.64	Lord	0.68
State	-5.77	Diwan	0.13
Enemy	-5.33	Muhammad	0.06
Allah	-5.05	Earth	-0.01
Battle	-4.90	Path	-0.08
Kufaar	-4.67	Religion	-0.08
Death	-4.53	Ummah	-0.32
Flame	-4.44	Life	-0.36

A further look into the specific words with the highest and lowest average sentiment values can potentially offer suggestions with regard to the way in which the IS uses language to create and perpetuate certain narratives within their media. Some of these results may seem intuitive and do not necessarily merit further exploration. For instance, it is unsurprising that the word 'war' was the single most negatively valued word across all platforms. The word 'war' itself refers to an inherently negative phenomenon, and as these examples show, war is generally used in a violent or otherwise negative way:

"It is as if they live in another world altogether, different from the one in which their armies are engaged in a grinding **war** against the army of the Islamic State, exerting their

efforts in order to destroy the lands of Islam and to kill as many of the women and children of the Muslims – both young and old – as they can" (*Rumiyah* 13, p. 4).

"Thus, the Islamic State dispatched its brave knights to wage **war** in the homelands of the wicked crusaders, leaving Paris and its residents "shocked and awed"" (*Dabiq* 12, p. 2).

Similarly, the Arabic word 'kufaar', which translates roughly as 'non-believers', is used by the IS primarily as a means of derogatorily referring to their enemies. As such, it's placement as one of the most negatively valued words regardless of media type might be expected. The negative use of the word can be seen in the following examples:

"Beware of abandoning a single hand span of land until you have made it into an inferno for the criminal **kuffar**. Ambush them, besiege them, lie in wait in every outpost" (*Flames of War II* video).

"Attack these **kuffar** however you can, destroy their souls. Make France quake" (*My Revenge* video).

Still, there are some results from this sentiment analysis that may go against common expectation and merit further investigation. Using the list of words with the highest and lowest sentiment values as a starting point, three primary narratives will now be addressed.

The Positivity of Religion

There are certain topical commonalities among the list of words with the highest average sentiment. Positively valued words, and indeed some of the only words in the entire dataset that retain average sentiment values that are not in the negatives, such as 'lord', 'religion', 'Muhammad', and 'truth' are all words of clear religious connotation. From this it may be inferred that while the majority of IS media uses language that is hostile or otherwise negative, this language softens and become more positive when discussing matters of religion. The following examples show that, in the same videos and magazines that depict gruesome acts against their enemies, the IS becomes far more ebullient when discussing matters of faith and piety:

"The **religion** remained alive in the hearts of the believers and the flag that represents the glory of this **religion** remained to flutter" (*Inside the Caliphate 6* video).

"In essence, we explain why they must abandon their infidelity and accept Islam, the **religion** of sincerity and submission to the **Lord** of the heavens and the earth" (*Dabiq* 15, p. 4).

"Those who have trust and certainty in their **Lord's** support remain unfaltering and perseverant, anticipating their reward, marching forth and not turning their backs" (*Rumiyah* 9, p. 26).

"Indeed, Allah sent **Muhammad** with the **truth** from Him to His creation as a bringer of good tidings" (*Dabiq* 7, p. 17).

While it is not surprising that the IS speaks positively about their religious beliefs and convictions in their media, it worth nothing that, strictly from the perspective of sentiment analysis, these are the *only* topics that are depicted in a way that is statistically positive and even then, some of these words might be more accurately labeled as 'neutral' as opposed to positive ('religion', for instance, has an overall average sentiment of -0.08, which is remarkably close to the neutral value of zero).

Muslims as Victims

Interestingly, while words dealing with religion tended to have some of the highest average sentiment values, the word for someone who practices the religion of Islam, 'Muslim', was the second most negatively valued word in the entire dataset (behind 'war'). Initially this would seem to go against the previously mentioned trend of religious positivity, however, a closer examination of how the word 'Muslim' is used in IS media shows that it is not Muslims themselves that are depicted negatively, rather, it is the actions and attitudes of others toward Muslims that contribute to the negative score. The global Muslim population are often depicted in IS media as the victims of rampant Islamophobia spearheaded by the West. The following examples use the 'negative' language of violence to highlight the narrative of the victimized Muslim and may partially explain the word's very negative average sentiment value:

"America, the evil, crusade, infidel among the worst of the unbelievers and harshest in the war against Islam and its people. It has killed millions of **Muslims** in Iraq, Afghanistan and elsewhere. In fact, it's the spearhead of the war on Islam" (*Orlando Attack* video).

"Know that Allah resurrects you naked and you'll have your sins on your neck, Allah is gonna show you the sister that got violated, the child that got beheaded for being a **Muslim**, it will be brought in front of you, the brothers that gave their lives their bodies will be shown in front of you and Allah will ask you, 'where were you?'" (*No Life Without Jihad* video).

