Multimodal Recontextualisations of Images in Violent Extremist Discourse

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Abstract

This chapter presents the results of a pilot study which aims to analyse violent extremist propaganda materials and the multimodal recontextualisation of images from these sources across different media platforms. The approach builds upon van Leeuwen’s (2008) model of ‘recontextualisation principles’, which explains how changes in social practices take place recursively through multimodal discourse, and which involves the reconfiguration of social actors, activities, and circumstantial elements across sequences of multimodal activities (or genres), which function to regulate social practices. The larger aim of the project is to develop a mixed methods approach for integrating qualitative methods of multimodal discourse analysis with quantitative methods of data mining and information visualisation to study discourse patterns in large datasets of multimodal texts in the field of violent extremism. The Islamic State and their online magazine Dabiq are chosen for this purpose. In this chapter, we develop a framework for categorising the images and article types in Dabiq. Following this, we use an interactive visualisation application (a) to investigate how the images, article types and their combinations in Dabiq change over time, and (b) to trace recontextualised images imported into Dabiq and recontextualisations of images from Dabiq in different media. The results reveal that ISIS adapt their propaganda materials in accordance with their own agenda, activities, and practices (e.g. through visual icons and article types), and that images from Dabiq are used to both support and resist terrorism across a wide variety of media platforms. The project establishes the need for digital techniques to develop evidence-based approaches to the study of multimodal recontextualising practices.

Key words: multimodal discourse analysis, recontextualisation, social semiotic theory, violent extremist discourse, information visualisation, big data analytics
1. Introduction: Multimodal Discourse Analysis and Big Data

Van Leeuwen’s (2008, p. vii) view “that all [multimodal] discourses recontextualise social practices, and that all knowledge is, therefore, ultimately grounded in practice” arose from his seminal work as co-founder of critical discourse analysis and multimodal semiotics, which is concerned with the study of the interaction of language, images and other resources in texts, interactions, and events. Using Bernstein’s (1990) concept of recontextualisation, van Leeuwen (2008) develops a model of recontextualising principles to explain how changes in social practices take place recursively through multimodal discourse. The approach involves the reconfiguration of social actors, activities, and circumstantial elements across sequences of multimodal activities, which function to regulate social practices. That is, the selective appropriation, relocation, and refocussing of key semiotic elements in relation to other discourses results in the creation of new abstract orders and orderings which are enacted as social practices (Bernstein, 1990; van Leeuwen, 2008).

In this chapter we present the findings from a pilot study which builds on and expands van Leeuwen’s (2008) recontextualisation principles to analyse violent extremist propaganda materials and the multimodal contextualisation and recontextualisation of images from these sources. More specifically, the aim is to develop a mixed methods approach (see O'Halloran, Tan, Pham, Bateman, & Vande Moere, 2016) to analyse how violent extremist groups use language and images to propagate and legitimise their views, incite violence and influence recruits in online propaganda materials, and how the images from these materials are re-used in different media platforms to support and resist violent extremism. In doing so, the overall aim is to develop empirical approaches for the analysis of large datasets of multimodal texts (e.g. Bateman, 2014; O'Halloran, Chua, & Podlasov, 2014; O'Halloran, Tan, Pham, Bateman, & Vande Moere, 2016) and to develop the theory and practice of multimodal discourse analysis.

One of the major problems with large data sets is that texts and images need to be interpreted in relation to context. For this reason, the proposed approach (see O'Halloran et al., 2016; O'Halloran, Tan, Wignell, Bateman, Pham, Grossman, & Vande Moere, 2016 in press) involves compiling multimodal datasets with accompanying metadata (e.g. date, location, source, URL) and contextual information (e.g. higher order semantic classifications of keywords and objects derived from Wikipedia classifications). From there, the results derived
from manual analysis using software applications (e.g. Multimodal Analysis Image) are used to identify key patterns of interacting system choices. Machine learning techniques are then applied to these results in order to develop automated data mining techniques for analysis of large data sets, using the contextual information provided by the metadata and Wikipedia. The resulting discourse patterns are then explored qualitatively using interactive visualisation applications. The proposed research framework is displayed in Figure 1.

