Network for the Advancement of Social and Political Studies (NASP)
PhD Program in Political Studies (POLS) – XXXII Cohort
PhD Dissertation

TWEETING THE CALIPHATE. THE IDEOLOGY OF IS IN THE ARABIC-SPEAKING TWITTER-SPHERE

TUTOR:
PROF. LUIGI CURINI

PH. D. CANDIDATE:
MATTEO COLOMBO

DIRECTOR:
PROF. MATTEO JESSOULA

Contents

List of Figures

List of Tables

Acknowledgements

I have learned much over the last three years both from an academic and personal point of view, and there are several people I should thank for it. The first is undoubtedly my supervisor Luigi Curini, who provided me with the best guidance I could possibly hope for. First, he was a great example of a committed and enthusiastic academic. Second, he guided me in the previously unknown worlds of text analysis and machine learning by providing me with the best map to explore these new territories. Third, over the past three years, I have always ended our meeting a bit calmer than I started it. Fourth, I've always felt his trust also when learning new skills, which means a lot when learning a new methodology. I truly hope the thesis will be the first step in working together over the next years.

With respect to the thesis, the work which I intend to derive from this research will greatly benefit from the outstanding revisions of Massimiliano Trentin and Pablo Barberà. Furthermore, I consider the opportunity to defend my work with Kenneth Benoit, Fabio Franchino and Olivier Roy as a great privilege. I am sure their comments help me to improve even more the presented work for a forthcoming publication. I also wish to thank Paolo Maggiolini, and Andrea Plebani for their valuable suggestions thought the years.

I also want to thank my parents for several reasons. I have always felt their support and love over the last years in good times and bad times. I really hope my work will make them proud of me. They have always been my best example, and I cannot be luckier as a son. During the period of the thesis, I have also become a husband. Over the last three years, my wife Adrienne has been more than just a lovely partner. She listened to me when I was nervous about some passages of the thesis, and we often shared ideas about my thesis. She has also been my best friend. I owe her a lot for supporting me, and I apologise: I had to cancel a holiday over the last summer, I spent part of the summer before sitting in a caravan to learn R, and we are still to enjoy our honeymoon.

During these three years, I have also kept my collaboration with ISPI. I would like to thank two persons, in particular, Valeria Talbot and Arturo Varvelli, who have taught me a lot on how to conduct research. I have learned from them many skills which became very useful in the last three years and I consider them more friends than just colleagues. Among the many other ISPI colleagues and friends, I owe a special debt to Paolo Magri, who gave me the possibility of learning more about the world of research coming from journalism.

Finally, I want to thank Mina Samir, Hamdan al-Zekri, and Islam Fawzi for their help with the Arabic translation, as well as Giulia Gray for her English editing services. Their work has been highly valuable in improving the quality of the thesis.

Note on transliteration from Modern Standard Arabic

For the Arabic words, I mostly utilised the transliteration system of the International Journal of Middle East Studies (IJMES). However, I have not transliterated the broken plural for the most common words (e.g. *I utilise Sunnīs for the plural of Sunnī instead of the broken plural Sunan*) and I have kept some Arabic words often utilised in the most common English form (*e.g. Daesh, al- Jazeera, Houthi, Hezbollah*) and some names (*e.g. Bin Laden*) to simplify the reading for non-Arabic-speakers.

Introduction

On the 4th of June 2014, a man called Ibrāhīm ʿAwed Ibrāhīm ʿAlī al-Badrī al-Sāmarrāʾī climbed the stairs of the pulpit in the al-Nuri mosque of Mosul (Chulov, 2014). The image of a man with a long black beard, wearing black robes and a turban, quickly gained the headlines in the news all over the world, making the local function of al-Nuri mosque arguably the most broadcast Muslim prayer in history. However, the Friday prayer had no specific religious significance and the speech of the local Imam, also known as Abū Bakr al-Baghdādī, did not add any relevant content to the previous messages of the so-called Islamic State (IS). It was primarily a mediatic event.

The al-Nūrī mosque prayer represents a landmark of IS communication strategy. The IS media team had left nothing to chance in the first public appearance of their Caliph. al-Baghdādī's clothes looked like those worn by the Abbasid Caliphs, regarded by the Sunnī tradition as the golden rulers of the Islamic community. The video alternated shots of al-Baghdādī from different angles with captions of the crowd participating in the religious function to stress the public legitimation for the self-proclaimed Caliph. More than a religious function, the event was constructed as a film set. The images were quickly published by IS on Social media, where both sympathisers and opposers spread them. The IS communication strategy achieved its goal of making the face of al-Baghdādī and the name of the group widely recognized, not only for Jihadists[1] and experts, but also for ordinary people. The group was no longer perceived as just a Jihadi group like many others, but it became the main threat to global security. Over the following years, many academics and experts have analysed the communication features of the so-called Islamic State (IS). These studies mostly focus either on the overall strategy of IS or on specific aspects of its propaganda on social media and elsewhere by highlighting how pro-IS users have spread their discourses on different online platforms or across the territories they have controlled since 2014. This dissertation aims to contribute to the current debate by looking at the discussion about IS ideology in the online Arabic-speaking community[2]. To do so, I draw from a database of more than 32 million and 700 tweets in Arabic, which contain references to IS. This sample stretches across a three-year period, starting from the rise of the Islamic State (October 2014) to its military defeat in its unofficial capital of Raqqa (October 2017). The dissertation consists of three chapters. The first chapter analyses the degree of support for and hostility to the Islamic State and related users' opinions. The second chapter analyses the determinants of the pro-IS discourse in the analysed period. The third chapter examines the attitude of the general Arabic-speaking community in discussing the 'near enemies' (*Iran and its regional allies*) and the alleged hostility from the Shīʿa community to understand how users have responded to the sectarian discourse of the alleged Caliphate.

1 I define as jihadism all these groups which consider violent jihād to be an individual duty for all Muslims at this given time, as I will discuss later.

2 For the purpose of the research, I also consider the Kurds who speak Arabic, mostly from Iraq and Syria, as part of the online Arabic-speaking communities.

0.1. Literature review

This dissertation contributes to four bodies of literature, namely those on terrorism, Jihadism, ideology and social media analysis. Let us consider the body of literature on terrorism first. Currently, while there is no shared definition of terrorism, some characteristics of terrorism can be identified in the existing definitions. Schmid (2011) correctly observed that the five most recurrent terms used in the expert definitions of terrorism[3] are 'violence', 'political', 'fear, terror emphasised', 'threat', and '(psychological) effects and (anticipated) reactions'. These terms suggest that terrorism can be defined through its means (violence) and goal (widespread fear) (Kaplan, 1981; Oots, 1990, p. 145). However, these recurrent terms in definitions also address another characteristic of terrorism, which is its political nature. Unlike criminal organisations, terrorist groups are politically motivated (Ruby, 2002, p. 10), and their worldview provides the theoretical framework for understanding current events and justifying their actions. Although criminal groups might implement terrorist-like actions to obtain economic goals (*e.g. drug cartels in Mexico*) or contingent political gains (*e.g. Mafia bombings in Italy*), terrorist organisations aim firstly at creating a radically different political order. In conclusion, terrorism can be broadly defined as 'the use of violence to create fear *(i.e., terror, psychic fear*) for (1) political, (2) religious, or (3) ideological reasons' (Schmid, 2011, p. 29). This dissertation addresses the body of literature on terrorism because it considers IS to be a terrorist group. This might seem self-evident, but this classification is not uncontroversial. For example, some authors have stressed that IS presents some unusual characteristics for terrorist groups, such as engaging in conventional war and in para-state activities (Kalyvas, 2015) and holding control over a territory and para-state institutions (Cronin, 2015). Nonetheless, there is little doubt that IS has utilised terrorist practices, including widespread violence against not-combatants to generate fear (*e.g. Bataclan attack, Manchester concert, attacks against Mosques etc.*). These attacks have also been justified by referring to a well-defined ideological viewpoint and political project. Furthermore, IS aims at changing the current state of the world through violence. Finally, IS is included in the list of terrorist organisations of the United Nations (2019) and several states with opposite political orientations, including Russia (Federal Security Service, 2019), the U.S. (Department of State, 2019), or Saudi Arabia (BBC Arabic, 2014). I therefore consider IS to be a terrorist group, and I contend that my research aims at contributing to the field of terrorism analysis by providing a study of the interplay of IS discourse in the Arabic-speaking Twitter-sphere. It follows that the three chapters of the dissertation will include studies on terrorist groups and their discourses, as I consider them pertinent to understanding IS communication strategy and the main tenets of its ideology. Finally, by positioning my dissertation in the body of literature on terrorism, I consider that the proposed theoretical and methodological approach can also be potentially utilised for studies on other terrorist organisations.