"They carried on with their pacifist and even pro-democracy da'wah while **Muslim** women around the world were being abused, vilified, imprisoned, and violated at the hands of the kuffar and their puppets" (*Rumiyah* 1, p. 15).

"In Turkey, the communists began rioting, and even attacking and killing **Muslims** in anger over the course of events on the battlefield" (*Dabiq* 5, p. 15).

When commonly surrounded and described by words such as 'killing', 'beheaded', 'violated', and 'abused', it becomes clear why the word 'Muslim' retains the negative sentiment value that it does, though it must be acknowledged that this negative score is not the result of hostile depictions of Muslims, but rather the result of hostile actions described toward Muslims.

Allah as Vengeful

Similar to the word 'Muslim', one might expect that the word 'Allah', being a word of obvious religious connotation, might be one of the more positively-valued words within IS media. However, the results of this sentiment analysis suggest the opposite as 'Allah' was determined to be the word with sixth most negative sentiment value across all media. It is perhaps worth nothing that aside from being one of the words with the most negative average sentiment value, 'Allah' was also the most frequently used noun across all IS media by a substantial margin with nearly 8000 occurrences of the word (for reference, the second most frequently used noun, 'Islamic', has just under 3000 occurrences). The overtly negative average sentiment value of the word 'Allah' may be attributable to the narrative of Allah as a vengeful God, or as a vessel through which the more violent acts of IS soldiers are strengthened or

otherwise endorsed and supported. The following examples illustrate how Allah is used or referred to as a source of strength and vengeance against the enemies of the IS:

> "And know that **Allah**, the mighty and sublime, is luring the nations of kuffar to the land of Sham so that they can be exterminated by the mujahidin" (*Inside the Caliphate 5* video).

> "Those who have their excuse, and **Allah** knows best who they are, you must fight there. Fight them over there. If you can, put explosives under their cars, in their houses, all over them. If you can, take poison and put it in their meal or their drink. Make them die, make them die of poisoning. Kill them wherever you are. In Bosnia, in Serbia, Sandžak, you can do it. **Allah** will help you" (*Honor is in Jihad* video).

> "Yes, the soldiers of the Islamic State – without exception – are all prepared to fight in the cause of **Allah** down to their last drop of blood" (*Rumiyah* 12, p. 4).

These examples may partially highlight why the word 'Allah' retains such a negative sentiment value across IS media. By using Allah as a justification for their violent actions and representing Him as an enabler of their extreme rhetoric, the IS media depicts Allah as a vengeful source of inspiration. However, as aforementioned, the word 'Allah' occurred upwards of 8000 times in this dataset, and by no means was it used in this context with every occurrence and there are certainly other potential explanations for this particular word's negative sentiment value.

Discussion

The results of this sentiment analysis, while not necessarily providing any novel insights into the thematic content of IS media, may still prove useful in several ways. To elaborate on this, the three primary research questions introduced earlier will now be addressed.

Question One: How does the language and topical focus of Islamic State media differ between magazines and videos?

The results of the sentiment analysis suggest that, much in line with what has previously been discovered by others (Kuznar 2017; Melki and Jabado 2016; Wignell et al. 2017), that there is a large degree of topical consistency within IS media, regardless of whether it is in the form of

videos or magazines. There was much overlap between videos and magazines with regard to the most positive and most negative words used in either media genre. The consistency and stability of IS propaganda over time and between media platforms is possibly due to the content creators and leadership of the Al Hayat Media Centre maintaining a tight control over the messages and 'brand image' that they are attempting to portray. Whereas individual IS members and sympathizers have been able to spread their own propaganda with relatively little supervision or creative oversight over more individualistic platforms such as Twitter, the members of Al Hayat Media Centre producing 'official' IS media seem to be operating in a more organized and uniform manner that seeks to maintain a consistent tone and message regardless of media platform.

However, what is perhaps worthy of consideration here is the discrepancy between the average sentiment value of magazines and videos more generally. While IS videos and magazines were shown here to have a similar topical focus, it was also shown that the language of videos tended to be more extreme and more negative than the language of magazines. The reason for this discrepancy may have to do with the nature of the platforms themselves. Magazines, while still containing imagery, are primarily a textual medium, whereas videos are primarily an audiovisual one. Because of this, the textual language of magazines may tend to be more information based and aimed at providing 'factual' accounts of recent events and religious interpretation, as opposed to videos, which often feature IS soldiers speaking in a fervent and impassioned way that may be more instinctual and dramatic and perhaps not as heavily scripted or nuanced as the text in the magazines. Take for instance this example comparing the language of magazines and videos around the subject of 'battlefields':

"In Iraq, meanwhile, their recognition of the Peshmerga's inability to make and sustain **battlefield** gains – as well as the failure of the Safawiyyīn in that same regard – led the crusaders to make a last-ditch attempt to create a local ground force "strong" enough to face the mujāhidīn of the Khilāfah" (*Dabiq* 10, p. 34).