![Figure 1: A mixed methods approach to the multimodal analysis of big data (O’Halloran, Tan, Pham, Bateman, & Vande Moere, 2016)](image)

In what follows, we discuss the initial results of a pilot project which is the first step towards the development of the mixed methods approach described above. The online magazine *Dabiq*\(^1\), produced by Islamic State (henceforth referred to as ISIS, also known as ISIL), is chosen for this purpose. In this study, we developed a framework for categorising the images and article types in *Dabiq*. Following this, we developed and used an interactive visualisation application to (a) investigate how the images, article types and their combinations in *Dabiq* change over time, and (b) to trace recontextualised images imported into *Dabiq* and recontextualisations of images from *Dabiq* across different media platforms. In what follows, we describe the multimodal data set under consideration, the background of ISIS, and some preliminary findings from this pilot project.
2. The multimodal data set

The multimodal dataset which forms the basis of investigations in this pilot study comes from the English language edition of ISIS’s official online magazine Dabiq. ISIS is chosen for this study because of their notoriety as a violent extremist group and their prolific media output (Zelin, 2015). Dabiq is chosen because it is “one of the few original sources of data that directly comes from ISIS” (Vergani & Bliuc, 2015, p. 8). In what follows, the background of ISIS and their beliefs about Islam are briefly reviewed.

2.1 ISIS background

ISIS has, since June 2014, referred to itself as ‘Al Dawla al-Islamiyya’. The Arabic name is most often translated into English as ‘Islamic State’. Translations into English imply that the kind of ‘state’ envisaged is akin to a modern nation state. However, the Arabic name is as much religious as it is political. The ‘state’ imagined by ISIS is a totalitarian theocracy characterised by a strict implementation of Shari’a. It is an attempt to re-imagine and re-create a caliphate, the type of government that originated during the expansion of Islam in the time of the Prophet Muhammad and his successors.

The leader of a caliphate, the caliph, is an absolute, autocratic ruler considered to be the religious, political, and military successor to the Prophet Muhammad and the leader of the entire Muslim community (Bowering et al, 2012, pp. 81-86). On June 29, 2014, ISIS declared a caliphate covering territory it controlled in Iraq and Syria. One major platform in the ISIS agenda is to consolidate and expand its caliphate.

2.2 ISIS’s interpretation of Islam

The rationale behind the interpretation of Islam adopted by ISIS is an extreme reading of the doctrines of an Islamic movement known as Salafism. Salafism is a socially and religiously conservative, fundamentalist faction of Sunni Islam which is followed by around “3% of the world’s Muslim population” (Rashid, 2015, p. 23). The name refers to the generation of Muslims who were contemporaries of the Prophet Muhammad and the two subsequent generations (Olidort, 2015). Salafists consider this earliest form of Islam to be the pure form
and reject any subsequent innovations. Salafists have a highly literal, ‘black and white’ approach to interpreting Islamic scripture and see no separation between religion and state, as Allah alone is seen as having the right to make laws, which were revealed through the Prophet Muhammad.

Salafism itself is not a unified movement (Blanchard, 2007). Salafists can be broadly divided into three groups: the purists, who are the largest group and who avoid politics; the second largest group are the activists, who are politically active but work through existing political institutions; and the smallest group, the jihadists, who form a small minority but have the largest public profile. It is this latter faction, Jihadist Salafism (Kepel, 2002), that provides the theological, ideological, and practical bases for movements like ISIS. Jihadist Salafists operate under an extreme, militaristic definition of ‘jihad’, which they regard as an obligation to conduct a military campaign against everyone who they perceive to be threats to and enemies of Islam. Islam’s enemies are regarded as either consisting of or being orchestrated by “an insidious alliance of Crusaders and Jews” (Tabarani, 2011, p.11).

2.3 Dabiq magazine

ISIS puts forward an explicit and unequivocal agenda and an integral instrument for disseminating that agenda is its online magazine Dabiq. Dabiq is published in a number of languages, including English, and is one place where ISIS makes its agenda accessible to the non-Arabic speaking world. Fifteen issues of Dabiq have been published between July 5, 2015 and July 31, 2016, making it a rich source of data on ISIS. As the material from the latest issue had yet to be extracted at the time of writing, the material from Issue 15 is not included in the discussion below.