More specifically, the dissertation looks at a specific aspect of terrorism, which is its ideological discourse and the often-neglected discussion about the terrorist group in a wider audience. More in detail, it conceptualises terrorism as a violent language of communication (Wight, 2009), a discourse which sees attacks performed

3 Schmid asked 91 experts to provide a definition of terrorism in 2011. Their definitions can be found in Schmid (2011).

'with an eye to sending a specific (set of) message(s) to impress or influence specific audiences in one way or another' (Schmid, 2001, p. 266). Similarly to other terrorist organisations, IS discourse aims to generate fear among opposers, gaining support among possible sympathisers, and strengthening the commitment of supporters. To obtain these goals, IS has tailored a wide variety of propaganda products to deliver specific messages to targeted audiences (Farwell, 2014; Maggioni and al., 2015; Siboni and al., 2015) by using different communication means. Twitter discourse in Arabic is mostly designed to reach possible sympathisers (Sunnī) and to a lesser extent conventional (*e.g. Kurdish militias, Arab state soldiers*) and absolute enemies (*e.g. Arab Shīʿa, other Not-Sunnī communities*[4]*)* outside its controlled territory. The IS online strategy provided global notoriety to the group and a steady flow of foreign fighters. As correctly observed by Atwan (2015, p. 49), 'without digital technology it is highly unlikely that the Islamic State would ever have come into existence, let alone been able to survive and expand'. Further proof of the success of the Islamic State in implementing an effective online propaganda strategy is provided by *foreign fighters*, who have often acquired information on IS from the internet, or *lone wolves*, the radicalisation of whom has often involved the use of online sources (Huey 2015). To better understand the main features of IS online narrative, the following part provides a literature review on the Islamic State propaganda strategy, by discussing the existent literature on the issue of Jihadism and referring to IS propaganda materials which I have collected since 2014[5]. A common approach to analyse IS communication has been content analysis. Some authors have looked at *Dabiq*: the main English magazine of the terrorist group (Droogan and Peattie, 2017; Quinlan, 2017; Heck, 2017) to classify the most recurrent topics of the Islamic State propaganda. An example is a study of Axel Heck (2017), who identifies three recurrent themes in *Dabiq*: the claim that Muslims are 'victims' and, therefore, have the right to defend themselves; the ideological defence of IS interpretation of Islam; the call for global dominance. However, these studies are too limited in their scope as they overlook key elements of IS propaganda. Dabiq is written to appeal to a very specific audience: English-speaking *potential sympathisers*. Therefore, to focus exclusively on this material would provide only a partial picture of the wider IS online strategy, which also utilises videos, social media posts, infographics, music and other materials to target a variety of audiences in several languages.

Other authors have looked at these visual and textual materials to analyse the most recurrent themes in the Islamic State discourse. Winter (2015; 2017) analysed 1,146 separate materials in several languages from the media output of the Islamic State's official outlets in the period between 17th July and 15th August 2015. In his study, he argues that the most recurrent theme in IS propaganda was to present the alleged Caliphate as a utopian State. An example is the video *'Him we will give a good life'* (February 2016) which juxtaposes images of a chaotic Europe hit by terrorist attacks and setting up walls to stop migrants, with utopian images of ordinary life in the Islamic State (Wilāyat Ḥalab, 2016). Other propaganda videos focus on documenting state-

4 The definition of conventional and absolute enemies is drawn from the definition of the 'conventional' and 'absolute enemy in Schmitt, which can be found in the *Concept of the Political* (1932), and the *Theory of the Partisan* (1961).

5 The database includes both videos, magazines, tweets, photos and audios I collected for a set of lessons on IS communication strategy for the University of Pavia, the Polytechnic University of Milan, IULM University of Milan and a set of public lectures in different parts of Italy.

like institutions in the Caliphate, such as the introduction of the dinar as the currency (Wilāyat Ḥalab, 2015b), the activities of the hospitals (Wilāyat al-Raqqah, 2016), assistance for orphans (Wilāyat Nīnawā, 2016), the opening of an office for registering marriages (Wilāyat Nīnawā, 2015). The description of the Islamic State as a utopian Caliphate also spreads through the words of Foreign fighters. The Islamic State has often shared interviews with individuals who decided to migrate to its controlled territories. In this way, IS 'sought to offer itself to would-be supporters as a lifestyle choice, a utopian alternative within which new adherents would be blessed as founding fathers and mothers' (Winter, 2018, p. 110). Finally, Winter identifies the theme of war as another key aspect of IS propaganda. In this sense, the group shares propaganda material to show, celebrate and justify its attacks. This element of cruelty is nothing new in the history of conflicts. As correctly noted by Siboni and Cohen (2015, p. 138), 'terrorism is a type of propaganda, and the crueller the elements it includes, the greater its effect and the bigger the impression its leaves'. Winter's approach is particularly useful in understanding the most recurrent themes of IS ideology, but it does not provide an in-depth interpretation of its discourse. This is particularly relevant as IS discourse is closely linked to its ideology. A contribution in this sense is that of authors who have approached the IS discourse by referring to its ideology (Bunzel, 2015; Erdem and Bilge, 2017; McCants, 2015; Pregill, 2016; Quinlan, 2017). In particular, Erden and Bilge (2017) point out that IS divides the world into two camps: *Dār al-Islām* and *Dar al-Ḥarb*. The first includes the Sunnī community (*Dār al-Islām*), while the second comprises all the infidels (*Dar al-Ḥarb*). IS sees all Sunnīs as supporters or possible sympathisers who can be convinced to join its cause. On the contrary, the terrorist organisation contends that there is no possibility of peace with the infidels who must be defeated in war (*Dar al-Ḥarb*). This distinction is fundamental to IS discourse, which targets these two groups with very different messages. More specifically, the Islamic State aims to convince those who belong to the first group to join IS, while the others must be terrorized to be defeated. Within the Sunnī community, IS targets specifically Arab-Sunnīs for two ideological reasons. The first is that the Islamic tradition states that the Caliphate must be founded in the Arab land. The second is that the recruitment of Arabs increases the prestige of the organisation, and itis essential in spreading its message in the neighbouring territories. In addressing the Muslim in general, and the Arabic-speaking community in particular, IS refers to a symbolic framework which mixes historical, religious and political references. McCants (2015) shows that IS discourses to Arab and Muslims revolve around creating a community based on the example of the early Caliphate. To convey this discourse, IS utilises Islamic symbols which can be understood by ordinary Sunnī Muslims. For example, IS utilises a black banner as its flag, which resembles the banner of Muḥammad and the Abbasids (Bahari and Hassan, 2014). Another symbol of the IS flag is the seal of Muḥammad, which refers to the seal utilised by the Prophet of Islam to sign official letters. Furthermore, IS depicts its *jihād* within the framework of an epic war between Muslims and infidels which precedes the end of times by referring to Muslim eschatology (Roy, 2017, p. 54-56; McCants, 2015). For example, IS supporters often quote a 'saying of Muḥammad' (*ḥadīth*) which states that the enemy of Islam will 'gather for the fierce battle, and at that time they will come with eighty banners[6]' (Sunan Ibn