"Make the lands of the crusaders your **battlefield**. They are frontiers of war, the defenders of the cross have no covenant of safety, so kill them wherever you find them. If you're a tradesman, use your nail gun and nail the kuffar to the head then his crucify his body to the woodworks" (*Inside the Caliphate 2* video).

Though cherry-picked, the difference in the tone of these two examples is representative of the overall difference in average sentiment between videos and magazines. Regardless of the reason, the fact that videos tend to be more extreme in their use of language may indicate that videos are more capable of eliciting equally extreme reactions, and as a result, would be perhaps the bigger threat or the more powerful factor in the radicalization process, though this is of course a speculative conclusion.

Question 2: What can the specific words that are the most and least 'positive' tell us about the narratives of Islamic State media, and are the narratives identified this way in line with what has been identified by more traditional means?

As aforementioned, the linguistic trends of IS media, and the words that the organization tends to use the most positively and negatively, do not necessarily reveal anything unique with regard to the dominant themes and narratives contained within. The most extreme words identified through sentiment analysis support the narratives that have been previously identified through more conventional methods including the narrative of Muslims as victims (Winter 2018), the narrative of religious righteousness and vengeance (Ingram 2017; Richards 2017). However, what is of significance here is the fact that while human interpretation played a role in interpreting the results, these narratives were uncovered primarily through the semi-automated method of sentiment analysis, suggesting that this is a viable method that may potentially be of use moving forward, particularly when dealing with voluminous datasets that are simply too large to be analyzed manually. This is not to say that sentiment analysis negates the need for human oversight entirely – it does not – but it has been shown here to be a quick, accurate, and cost-effective tool for engaging with a large amount of data and is a method that should be given consideration by researchers addressing similar topics and datasets.

Question 3: How can the results of a sentiment analysis of Islamic State media be used as a means of countering or otherwise subverting the messages contained within?

Understanding the narratives presented by any given group is a crucial step in understanding the group itself (Kuznar 2017). A deeper understanding of the messages contained within IS media provides a theoretical groundwork with which to challenge and subvert these messages (Braouezec 2016). With the IS seemingly stepping up its Western media output after a recent lull in production, keeping up with this new content remains important for

countering and subverting the messages being delivered, ideally before they are able to reach or have any influence on Canadians who might be receptive to them. Whether this subversion comes in the form of counter-narratives, alternative narratives, or attempts at redirection, the architects of these strategies are encouraged to implement the results of this study and the numerous others that have endeavored to elucidate and make clear the intent and narrative content of IS media and the ways that this information may potentially inform strategies of subversion.

Limitations and Conclusion

While the exploratory methodology of this study allowed the linguistic patterns and narrative elements of IS media to be identified in a largely accurate manner, there are nevertheless several shortcomings to be acknowledged. First, and perhaps most pressingly, it is important to remember that even though this study was able to partially highlight what the IS says in their media and how they go about saying, this still does not reveal anything about how these messages are being received, interpreted, or internalized by those who are exposed to them. While understanding and defining the messages of extremists is important, it has been rightly suggested that is also important to begin examining the impacts and effects that these message may have on their intended audiences (Bouvier 2015; Huey 2015; O'Halloran et al. 2016).

Second, while this study analyzed the textual components of IS videos and magazines, these are platforms that are also heavily reliant on visual, and in the case of videos, audio elements. As such, there is a certain degree of information that is lost through a purely textual analysis of these sources. While outside the scope of this study, it must be stressed that to fully understand the impact that these mediums may have and the messages that they contain it is important to not ignore their audiovisual components and how they potential enhance or compliment the textual components.

Finally, it must be acknowledged once again that this study looked exclusively at IS media that has been presented in English and generally aimed at Western audiences and is therefore not necessarily representative of the IS media machine as a whole. It may well be the case that the thematic and narrative content of IS media differs substantially depending on who the target demographics may be.

Ultimately what should be viewed as the primary contributions of this study are the feasibility of its methodology (and the potential for semi-automated methods such as sentiment analysis to accurately analyze much larger collections of extremist data) and its confirmation of the stability and consistency of narratives presented within IS media. More generally, the methods of data analysis used in this study may also be applied to the textual content of extremist groups beyond the Islamic State. Extremist groups operating under a diverse range of ideologies, whether it be the religious extremism of the IS or any of the burgeoning White supremacy movements in North America have increasingly relied on the Internet to communicate and share their messages with potential recruits and sympathizers. Often the sheer amount of textual content produced by extremist groups and individuals is simply too plentiful to be analyzed in a strictly manual manner and this is where semi-automated methods such as sentiment analysis may act as a potent tool for counter-extremism researchers hoping to supplement their understanding of both the core and the nuances of extremist media.

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