3. Theoretical approach: van Leeuwen’s social semiotics

The analytical approach adopted here is multimodal social semiotic theory, which studies human signifying processes as social practices and which is concerned with different sign systems and their integration in texts and social activities, interpreted within the context of the situation and culture (e.g. Halliday, 1978; van Leeuwen, 2005). One of the key tenets of social semiotic theory is the premise that language and other semiotic resources are structured
According to the functions which the resources have evolved to serve in society: (a) experiential and logical meaning to structure our experience of the world; (b) interpersonal meaning to enact social relations and create a stance towards happenings and entities in the world; and (c) textual meaning to organise experiential, logical and interpersonal meanings into coherent messages (e.g. Halliday & Matthiessen, 2014). Although initially applied to language, the metafunctional principle has since been adapted and expanded to the study of visual images and other semiotic artefacts and phenomena to account for the ways in which linguistic and non-linguistic resources combine in the communication of meaning (e.g. Kress & van Leeuwen, 2006; van Leeuwen, 2005). According to van Leeuwen (2005, p. 1) “social semiotics is a form of enquiry. It does not offer ready-made answers. It offers ideas for formulating questions and ways of searching for answers”. It is this broad view of social semiotics that provides the theoretical foundations for interpreting the text and image combinations in *Dabiq* in the first phase of this study. A more systemically oriented approach in which semiotic resources are conceptualised as systems of meaning with networks of options from which choices are made in the communication of meaning in multimodal texts will be undertaken in the next phase of the project. In this case, choices in the metafunctionally organised systems of lower-level features such as Participant Type, Dress, Gaze, Gesture, Shot Distance, Camera Angle, Colour Contrast, Camera Focus, and Compositional Vectors will be used to inform machine learning techniques to develop data mining algorithms for the automated analysis of the larger dataset. These will then be combined with the higher order semantic classifications of keywords derived from Wikipedia (see O’Halloran et al. 2016 in press) in an attempt to build on and expand van Leeuwen’s social semiotic frameworks to the analysis of large multimodal datasets.

**4. Exploring (re)contextualisations of social practices through text-image combinations in *Dabiq***

As Kress and van Leeuwen (2006, p. 177) explain, when analysing composite multimodal texts comprising text-image combinations, the question arises “whether the meanings of the whole should be treated as the sum of the meanings of the parts or whether the parts should be looked upon as interacting with and affecting one another”. Rather than looking at the contributions of individual semiotic resources, this pilot study looks the overall meaning that arises from the text-image combinations in *Dabiq*.
In the first phase of the study, 14 issues of *Dabiq* were downloaded. Each image, as well as the page it appeared on, was extracted and image files were catalogued according to (a) which issue the image was from; and (b) what page of the issue it was from. In total 1,012 images were classified into 11 superordinate categories and 75 sub-categories according to distinguishing features, their subject matter (i.e. experiential meaning) and their context. Table 1 shows the superordinate image categories and defines key terms used in the classification.