6 Sunan Ibn Majâh, Vol. 5, Book 36, Ḥadīth 4095

Majâh, 36: 4095). IS links the prophecy of the 80 banners (The Global Coalition, 2019) with the members of the international coalition. It might sound absurd to an educated audience, but this discourse functions well in the Arab and Islamic world. McCants (2015, p. 27) correctly points out that 'apocalyptic messages resonate among many Muslims today because of the political turmoil in the Middle East. In 2012, half of all Muslims in North Africa, the Middle East, and South Asia expected the imminent appearance of the Mahdī[7]'. These studies rightly point to the importance of including ideology in understanding the Islamic state communication strategy, as this terrorist group narrative is strongly influenced by its worldview. However, they do not provide a compelling analysis of the discussion about IS in the targeted community. An interesting contribution in this sense is provided by Wiechert (2017), who analyses the discourse of IS by utilising the categories of marketing. She argues that IS has implemented a marketing strategy to sell its brand to the Sunnī community in general and the Arab in particular, while not considering the Infidels as 'potential buyers'. The author identifies the core-market of IS with Muslim millennials who 'are unhappy with the current situation, who feel obliged to do something extraordinary, who are easily inspired and always in search of a new adventure' (Wiechert, 2017, p. 69). The themes of heroism and redemption are central also in the highly influential analysis of Olivier Roy (2017, p. 57), who rightly stresses that IS propaganda 'celebrates the individual who feels humiliated and dominated as an "avenger" and lone hero'.

Another theoretical framework to understand the discourse of IS is that of the social movement theory discussed by Pelletier and al., (2016, p. 872) which analyses the discourse of IS regarding the Islamic imagination. These authors argue that the terrorist group has addressed the Arab and Sunnī audience by presenting its message with references to the Muslim tradition, but with a different understanding. In this respect, the authors (2016, p. 872) claim that:

The Islamic State espouses many similar concepts as other Muslim traditions, it does so in a way that is divergent from the more broadly accepted tenets and applies them in a manner that is self-serving thereby reinterpreting the historical tradition of Islam.

These publications offer a relevant contribution to understanding how the Islamic State message has adapted to the Islamic and Arabic-speaking community. Furthermore, these authors rightly move from a Western-centred understanding of IS discourse. However, they rely on limited material to justify their assumptions, and they often lack an analysis of the discussion about IS discourse over an extensive-time period and in different locations. A broader set of material can be found by analysing social media in general and Twitter in particular, as 90% of the Islamic State propaganda on this platform utilises the Arabic language (Siegel and Tucker, 2017, p. 6). Twitter is particularly suitable for analysing the impact of IS propaganda, as the alleged Caliphate elected this platform as the main communication tool, especially in an initial phase. This is because the platform allows

حَدَّثَنَا عَبْدُ الرَّحْمَنِ بْنُ إِبْرَاهِيمَ، حَدَّثَنَا الْوَلِيدُ بْنُ مُسْلِمٍ، حَدَّثَنَا عَبْدُ اللَّهِ بْنُ الْعَلاَءِ، حَدَّثَنِي بُسْرُ بْنُ عُبَيْدِ اللَّهِ، حَدَّثَنِي أَبُو إِدْرِيسَ الْخَوْلاَنِيُّ، حَدَّثَنِي عَوْفُ بْنُ مَالِكٍ الأَشْجَعِيُّ، قَالَ قَالَ رَسُولُ اللَّهِ ـ صلى الله عليه وسلم ـ " تَكُونُ بَيْنَكُمْ وَبَيْنَ بَنِي الأَصْفَرِ هُدْنَةٌ فَيَغْدِرُونَ بِكُمْ فَيَسِيرُونَ إِلَيْكُمْ فِي ثَمَانِينَ غَايَةً تَحْتَ كُلِّ غَايَةٍ اثْنَا عَشَرَ أَلْفًا "

7 The *Mahdi* is an eschatological redeemer and a messianic figure who, according to some strains of Islamic tradition, will appear in the last days, before the day of judgment.

any user to spread its message beyond its circle and its national boundaries in a more effective way than other social media. It does not come as a surprise that many authors have focused on Twitter to analyse public opinion on transnational issues in the Arab world. For example, Abdo (2013; 2015) looks at a small number of accounts to understand the discourse from a limited group of Twitter Salafi[8] influencers, thus looking more at the qualitative analysis of their discourse than a quantitative examination of that of the Arabic-speaking community. Keohane, Romney, and Tingley (2015) provide a study on anti-Americanism on Twitter in which they argue that the hostility towards the U.S. is mostly based on political rather than religious reasons. Similarly, Siegel (2015; 2017) offers a compelling Sentiment analysis on anti-Shiism and anti-Sunnīsm from February to August 2015, also in relation to some key events. Other studies have utilised Twitter to analyse the discussion about IS discourse in the Arabic-speaking community. More specifically, Magdy and al. (2016) collected a set of 3.9 million tweets on IS between 13 October and 31 December 2014, and measured the degree of support and hostility to IS. Their study provides an interesting precedent to my dissertation, but it mostly relies on a dichotomic distinction between the term '*Dawla al-Islāmiyya'* (positive) and '*Daesh*' (negative). The authors claim that to use the full name of the group is a strong indicator of support for IS, while, in contrast, using Daesh is a general indication of opposition. This is not confirmed in my sample, where '*Dawla al-Islāmiyya*' (Islamic State) is associated with a positive sentiment only in 20.25% of Tweets, while Daesh (*singular and plural form*) is connected to negative sentiment in 98.84%. This is because the term '*Dawla al-Islāmiyya*' is often used in brackets in expressing a negative or neutral opinion on the group, especially in the first part of the analysed period. Furthermore, other expressions are used in connection to a positive Sentiment on IS, such as '*Dawla al-Khilāfah'* (Caliphate), '*Jund al-Khilāfah'* (Soldiers of the Caliphate) and others. A more promising approach is that of Ceron, Curini and Iacus (2016), who analysed 26.2 million comments published in the Arabic language on Twitter from July 2014 to January 2015 both to measure the Sentiment on IS and the relationship between online opinions across countries and offline behaviour, such as terrorist attacks. Their supervised method better captures the complexity of the Twitter discourse, as I will further discuss in the methodology part.