Table 1: Image classifications and explanations of key terms

<table>
<thead>
<tr>
<th>Image Category</th>
<th>Description (Experiential Meaning)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. FAR ENEMY</td>
<td>The term Far Enemy is used by Jihadist Salafists to refer to Western sponsors of Arab regimes: the United States, its Western allies and Israel (Burke, 2004, p. 19).</td>
</tr>
<tr>
<td>2. NEAR ENEMY</td>
<td>The term Near Enemy was initially applied to secular Arab regimes considered apostate by jihadists (Byman, 2003, p. 146). It is also used to refer to other secular Muslim regimes (Gerges, 2009, p. 1).</td>
</tr>
<tr>
<td>3. ISIS HEROES</td>
<td>Heroes are people, living and dead, regarded by ISIS as worthy of emulation. Hero images are sub-classified according to whether the hero is alive – mostly mujahideen, or dead – martyrs.</td>
</tr>
<tr>
<td>4. ISIS ICONS</td>
<td>The concept of ‘icons’ is derived from SFL work on iconisation (Martin &amp; Stenglin, 2007; Martin &amp; Zappavigna, 2013; Tann, 2013). Three prominent ISIS icons are identified: the ISIS flag, the AK47 assault rifle, and what we refer to as the Tawheed gesture. These icons are often used in combination with other image categories.</td>
</tr>
<tr>
<td>5. HISTORICAL RECREATIONS</td>
<td>Historical re-creations are usually staged or photo-shopped, representations of apocalyptic events and historical events.</td>
</tr>
<tr>
<td>6. ISIS LAW ENFORCEMENT</td>
<td>These are typically in-situ documentary shots showing ISIS involved in aspects of Shari’a law enforcement.</td>
</tr>
<tr>
<td>7. ISIS SOCIAL WELFARE</td>
<td>These are a combination of in-situ documentary shots and in situ posed shots showing ISIS engaged in social welfare activities.</td>
</tr>
<tr>
<td>8. OTHER ISIS OBJECTS, PLACES, EVENTS</td>
<td>Assorted ISIS-related imagery.</td>
</tr>
<tr>
<td>9. OTHER OBJECTS, PLACES, EVENTS</td>
<td>Assorted non-ISIS-related imagery.</td>
</tr>
<tr>
<td>10. PLEDGES OF ALLEGIANCE</td>
<td>Images of actions signifying allegiance to ISIS.</td>
</tr>
<tr>
<td>11. SCRIPTURE</td>
<td>Includes images of scripture in Arabic. Also includes enacted creed, depicting mujahideen reading scripture, or showing them in prayer after ‘victory’.</td>
</tr>
</tbody>
</table>

The articles in *Dabiq* were classified according to article titles and matched with issues to determine their distribution across issues (see Table 2). The labels we assign to *Dabiq* article types, although different in wording, more or less match the content of those used by Colas (2016, pp. 3-5).
The images were then matched to the article types, which provide contextual information for identifying and classifying the different image types. The resulting text-image combinations reflect ISIS’s motivations and interests, and thus form the basis for understanding the world view adopted by ISIS in its online magazine (e.g. see Colas, 2016; Wignell, Tan, & O’Halloran, 2016 in press). This is in line with van Leeuwen’s (2008) conceptualisation of discourse as recontextualised social practice.

Before exploring the larger patterns of text-image connections and their recontextualisations in *Dabiq* and other media in Section 5, we first discuss the typical text-image combinations that are found in *Dabiq*, and make some initial observations about (a) how these serve to contextualise ISIS’s beliefs, values, and social practices, and (b) how these multimodal propaganda materials may appeal to audiences. Examples of typical image-article type combinations in *Dabiq* are shown in Figure 2.
Figure 2: Examples of image-article type combinations in *Dabiq*, Issues 1-14
**Foreword:** Foreword (called Introduction in Issue 1) features in every issue of *Dabiq*. The articles are akin to editorials and reflect ISIS values. Topics are varied and include migration to ISIS territory, encouragement of lone-wolf attacks, gloating reports on attacks on western countries, denunciations of Far Enemy, promises of ISIS victory, gloating reports about attacks on the Near Enemy (especially Shi’a Muslims), which are all legitimised by ISIS through references to selected Islamic scripture that pervade the articles. The images included with this type of article (48) range over 18 different categories and sub-categories. By far the most commonly featured images (15 out of 48) depict Attacks by ISIS on the Far Enemy (e.g. Issues 6, 8, 10, 12-14). However, in terms of their interpersonal appeal, these images, which tend to be imported from mainstream news media, are not necessarily salient. As Colas (2016: 3) aptly points out, a “page count”, or in this case, an image count, “does not equate to a reader’s emotional response”. Kress and van Leeuwen (2006) and van Leeuwen (2005) refer to salience as the way which visual elements attract the viewer’s attention because of their size, colour, contrast, etc. In this sense, the images of an ISIS Hero, an ISIS Flag, and a Far Enemy Captive in Issues 1, 2, and 3, which set out ISIS’s agenda and values, are far more prominent and eye-catching.