Drawing from these studies, my dissertation aims to contribute to the current debate on IS in three ways. First, it provides a more comprehensive study on the issue than previous researches, as it draws from a database of 32 million 700 tweets comprising 33.3% of all Arabic language tweets that explicitly discussed IS through a set of keywords over a three-year period (from October 2014 to September 2017). Second, it looks at the main determinants of IS ideology by examining those factors which have influenced the support for/opposition to the Islamic State on Twitter, and thirdly investigates the discourse on IS in relation to its the main enemies (Iran and its regional allies). Finally, it features an ideology-centred approach which does not limit the analysis

8 Salafism is a reform branch of Sunnī Islam which has developed in response to Western imperialism. The all-encompassing term indicates those who advocated a return to the traditions of the first three generations of Muslims. Politically speaking, Salafism ranges from strict obedience to Muslim rulers and silence on political matters to the idea that jihād against current rulers is a duty for all Sunnīs *(Wiktorowicz, 2006; Wagemakers, 2012; Olidort, 2015)*. I will provide a more compelling definition of the use of the term in my dissertation in the next pages.

to the degree of support for IS, but also to a set of assumptions linked to the Islamic State ideology. This element will be further discussed in the next part, which focuses on the theoretical approach of the dissertation.

0.2 Theoretical approach

In the previous part, I discussed the reasons for shifting the focus from IS propaganda to the Arabic-speaking Twitter-sphere on IS. In this part, I will explain my theoretical approach to the dissertation, which consists of ideology analysis. Ideology analysis is central to this dissertation because it allows me to distinguish between support for elements of the ideas presented by a group and support for the group itself. The ideology-centred approach draws mostly from the works of Van Dijk (1998; 2011) and Maynard (2014). These authors broadly define ideology as 'the basis of the social representations shared by members of a group' (Van Dijk, 1998, p. 5). Moreover, they argue that ideology provides an interpretative framework to construe events, to influence the understanding of what is accepted as true or false, and to shape individuals' conceptions of what is desirable and what is not permissible. In politics, ideology acquires relevance in defining the requisites of membership in a group, providing an interpretation model of events, and influencing decisions on preserving or changing the current state of the world. In Maynard's definition (2014, p. 306):

Political ideology is a distinctive overarching system of normative and/or reputedly factual ideas, typically shared by members of groups or organisations, which shapes their understandings of their political world and guides their political behaviour.

Van Dijk (1998, p. 5) identifies three aspects which characterise any ideology: *cognition, society* and *discourse*. *Cognition* means that 'ideologies are at least implicitly taken as some 'system of ideas', and hence belong to the symbolic field of thought and belief. *Society* speaks for the collective aspect of ideologies, which 'are social, and often (though not always) associated with group interests, conflicts or struggle'. *Discourse* refers to 'the way ideologies are typically expressed and reproduced in society'. More in detail, *discourse* is 'the site to produce identities. Van Dijk (2011, p. 20) correctly points out that 'discourse as interaction and communication does not occur in a vacuum but is instead part of a social situation in people's everyday lives, and an experience among others. In *discourse*, individuals first encounter in interactions new ideas, then support, reject or internalise them, and finally 'formulate general conclusions based on several experiences and observations' (Van Dijk, 1998, p. 193). Finally, discourse links with group dynamics, especially those relating to exclusion and inclusion, because individuals and group define their members, allies, opposers or enemies by encountering their ideas.

In the words of Van Dijk (1998, p. 69), 'ideologies are representations of who we are, what we stand for, what our values are and what our relationships are with other groups, in particular, our enemies or opponents'. Members of an ideological group define their identity mostly in opposition to others, drawing a clear distinction between who we and the others are (*Us* vs *them*). This dualism is central to the formation of group identity for three reasons. First, every group must draw a criterion to define who the others are. For example, Jihadist

organisations define all those who contest the idea of armed jihād as an individual duty for Muslims to be outside the Islamic community and therefore, enemies. Second, every ideological movement must set the criteria of membership to the group. For example, IS differentiates from other Jihadist groups (*e.g. al-Qāʿida*) because its membership criteria are to swear loyalty to the Caliph. Third, the distinction between 'Us' and 'Them' provides the theoretical framework for defining the actions of an ideological group, by distinguishing between allies and enemies. For example, IS split from al-Qāʿida because they believed that some Shīʿī[9] and non-Jihadist group could be seen as allied in the holy war against *Infidels*[10] under certain circumstances, while the Islamic State considers all Muslims who do join their group as enemies.In-group and out-group dynamics are central to my dissertation, as I am focusing especially on the representation of the enemies in the interactions on IS. There are four main reasons for this focus. The first is the centrality of 'Us vs Them' dynamics in political discourse. This is a central element in social identity theory, which argues that 'humans readily divide the social world into 'Us' and 'Them' and quickly associate 'Us' with good and 'Them' with bad' (Chang and al., 2014, p. 97). This constructed political distance has often been used to justify prejudices (Tajfel and Turner, 1979, p. 41) and intergroup political violence by leaders. The second is that some political groups in the Arab world had already included the categories of 'Us' and 'Them' long before IS emerged as a powerful group. As I will discuss in the next part, the idea that some or all non-Sunnī powers (*e.g. Iran, Russia, the US*) are somehow hostile to Islam and Sunnīs for cultural, political, religious or economic reasons emerged long before IS. The third is political violence between 'Us' and 'Them' - a widely debated topic in the Arabic-speaking community. In the period between 2014 and 2017, four major Arab countries (*Iraq, Libya, Syria, Yemen*) experienced violent conflicts. These conflicts had a great emotional impact on the transnational Sunnī communities, as most of the victims were fellow Arab Muslims. Furthermore, three of these four conflicts (Syria, Iraq, Yemen) were interpreted in the framework of proxy war, thus acquiring regional importance for ordinary Arabs. The fourth is that IS emerged from this war context by providing its own interpretation of events. The Islamic state discourse described current turmoil as a global war against Islam, interpreting non-Sunnī power as hostility mostly in religious terms. In a nutshell, the message of IS is that there is an existential threat for the entire Muslim community and IS aims to defend Islam and Sunnī.

The aforementioned theoretical approach is complemented by Freeden's morphologic method. This author defines ideologies as made of 'building blocks' (1996, p. 48) - core concepts which combine in different ways to provide a distinctive worldview to interpret reality. To better understand what a 'building block' is, it is useful to think of an ideology without a certain assumption. For example, it would be impossible to conceive communism without the idea of a struggle between the dominant and dominated class. To use an architectural metaphor, a system of ideas is both the pillars which sustain a construction and the characteristics which make one building different from another, such as its height or number of floors. In other words, building blocks are

9 Shīʿīsm represents the second most faith within the Islamic faith (roughly 10-13% of the total believers). In the Middle East, the percentage reaches 25-30% of the total population when including Iran.

10 In defining 'Infidels' Jihadist groups indicate both the US and its allies, Russia, and al. other powers (e.g. China, Japan).

those ideas without which one system of ideas would be incoherent or indistinguishable from any other. This approach accounts for ideologies sharing some common assumptions, but still being significantly different in their outlook, similarly to different constructions, which can be made with the same building material, but which still look different. For example, both Jihadism (*e.g. IS*) and Islamic conservatism (*e.g., Tunisian El Nahda party*[11]) support the idea that the politics should be based on Islamic values, but the first argues that the rules of the Islamic law (*Sharīʿa)* should be implemented in a Caliphate, while the second stands for a democratic framework and a secular Constitution. Furthermore, the morphologic approach argues also that 'ideologies are to be distinguished (…) by the impact and centrality attributed to it within one ideology in contrast to its downplaying in another' (Freeden, 2013, p. 135). For example, both al-Qāʿida and IS share the idea that Shīʿī are an enemy of Islam but, unlike al-Qāʿida, IS considers them to be the main enemy to fight against. The morphologic approach allows to fully capture these ideological nuances, while still maintaining that a vast difference exists between the Islamic State and other ideological groups. More specifically, I believe the morphologic approach provides a more precise account of the impact of IS ideology in the social media context than previous approaches. Users of social media do not usually express openly support for groups, persons, or worldviews, but they agree or disagree with certain ideological assumptions. Furthermore, the morphologic approach offers a way to deal with the issue of the Social Media platform ban on IS-related contents. Despite it being unwise for a user to proclaim his/her sympathy for IS, given the personal risk involved and the censorship of the platforms, it is still possible to express support for a specific assumption which is part of IS ideology. Besides, the morphologic approach provides a compelling picture of the reactions of Arab public opinion on events that involved IS. For example, Islamists often agree with IS that there is a certain degree of hostility towards Islam from its enemies, but they clearly argue against the claim or the Caliphate to defend Muslims. To focus exclusively on the degree of support for IS would overlook interesting findings, as users might be hostile towards the Islamic state, but still share some of its ideological claims. Finally, an ideology-based discourse approach allows to identify which assumptions are the most popular in IS discourse, to what extent other users share them, and the reasons they provide for agreeing or disagreeing.