**Hikmah (or Wisdom) & Among the Believers are Men:** ‘Hikmah (or Wisdom)’ is a series of religiously inspired feature articles which appear in every issue of *Dabiq*, Hikmah articles usually contain large, striking images (25 in total, from 19 different categories and sub-categories), often occupying the whole page. The most frequently featured images are, again, of ISIS Heroes (seven images), specifically mujahideen engaged in the act of celebration (e.g. Issue 7) and pre and post martyrdom images of martyrs. In Issues 7 to 14, Hikmah articles are usually followed by the article type ‘Among the Believers are Men’, mostly stories of ISIS Heroes, particularly of exemplary martyrs. The image sub-category martyrs-in narrative, which depicts the life and exploits of the martyr, features prominently in the majority of images (17 out of 20). These image-article type combinations reflect ISIS’s ideology and social practices as embodied through emblems, logos, flags, rituals and ceremonies (for a more detailed discussion of ISIS’s world view and values as represented through ‘bonding icons’ in *Dabiq*, see Wignell, Tan & O’Halloran, 2016 in press).

**From/To Our Sisters:** In the later issues of *Dabiq* (7-13), articles paying homage to martyrs are frequently followed by the article type ‘From/To Our Sisters’, which deals with a range of topics on what ISIS considers women’s issues. Topics include: Migration to ISIS lands, slave
girls or prostitutes, advice to wives of Muslims fighting against ISIS, the role of women in jihad, how many wives a man can have, how widows should behave, and an interview with the widow of a martyr. The most frequently appearing images are of ISIS children dressed in military fatigues (e.g. Issues 10 and 11), perhaps with the intent to appeal to female ISIS sympathisers. They also contain images of a martyred husband (Issue 7), or a series of innocuous background images likely sourced from image banks (e.g. Issues 8, 9, and 12). Although these articles have a woman’s name as the by-line, and appear to be written by a woman, they do not contain any images of women at all. In other words, although women are included as social actors in the linguistic text, all women are visually excluded from the discourse\(^2\) (e.g. see van Leeuwen, 2008 for a discussion on the representation of social actors).

**From the Pages of History:** Another article type that appears only in the later issues of *Dabiq* (7-14) is ‘From the Pages of History’ A common topic in these articles is the placing of blame on the Near and Far Enemy. However, images depicting the Near and Far Enemy, although frequent (13 out of 30 images, Issues 7, 9, 11, and 13), are not necessarily salient in terms of their size and compositional placement within the page. Instead, the dynamicity portrayed by men on horseback with swords in staged images of historical conquests, which are paired with articles about the reconstruction of past Islamic ‘glory days’ (Issues 8, 10, and 14) makes them interpersonally more engaging.

**Interviews:** Interviews, usually with leaders of other organisations that have pledged allegiance to ISIS, are likewise found only in the later issues of *Dabiq* (7-14). The articles contain a variety of diverse images (49), ranging over 23 categories and sub-categories. The most frequently occurring images are depictions of the Near Enemy (23 images), with Near Enemy Leaders and Public Figures being the most common (14 images). However, like in articles ‘From the Pages of History’, these images are usually non-salient and embedded within the article. Generally, large, ISIS-related images are only placed at the beginning of the article. Many of those images feature ISIS Heroes (e.g. Issues 7, 8, 12, and 13), although they may not always be the subject of the interview. Often staged or posed, these ‘heroes’ occupy the whole page, and address the reader directly through their gaze, which possible makes them interpersonally appealing to both ISIS supporters and those that resist terrorist discourses (see discussion in Section 5.4 on the results of the reverse image search).
**Near Enemy Issues & In the words of the Enemy:** Near Enemy Issues are articles that criticise the Near Enemy. They are found in Issue 6 and Issues 8-13. Not surprisingly, images depicting the Near Enemy (44 out of 74 images from 26 categories and sub-categories) are most frequently featured in this type of article. The article type ‘In the words of the Enemy’ appears in every issue of *Dabiq*. These articles are mostly concerned with highlighting the strength of ISIS, and showing enemies as disunited, or showing Far Enemy Leaders, Jews and Near Enemy leaders as being in collusion, which is also reflected in the images. Most images (46 over 12 different categories and sub-categories) appear to be imported, and are usually large, unflattering close shots of grim or pensive looking Far Enemy Leaders and Public Figures (25 images in total).

**Feature Articles:** Feature articles (40) appear in every issue of *Dabiq* (often more than one article per issue) and are the most varied article type. They cover a wide variety of different topics, including, why ISIS is the legitimate ruler of all Muslims, advice to mujahideen on their obligations, jihad, denunciation of Jews, Shi’a Muslims and Crusaders, conspiracies between the Far and Near Enemy and why ISIS is right and other jihadist and nationalist groups are wrong. Feature articles usually contain a plethora of citations from Islamic scripture to support the points they are making. The images (255) included with feature articles are similarly diverse, ranging over 78 categories and sub-categories. While the most frequently occurring images are from the Far and Near Enemy categories (74 images), few of these images are very salient. Instead, the most prominent images with the power to engage readers at an interpersonal level are those that directly reflect ISIS’s values (e.g. see Wignell, Tan & O’Halloran, 2016 in press), depicting a variety of ISIS Heroes (57 images), and ISIS Icons (18 images) such as ISIS flags and Tawheed gestures (one arm raised with the index finger pointing skywards, which is meant to signify the indivisible oneness of Allah (Zelinsky, 2014)). The most salient and interpersonally engaging images (in terms of compositional arrangement, framing, colour, and size) are perhaps found in Issue 1.

**Far Enemy Captives:** Another type of feature article is concerned explicitly with the fate of Far Enemy captives. The articles, found in Issues 3, 4, 7, 11, and 12, are about the punishment of captives for ‘crimes’ against ISIS by the country the captive is from. The majority of images (15 out of 22 images) show Far Enemy Captives wearing a ‘Guantanamo jumpsuit’, often posed as if about to be executed (all captives depicted in these images were subsequently killed). Some images display the body of the captive(s) after death (e.g. Issue 4
Images of this kind serve a dual purpose: attracting ISIS sympathisers to their cause, and shocking and intimidating mainstream audiences who may find these images distasteful and offensive.

**John Cantlie:** John Cantlie is a British journalist who was captured by ISIS in 2012 and who writes commentaries in support of ISIS (under duress). These articles, which appear in Issues 4-9, 12, and 14, stand out from the rest of the articles in *Dabiq*, as they follow typical western journalistic editorial or op-ed style, written mostly in the first person. The articles are usually positioned towards the end of the magazine, and include a total of 28 images from 12 categories and sub-categories. In some issues the articles include large, prominent images of the author, often on the first and last page of the article (Issues 4-6). Two of the articles depict the author as a Far Enemy Captive wearing a ‘Guantanamo jumpsuit’ (Issue 4 and 12), while other issues show him dressed in civilian clothes, perhaps in an attempt to show that Cantlie has accepted or even embraced ISIS’s way of life, and to legitimise the views expressed as his own.

**ISIS Reports:** These articles, which can be found in Issues 1-9, 11, 13 and 14, are mostly local and district reports of ISIS military activity and successes. The reports are news-like, matter of fact, and often composed almost entirely of images with captions, particularly in the early issues of *Dabiq*. Although the images themselves (321, ranging over 81 categories and sub-categories) are mainly shot in documentary style, their compositional arrangement, size, framing, and large headlines and captions renders them interpersonally salient. The most frequently featured images are concerned with the Near Enemy (124 images), specifically Actions by ISIS against the Near Enemy (94 images), blowing things up and destroying ‘shirk’ (objects related to polytheism and idol-worship) (37 and 22 images respectively). Explicit images of Near Enemy battle casualties (10 images) also feature frequently. Documentary images of this kind serve to create authenticity and provide evidence of ISIS’s successes in expanding the caliphate.

In the above section we discussed some of the social practices (re)contextualised in the text-image combinations typically found in *Dabiq*, These serve as a basis for exploring larger patterns of distribution, which are discussed in the following section.
5. Exploring text-image connections and recontextualisations through interactive visualisations

Information visualisation permits exploration of patterns in large, multi-dimensional data sets through a range of tasks, such as overviewing the whole data set, zooming into items of interest, filtering out items, selecting details-on-demand, and extracting sub-collections (Shneiderman, 1996). In this case, the prototype Multimodal Analysis Visualisation application (MMA Visualisation app) has several different visualisations for displaying *Dabiq* image categories and text types, combinations of images and texts in *Dabiq*, and the results of reverse image searches which show where images in *Dabiq* are located across different online media sites over time. In what follows, we illustrate some of the initial findings of text-image connections in *Dabiq* and the reserve image search.