0.3. Research aims and questions

Drawing from the approach presented in the previous section, this dissertation aims to examine the discussion about IS and its ideology in the Arabic-speaking Twitter community. The main goals are to establish how popular IS and its ideology were among the Arabic-speaking Twitter-sphere and to analyse the determinants of IS ideology and the support for the same in the sectarian discourse regarding Iran and its allies.

The main research question that this dissertation seeks to answer is the following:

11 al-Nahḍa is a Tunisian formation which is inspired by Islamic values but argues for a secular and democratic constitution. The party has ruled, in some period, together with some members of secular-oriented formations and members of the state and establishment of associations in the aftermath of the Tunisian revolution of 2011.

'*How did the Arabic-speaking Twitter-sphere respond to IS and its ideology in the period from its peak until its defeat?'*

To answer this broad question, I focused on three chapters which look at some specific aspect of IS ideology. Each of these chapters aims at answering a specific question, namely:

Chapter one: *How popular have IS and its ideology been among the Arabic-speaking Twitter-sphere? What are the characteristics of the discourse for support and hostility?*

Chapter two: *How did the tested determinants influence the support for the Islamic State in the Arabic-speaking Twitter-sphere?*

Chapter three: *How did the anti-Shīʿa sectarian discourse influence support for IS in the Arabic-speaking Twitter-sphere?*

To explain the relevance of studying these different questions, it is important to first set out the main tenets of IS ideology and what the Arabic-speaking Twitter-sphere is. These two topics will be analysed in further detail in the next two sections.

0.4. The main tenets of IS ideology

The previous part discussed the centrality of ideology in the proposed study. Drawing from the before-mentioned theoretical approach, the following part aims at defining the main tenets of the Islamic State ideology, which I define with the term '*Jihadism*'. To understand what Jihadism is and which elements characterise it, I drew from two preliminary observations. The first is that the Islamic State's ideology is multifaceted and cannot be traced to one individual, movement, or period'. However, it is possible to identify the ideological 'godfathers' of IS, which Hassan (2016, p. 26) groups as follows: 'the Islamic State was drafted by Sayyid Qutb, taught by Abdullah Azzam, globalized by Osama bin Laden, transferred to reality by Abu Musab al-Zarqawi, and implemented by al-Baghdadis: Abu Omar and Abu Bakr' The second is that Jihadism is not exclusive to IS, but is also shared by similar groups such as Qāʿida and it shares some elements with other ideologies. More specifically, the term has emerged in the Western debate since the 9/11 attacks in 2001 (Kramer, 2003), and it draws from the much-older term 'jihād', a word which is properly defined as "struggle". Jihād is generally described as taking place at two levels: the inner (*or greater*) and the outer (*or lesser*). The inner jihād refers to the struggle which every single Muslim should engage in against evil inclinations, for example by engaging in charitable activities (Aslan, 2015, p. 116; Fiorani Piacentini, 2003, p. 217). The outer (or lesser) jihād is the struggle against enemies.

Taking into consideration the previous observations, I broadly define Jihadism as an ideology that emerged in the '70s and the '80s, and which sees violent struggle as necessary to eradicate obstacles to the restoration of God's rule on Earth and defence of the Muslim community against its enemies. Furthermore, I claim that one

could identify several organisations which adhere to the ideology of Jihadism. To identify the main tenets of Jihadism in the IS form, I look at IS propaganda material (*e.g. Dabiq*[12]) and the existing literature on the genealogy of this ideology. Drawing from the notion of 'building blocks', as suggested by Freeden's morphologic approach, I have identified four building-blocks of IS ideology, namely:

1. Enemies are hostile towards Islam and the Sunnī community
2. The fight between the Sunnīs and their enemies is of a religious nature
3. Jihād is an individual duty for all Muslims
4. The Caliphate represents the only example of rightful Islamic State

Broadly speaking, IS might share the first two building blocks with other ideologies and political organisations, as will be discussed in detail in the next part. The third one is not shared with other ideologies, as it defines Jihadism (Roy 2004), but it is shared with other organisations (*e.g. al-Qāʿida*). The fourth one is exclusive to IS.

The first building block of IS ideology is that *Enemies are hostile towards Islam and the Sunnīs*. IS claims that the Islamic community consists of one group since borders and ethnicities do not matter. IS draws from the current political context to argue that Western Powers, Israel, Iran and its proxies and even some Arab regimes, are allied in attacking Islam and Muslims (Dabiq 3, 2016). For example, the alleged Caliphate presents its effort to educate children to its ideology by stating that 'the Islamic State has taken it upon itself to fulfil the Ummah's duty towards this generation in preparing it to face the Crusaders and their allies in defence of Islam and to raise high the word of Allah in every land' (Dabiq 8, 2015). Furthermore, IS illustrates the reasons for the hostility of the enemies of the Ummah, by referring both to religious and political motivations. On the one hand, IS argues that the current war against the Caliphate is mostly motivated by economic interests, such as acquiring the control of the oil fields (Dabiq 6, 2015), on the other, they refer to those who are waging war against IS not just as the enemy of the Islamic State, but of the whole of Islam (Dabiq 9, 2015a). It follows that the current conflict against IS is not framed as an aggression against their organisation, but as the latest episode in the ongoing aggression against Islam and the Sunnī community (Celso, 2018, p. 43-44).

Other ideological movements also have the idea of an Islamic community and argue that there is hostility towards Muslims and Islam. However, they mostly refer to specific groups or states by linking this hostility to political, economic or ideological reasons. For example, some Islamist[13] discourses often rely on 'the sense of grievance that is evoked in relation to the suffering of Muslims around the world, directly due to the policies

12 Dabiq is the official magazine of the Islamic State. The publication often provides the religious and political motivation of the Islamic State in English.

13 In this context, I utilised the term 'Islamism' as opposed to Jihadism. I defined Islamism as a transnational ideological group that a Muslim majority society should be based on Islamic value, but it maintains electoral competition in a multiparty system and it does not believe in violent Jihād as an individual duty for all Muslims. I defined jihadism as a transnational movement which believes in violent jihād as a means to obtain its political gains. I will discuss the concept in further detail in the next pages.

of Western governments or indirectly due to Muslim rulers who they support' (Mahood and Rane, 2016, p. 18). A similar worldview can often be found also in the Salafi paradigm. Salafism is historically characterised by a rejection of the Shīʿa as a legitimate Islamic community (Steinberg, 2001). Besides this, some fringes of the Salafi discourse have described Iran and its so-called Shīʿa proxies *(e.g. Iraq, Syria, Houthi*) as hostile towards the Sunnī community. In the Saudi and other Gulf state context, a very different discourse is implemented towards the West in general and the US in particular, thanks to the long-standing alliance between Riyadh and Washington. Within this framework, the Kingdom foreign policy has often been depicted as a response to the Iranian aggression in order to defend fellow Sunnī Muslims (al Rasheed, 2011).

Support for the second building block, which states that *the fight between the Sunnīs and their enemies is of a religious nature*, is more limited. Those who share this idea believe that there is not just a politically motivated hostility of a state or a group against Islam/ all Muslims or a specific Sunnī community to gain natural resources or increasing political influence, but that they frame current events in a context of counterposition between Islam and its religious enemies. In their view, the hostility of states and political groups against the Sunnī community is not contingent to current events, but it links to a historically- and ideologically-based antagonism. In the analysed context, Shīʿī or Infidels will always be enemies, regardless of circumstances, and thus no peace is possible with them. To better understand this worldview, it is useful to refer to Schmitt's distinction between 'conventional' and 'absolute enemy'(2007): the conventional enemy is' respected and not despised or condemned morally where peace is possible as an outcome'; the absolute enemy is described by Schmitt as 'a form of enmity that loses all containments of time and space' (De Ruiter, 2012, p. 54-55). A similar concept can also be found in Juergensmeyer's concept of 'Cosmic war' (2016), where the author argues that to attribute a metaphysic characteristic to the enemy puts war beyond space and time constraints. War is no longer just a political event, but rather 'a cosmic battlefield where forces for Good are called to fight some unspeakable Evil' (2016, p. 2).

In the IS view, the war against Islam started in the initial phase of the Muslim era, and it is still ongoing. The IS dualistic division of the world between 'Us' and 'Them' can be constantly found in its material, where they argue that 'the world has been divided into two camps (…) the camp of the Muslims and the mujahidin[14] everywhere, and the camp of the Jews, the crusaders, their allies. IS describes it as a total war on Islam, which embraces the military, cultural and economic fields. Other Jihadist groups also share this concept, in particular, al-Qāʿida (Wiktorowicz, 2004) that utilises the images of Muslim civilians' deaths around the world to prove that they are targeted everywhere because of religious reasons. To a lesser extent, also the Kingdom of Saudi Arabia considers protecting the Sunnī community within and outside its borders a religious duty, referring to its leading role in the Muslim community as custodian of the two sacred mosques[15]. This concept relies on a

14 The term Mujahidin literally means those who make jihād and it indicates all fighters who pursue a religiously-motivated war against the enemies of religion.

15 Custodian of the two sacred mosques refers to the role of Saudi Arabia as protector of the two mosques of Medina and Mecca: the two holiest sites in the Muslim world. This expression is thus utilised to stress symbolically the role of Saudi Arabia as moral guide and protector of the broader religious community.

long-standing sectarian discourse that denounces the Shīʿī as heretics, 'to consider their government as a protector against Shīʿa conspiracies and foreign agents allegedly acting in the name of Iran, a rival regional power' (Al Rasheed, 2011, p. 515). In the most extreme strains of Salafism, hostility against Iran is thus framed also in a sectarian framework, as will be explained in the second chapter.

The third building block of IS ideology is the idea that *Jihād is an individual duty for all Muslims*. This idea started to emerge from the concept of Sayyid Qutb, which first theorised the universal *Jihād*. He did so by re-actualising the concept of *takfīr,* which is the idea that a Muslim can declare another Muslim, or any individual, as a non-believer (De Poli, 2017, p. 106). Once someone is defined as outside the Islamic community, it follows that it is possible to declare Jihād against this person. In Qutb's view, this concept served to justify rebellion against unjust rulers, namely those who do not respect the Islamic law. He claimed it to be a religious duty for believers `to revolt against a Muslim state judged to be corrupted` and `to excommunicate (*takfīr*) the sovereign considered to be apostate` (Roy 1999, p. 35). This concept was later further developed by Abd al-Salaman al-Faraj in the late '70s, who defined *jihād* as 'an individual duty for every Muslim' (Gregg, 2010, p. 301) not only for those who live under an unjust ruler by extending this duty to the entire Islamic Umma. In the '80s Abdullah Azzām translated al-Faraj's call for the implementation of an Islamic State into a concrete project. Azzām celebrated violent *jihād*, contending that 'the life of the Muslim ummah is solely dependent on the ink of its scholars and the blood of its martyrs' (Cook, 2007, p. 159). Differently to Qutb and al-Faraj (Bergersen, 2008), Azzām attributed to *jihād* a concrete outcome, claiming it to be a duty for all Muslims to fight in Afghanistan (and Palestine) against infidels at that given time. Furthermore, he justified his claim by pointing out that infidels were threatening or occupying Muslim lands, which he defined as all territories belonging to a Muslim dynasty at a certain time of history. He thus separated the call for *jihād* from achievable objectives and time-limited urgencies, virtually making its fulfilment an a-historical duty for all Muslims. It follows that al-Qāʿida defines *jihād* not 'just as a tactic or strategy', but 'as a theological imperative, binding on all Muslims' (Gregg, 2010, p. 300). As stated by Azzām himself:

'*Jihād must not be abandoned until Allah alone is worshipped. Jihād continues until Allah's Word is raised high. Jihād until all the oppressed peoples are freed. Jihād to protect our dignity and restore our occupied lands. Jihād is the way of everlasting glory'* (Azzām in Sindima, 2017, p. 331).

The last building block of IS states that '*the Caliphate represents the only example of rightful Islamic State'.* In its discourse, the Islamic State 'employs Islamic symbolism to animate its fighters and to draw sympathy from Muslims outside of its orbit' (Weiss and Hassan, 2014, p. 198). IS argues that all Muslims must join the jihād of the Caliphate, as it represents the only legitimate Islamic State ruled by the supreme Sunnī religious and political authority: the Caliph. Furthermore, IS argues that all Muslims who refuse the call for jihād cannot be considered true believers. An explanation can be found in the video '*What are you waiting for?'*, where IS broadcast the speech of a group of French Foreign fighters, who argue that also those who do not follow their

example accept to live under the rule of an unholy order (*Tāghūt*[16]). As correctly noted by Cole Bunzel (2015, p. 12), IS texts and speeches emphasise that 'all Muslims must associate exclusively with fellow "true" Muslims and dissociate from anyone not fitting this narrow definition'. This element distinguishes IS from other groups, including Qāʿida, which collaborated with other groups in the Syrian war against Assad. Collaboration with other groups is even strongly recommended by the highly influential scholar al-Maqdisī[17] (Wagemakers, 2012, p. 108), who had a strong influence on the first Jihadist generation. Unlike other Jihadist groups, the Islamic State considers un-Islamic those who cooperate with infidels or refuse to join the Caliphate and fight against all of them, jihadists included (Maggiolini and Plebani, 2015). In other words, IS ideology states that it is not possible to believe in Islam without being an IS supporter. This element is also central to the mainstream critics of IS, as many Muslims argue that IS does not represent Islam and the proclamation of the Caliphate does not fulfil any religious requirements and is therefore invalid (al Yacoubi, 2016). IS also aims at demonstrating its function as a state by stating that it is working to provide services to citizens (Winter, 2015; 2017).