5.1 Image/Article Type Distribution

Image-article type distributions can be visualised by means of simple pie charts. Our analysis revealed that the distribution of images and articles types in *Dabiq* is not constant but shifts in tandem with the state of affairs and evolving agenda of ISIS over time. Figure 3a (top), for example, shows that, in the first issue of *Dabiq*, greater emphasis is placed on ISIS Heroes (29% of all images). Figure 3a (bottom) reveals that the emphasis on ISIS Heroes diminishes in the later issues of *Dabiq*, such as in Issue 12, which was released more than a year later on 18 November 2015 (almost immediately after the Paris attacks on 13 November 2015), where images of ISIS Heroes account for only 15%. Here, emphasis is placed on the Near and Far Enemy, which together make up more than half of all images (52%), reflecting ISIS’s concern with attacks on Near and Far Enemy countries. At the same time, while there were only 7 article types in the first issue, the diversity of article types also increased in the later issues of *Dabiq*. 
Figure 3a: Comparison of image/article type distribution in *Dabiq* Issue 1 (top) and Issue 12 (bottom)
5.2 Image/Article Type Frequency Analysis

The increasing concern with Near Enemy issues over time can also be visualised in terms of an image/article type frequency analysis (see Figure 3b).

Figure 3b: Image/article type frequency analysis for image category ‘Near Enemy’ and article type ‘Near Enemy Issues’, *Dabiq* Issues 1-14

5.3 Image-Article Type Connections

The change in emphasis over time of image and article types can also be investigated by means of image-article type connections using arc graphs and interactive tables. Taking Issues 1 and 12 as examples, there are fewer and different image/article type combinations in
Issue 1 than in Issue 12. This can be attributed to the greater variety of articles types in Issue 12 compared to Issue 1 (16 versus 7). An interrogation of image-article type connections for the categories (and subcategories) of Far and Near Enemy, for example, reveals a concentration of Near Enemy image categories and subcategories in ISIS Reports in Issue 1. Both the graph and table in Figure 3c (top) show a total of 4 Near Enemy sub-categories distributed over 2 article types. In contrast, Figure 3c (bottom) reflects a much wider spread and diversity of image/article type connections in Issue 12.

The overall pattern of all image-article type combinations in the 14 issues of *Dabiq* is displayed in Figure 3d.
Figure 3c: Comparison of Image/Article Type Connections for the image categories and subcategories of Far and Near Enemy in *Dabiq* Issue 1 (top) and 12 (bottom) (Note: ...
Near Enemy subcategories are represented by blue arcs, Far Enemy subcategories by red arcs.

**Figure 3d**: Total number of image/article type connections in *Dabiq* Issues 1-14

### 5.4 Reverse Image Search

The MMA Visualisation app has facilities for showing the results of the reverse image search which is used to trace the online locations of images found in *Dabiq*. The reverse image search was undertaken using TinEye³, which functions in a similar fashion to Google image search. That is, TinEye uses image identification technology rather than keywords, metadata or watermarks, so searches are based on images. Upon submitting an image, TinEye creates a digital signature of the image and matches it with other indexed images. This procedure is able to match even heavily edited versions of the submitted image. The results of the reverse
image search include the URLs where the image is located and the date in which the site was indexed.

For example, the results of the reverse image search for the image of ‘The Flood’, which is featured in Issue 2 of *Dabiq* and categorised as an Apocalyptic Event, is displayed in Figure 3e. In the bar graph, the red bar is a marker of the publication date when the image appeared in *Dabiq* and the grey bars indicate the frequency of appearances in other online sites according to date. The various appearances of the image are listed below the graph according to an ID number, the crawl date of the TinEye search, the web URL, the image URL, and a flag which indicates whether the image appeared before it was published in *Dabiq* (-1) or afterwards (+1).
Figure 3e: Reserve image search results for ‘The Flood’ in *Dabiq* Issue 2

The reverse image search tool thus allows us to explore which type of images in *Dabiq* appeared or reappeared across different online sites over time. The reverse image search tool is particularly useful for investigating the recontextualised use of images either imported into...
or originating in *Dabiq*. For example, the results of the reserve image search for the image of ‘The Flood’ displayed in Figure 3c (reproduced in Figure 3f, left) reveals that the image appears to be cropped from a movie poster for the feature film ‘Noah’ starring Russell Crowe, which was used by movieguide.org⁴ in the context of evangelisation. An image identical to the one used in *Dabiq* also appeared on a wallpaper repository site, WallpapersWide.com⁵, before it was recontextualised by *Dabiq* as a warning to those who resist ISIS. There are other early records of the appearance of the image (as can be seen from the grey bars which appear to the left of the red bar in Figure 3e), but in some cases these websites are no longer accessible (e.g. the server cannot be found or access is prohibited).