In conclusion, the previous analysis shows that some of the building blocks of IS are also shared by other groups while still profoundly differing from the alleged Caliphate. Broadly speaking, it can be inferred that many Sunnī Islamists and Wahabis could potentially agree with some ideas derived from two of the building blocks of IS, while Jihadist groups, like al-Qāʿida, also agree on the third. Other groups (*e.g. nationalists, liberals*) might also be hostile towards a group or a state (*e.g. Iran*) and argue that it is attacking their or another nation, but would often implement a political, rather than religious, terminology. Within this context, the proposed building blocks can also be interpreted as steps which an individual might decide to climb when joining a terrorist organisation and acting against enemies. Broadly referring to the 'Staircase of Terrorism' theory of the social psychologist Fathali M. Mogaddam (2005), the first building block refers to a sense of perceived '*humiliation*'. The second refers to the idea of '*Absolute Enemy',* i.e. 'those who vehemently blame "others" (e.g., "America—the Great Satan") for their perceived problems climb the stairs to the second floor' (Mogaddam, 2015, p. 164). The third revolves around the idea of '*revenge*' with a parallel morality that justifies "the struggle" to achieve the "ideal" society by any means possible' (Mogaddam, 2005, p. 165). The last one refers to the idea of '*utopia*', which characterises and distinguishes the ideology of any organisation from that of others.

With regards to the dissertation, the proposed approach translates into three types of codifications of the collected Tweets. The first refers to the support for/hostility towards the Islamic State and its main enemies (Iran and its allies). The second aims at analysing the support for/hostility towards the building block of IS ideology. The third will include some additional information on the pro-IS, anti-IS discourse. I aim to test whether a difference exists between the sentiment on IS and those on its building blocks, and to understand

16 *Tāghūt* denotes a focus of worship other than Allah. However, the term has been utilised in a political sense to define all the un-Islamic rulers, who are defined as tyrannical.

17 Abū Muḥammad al-Maqdisī is a highly influential Salafi scholar who has influenced the jihadist ideology.

the user's motivations in arguing that, for example, Shīʿī are enemies of Islam. This two-step approach is discussed in detail in the methodological part. Finally, in the second article, I look at some specific elements which might have had an influence on the degree of support for/hostility towards the Islamic State and its ideology. These are the daily interactions, single users per day, censorship, lagged positive, attacks and crimes against Sunnī targets; attacks and crimes against Shīʿa; attacks and crimes against non-Muslims; major military victories of IS; major military losses of IS. For the determinants 'attacks and crimes against Sunnī targets', 'attacks and crimes against Shīʿa', 'attacks and crimes against non-Muslims', 'major military victories of IS', and 'major military losses of IS', I tested each determinant in two different periods, the first included the day of the attack, while the second took into consideration the following day. The reason for adopting this approach is to better capture the temporality of the effect, as in most cases the reactions of users to a certain event have not been immediate but have emerged over a longer time period. In a nutshell, testing both days allows to better capture the effect of a certain event on the sentiment towards IS.

0.5. The context of IS discourse. The Arabic-speaking Twitter-sphere

The previous section considered the main tenets of IS ideology. Another concept that needs to be more closely analysed is the concept of the Arabic-speaking Twitter-sphere. It is important to consider this term because its meaning might not be self-evident, and its existence contested. I defined the Arabic-speaking Twitter-sphere as characterised by a *common language*, a *shared history, mutual elements of identity* and a *wide penetration of Transnational media*. The *common language* is obviously Arabic. Together with all dialectal variances, this language is widely spoken and understood by at least 406 million people (World Bank, 2017), mostly living between the Atlantic coast of North Africa and the Persian Gulf. Although dialects are common across the region, most users can understand others in their neighbouring Arab countries, with some exceptions[18]. Furthermore, an Arab can always opt for Modern Standard Arabic (MSA) to communicate with others. MSA is currently one of the official languages in all Arab States[19], if not the only official language. MSA is taught in all Arab schools, and it is the prevalent language in politics and the news industry, and, therefore, widely understood. (Mellor, 2013, p. 13). Language is not the only element which bounds Arabs together. As correctly pointed out by Hopkins and Ibrahim (2003, p. 4) 'culture and traditions are among the similarities connecting the Arab countries' because of their *shared history*. Most of the Arab states were part of the Umayyad and Abbasid Caliphate and later became subordinated to Ottoman and European colonial powers. Despite some

18 The Egyptian dialect is perhaps an exception to this general rule because it is the *lingua franca* of the industry of entertainment (music, movies) and is widely understood across the region. English has also emerged as a common language for communication between people from different Arab states, especially among the most educated individuals. French is widely used among those Arabs who live in the Maghreb region (Morocco, Algeria, Tunisia).

19 For the research we identified as 'Arab states' those countries belonging to the Arab League, namely: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen.

local dynasties maintaining their independence from empires in some periods, the existence of a transnational network of religious authorities and scholars, frequent trade exchanges, pilgrimages to Mecca and marriages between the local population and the Arabic-speaking ruling elite have created cultural and religious bounds beyond political borders. These elements of *shared history* have been utilised politically by the pan-Arab nationalistic movement, which has called for the unification of all Arab states in the aftermath of colonial rule. Despite the failure of the project in the '70s, some prominent Arabists argue that the concept of an Arabic-speaking community has survived political troubles, as they claim that some special bonds still exist between Arabic-speaking people (Valbjorn, 2009, p. 144-148). For example, most Arabs follow the same religion, celebrate the same festivities and shared a common (mostly symbolic) origin from the areas of Mecca and Medina (*al-Ḥijāz*). The existence of *common elements of identity* helps ordinary users in engaging with current events, interpreting them through their ideological framework. Furthermore, the existence of *common elements of identity* contributes to users' identification with political groups in other countries, as most of the movements in the contemporary Arab world have a transnational dimension (*e.g. Muslim brotherhood, Pan-Arabism, Jihadism*).

Some authors (Telhami, 1999; Lynch, 2006) have utilised the term '*new-Arabism'* for describing the fundamental role of the media in forging the contemporary Arabic-speaking community. The famous theory of Anderson on Imagined Communities (2016) provides the theoretical framework for understanding the account. An *imagined community* is an *imagined group*, given that 'the members (…) will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion' (Anderson, 2016, p. 6). It is a *community* because individuals 'conceived it as a deep, horizontal, comradeship' (Anderson, 2016, p. 7). Drawing from Anderson's framework, New-Arabism argues that, 'differently to the old Pan-Arab nationalism which aims at political unification of the Arab community, the current form of Arabism connects to a supra-national sense of political and cultural identity' (Phillips, 2013, p. 29). In a nutshell, the new Arabic-speaking community is an imagined group of individuals who are bound together by transnational media. In Pintak's words, it is 'an "imagined" community perceived, in large measure, through the camera lens and pen of the Arab journalist' (Pintak, 2009, p. 192) and, I argue, social media users.

A Transnational media community has gradually emerged thanks to the creation of pan-Arab radios[20] (1950), a prolific entertainment industry (1950-1960's), pan-Arab newspapers (1950-1970's), satellite televisions (1990's) and social media (2010's). For many Arabs, it is common to learn about current regional events by reading pan-Arab newspapers like al-Quds al-Arabi, watching Tv stations, such as al-Jazeera and al-Arabiya, or discussing other Arab countries' events in the social media. An ordinary Arab citizen can now easily access hundreds of tv stations and publications on quasi-independent media driven by the market, which offers a plurality of interpretations on current events. To show the wide penetration of pan-Arab media, it is worth

20 The Egyptian radio service Voice of the Arab (*Sawt-al Arab)*, founded in 1953, not only became the most popular radio transmission in the Arab world, but lately has served as the main channel for Nasser's pan-Arab propaganda.