A reverse image search can also yield insights about the recontextualised uses of images from *Dabiq* in discourses that function to resist terrorism. The recontextualised use of some images in counter-discourses is more evident in some cases than in others. For example, the reverse image search of an image that features an ISIS Hero “Abū Muqātil”, which appeared in *Dabiq* Issue 8 (Figure 3f, right), found images of the same person, renamed “Abu Muquack” and with the face of a rubber duck in place of his own face in the magazine MAXIM (maxim.com⁶). This image, which originated as part of a campaign called ‘Allahu Quackbar’ by the hacker group Anonymous, has found its way on to a number of social media, entertainment news and magazine websites and reveals that the same image was recontextualised explicitly for the purpose of resisting violent extremist discourse, as shown by the case of MAXIM magazine. As such, MMA Visualization app has the potential to permit widespread investigation of exactly how violent extremist images are re-used across different media sites for different purposes.
The MMA Visualisation app also provides an overview of the websites in which images from *Dabiq* are found by means of an integrated word-cloud tool. For example, the word cloud in Figure 3g (top) reveals that images from the Far Enemy category in Issue 1 appeared mainly on news websites, such as bbc.com, heraldsun.com, merdeka.com, but also on some more sinister websites, such as documentingreality.com, which is a source for death pictures and death videos. In contrast, images from the same category in Issue 12 (Figure 3g, bottom) also circulated on social media, social news and entertainment networking sites, such as twitter.com, reddit.com, mashable.com, buzzfeed.com, etc. In this way, it is possible to explore trends in relation to the appearance of different images over different media sites over time.
6. Conclusion and future directions

While the pilot project has yielded some interesting patterns and results, the next stage involves applying these insights to the analysis of large datasets. The contextualisation of images in *Dabiq* provides a baseline and reference point for analysing recontextualisations both before and after publication in *Dabiq*. Going forward, we are faced with some fundamental questions which have yet to be resolved. For instance, machine learning techniques can be applied to the text and images which have been manually analysed for big data analytics, but what about the new materials (i.e. textual and visual) found on websites where the re-used images appear? A mixed methods approach (O’Halloran et al., 2016) proposes to overcome the problems associated with analysing large datasets by using contextual information derived from metadata and Wikipedia’s categorisation system which provides higher order semantic classifications of key words and objects to assist with the
interpretative process. Together with natural language processing algorithms (e.g. keyword identification, sentiment analysis), we hope to automatically ascertain information about the nature of the multimodal recontextualisations of the images across different media sites. This process will not be straightforward, however, given the large number of different media platforms in which the images are found and the wide range of texts which are involved.

With this in mind, our next step is to apply image processing techniques to the Dabiq images in order to identify the key characteristics of the images (e.g. icons, objects, faces, focus, perspective) which are associated with the different image categories. From here, we can build up a picture of the visual systems which are at play in these images, and how choices from these systems are exploited in order to support and resist violent extremism. Following this, we aim to explore the use of natural language processing algorithms and Wikipedia categorisation trees for automatic classifications of the texts in which these images appear, with a view to developing interactive visualisations for exploring the patterns thus established. In this way, we aim to investigate the potential of multimodal semiotics for understanding how multimodal recontextualisations reconfigure social practices, building upon the theoretical principles developed by van Leeuwen (2005, 2008).

Notes
2 Even in cases where women are present in the images, they are categorically pixelated in Dabiq.
3 https://www.tineye.com/
4 https://www.movieguide.org/news-articles/can-noah-be-used-to-evangelize.html
5 http://wallpaperswide.com/1920x600-wallpapers-t/page/5

References