quoting a recent EUTESAT (2017) survey, which estimated that 94% of total home televisions have access to the satellite channels in the MENA Region[21]. The Arab Media Outlook (2016-2018) found that pan-Arab channels are dominant in the TV media environment, with a percentage of 89% in Saudi Arabia and 68% in Egypt of the total television consumption. Along with Pintak*'* (2009, p. 191), I argue that transnational (old and new) Arab media have created 'new, electronically enhanced "imagined" Arab *watan* (nation), which is bound together by many of the classic touchstones of nationalism theory: language, media, and *ethnie* (ethnic groups)' (Pintak, 2009, p. 192). The new media environment is thus fuelling the rise of a new common Arab consciousness in every way as salient as the "Imagined Communities" that Benedict Anderson described. The emergence of fora and social media has provided another dimension to the transnational discourse in the online Arabic-speaking community. The social media demarcates the space of my study, which focuses on how users have engaged with the actions, discourse and ideology of the Islamic State. Drawing from the previous analysis, I defined the *online Arabic-speaking community* as the entire range of interactions between users on the social media. It is a *transnational public sphere* in a Habermasian sense (1991), meaning that it is a virtual or imaginary community which does not necessarily exist in any identifiable space. It is *public* because it is 'made up of private people gathered together as a public and articulating the needs of society' (Habermas, 1991, p. 176). It is *transnational* because it is made of 'activities that cross state boundaries' (Phillips 2013, p. 37), as social media enable every user to discuss political issues which do not pertain exclusively to their home-country with other users from all around the world. In my dissertation, the *transnational public sphere* refers solely to the Arabic-speaking community, and it is the product of the interactions of Arabic-speaking users on Twitter who discuss the Islamic State. I, therefore, defined it as the *Arabic-speaking Twitter-sphere about IS*, which is the object of my study.

0.6. Studying ideology through social media

In the previous two sections, I discussed the subject (*IS ideology*) and the object (*Arabic-speaking Twitter-sphere about IS*) of the dissertation. In this part, I shall focus on social media analysis to answer my research questions. An important advantage of this methodology is that it allows researchers to study contents spontaneously generated by users. Online users' interactions are particularly relevant in analysing controversial issues because users express their opinion in a relatively free environment. In the online platforms, users can express their opinions anonymously, which reduces the effects of social desirability bias[22] in debating controversial issues and agents, such as IS (Fisher, 1993; DiGrazia and al., 2013). In a nutshell, social media provides 'unfiltered' political opinions, which are generally difficult to detect in polling data (Nagler and Tucker, 2015). This advantage can be especially relevant in autocracies or conflict areas, such as

21 The data refers to the MENA region. They also include non-Arab states (Turkey and Iran). It is important to stress that data on the penetration of the satellite devices in the Arab world are not independently verified, because of a lack of other reliable surveys:

22 Social desirability bias refers to the tendency of respondents to answer questions in a manner that is seen favourably by others. In the case of IS, being widely considered a terrorist group, this element seems to be particularly relevant.

in the Arab context, where it would be difficult or impossible to gather real-time data in such situations. Furthermore, social media are usually utilised by activists and political leaders to share their narrative outside core-support groups (Tufekci and Wilson, 2012). Social media facilitate the exposure to diverse political information via weak ties, which is how the uninvolved find out about the state of the art of the online political debate (Zuniga, Jung, and Valenzuela, 2012). Besides, studies show that the social media facilitates people's inadvertent exposure to political difference, even if they are unlikely to seek out such political difference on their own (Brundidge, 2010; Sunstein, 2009). Vaccari and Valerani (2016) claim that an increase in the exposure of different opinions reduces the gap in online engagement between citizens with high and low interest in politics, potentially broadening the range of voices that make themselves heard. This element is particularly relevant when analysing the difference in users' opinions between periods of low and high user engagement on a specific topic. Users who enter in conversation when there are fewer interactions on a certain topic are likely to be members of a limited core of users who are highly interested in the issue, while those who engage in the online conversation when there are higher interactions on a specific topic better reflect the wider online public opinion. This is particularly relevant when looking at opinions related to major events, like terrorist attacks, when the users who do not normally comment on IS get involved in the conversation. Users who comment on a certain issue only in limited periods are defined as *peripheral participants*, and they mostly represent users surrounding the small epicentre of those who are deeply politically engaged. Their engagement is essential in determining the success or failure of political discourse or ideology (Barberà and al., 2015). Finally, social media analysis can be used to study the relation between online and offline behaviours. For example, there are several studies on online activities and voting behaviours (Tumasjan and al., 2010; Ceron and al., 2014) to predict the results of elections. A similar methodology can be used to determine whether there is a relation between pro-IS activities and terrorist attacks. This study has been already successfully implemented by Ceron, Curini and Iacus (2018), who found a relation between pro-IS sentiment and terrorist activities in the period from July 2014 to January 2015 by analysing geo-localised tweets.

Within the realm of social media, the dissertation focuses exclusively on Twitter for three main reasons. The first refers to the characteristics of the social media platform from the point of view of those who utilise it. Twitter provides the best platform for political agents with a transnational agenda to spread its discourse. From terrorist groups to leading religious and political figures, from liberal activists to Shīʿa militias, this social medium is the main platform for transnational political discussion. As Winter (2015, p. 10) points out, Twitter has become an 'ideal place for violent extremists to operate' because this social medium is characterised by the rapidity with which contents can be disseminated, coupled with its capacity for extremely targeted messaging and the hashtag search functionality. Furthermore, Twitter is a public platform, where all tweets can potentially reach any users. It does not come as a surprise that IS elected Twitter as one of the main platforms to share its discourse. Despite the platform having banned pro-IS accounts since the beginning of 2015, Twitter has maintained its centrality in the discussion on IS within the Arabic-speaking community, thus making the analysis of data generated by users particularly interesting for studying public opinion dynamics. The second is that Twitter is particularly suited to research about public opinions over a long period of time.

This platform fits well with observing longitudinal trends in a time period. The temporal granularity of these data allows for a comparison of the sentiment in different days and phases. To rely on Twitter data over a period of time allows both to identify the time pattern of the sentiment in a period and to understand the impact of external events on the pro-IS sentiment on a specific day, as well as the composition of the test-set on the positive sentiment towards IS. The third is that Twitter fits well with my research approach because it allows conducting a comprehensive analysis of the transnational community interactions revolving around a single issue like IS'. As stated before, I conceptualised Twitter as a sphere in a Habermasian sense (1991) where different discourses compete in a public environment. In other words, IS discourse is one of the many discourses which can be found in the Arabic-speaking Twitter-sphere. Drawing from Van Dijk (1998; 2011) Maynard (2014) and Freeden (2013), I defined each discourse as characterised by common building blocks, which are shared by all those who belong to the same ideology and, in some cases, are also shared by competing ideologies.

It would be impossible to account for the plurality of transnational ideologies in the Arab world, so I just focused on those who broadly share some degree of support for the first two building blocks of IS while still strongly disagreeing with the organisation's actions. These are Salafism and Islamism.

For the purpose of the dissertation[23], I defined the following:(*Sunnī*) *Islamism* as the ideology which considers Islamic law to be the foundation of political order; within the broad family of movements, organisations, parties which share this building block, I argue that they typically agree on the idea that *'Enemies are hostile towards Islam and the Sunnī community'.* I defined *Salafism*[24] as the ideology which advocates the return to a pure understanding of Islam and advocates the role of religion in providing moral guidance for individuals. I contend that they typically share the idea that *'Enemies are hostile towards Islam and the Sunnī community'* and that *'the fight between the Sunnīs and its enemies is of a religious nature'.*

23 I am well aware that there are many differences within these two macro-groups, and that I am oversimplifying two wide and transnational ideological movements. For example, Islamists include the Muslim Brotherhood or Ennahda in Tunisia, while the Salafi stretches from the followers of al-Albānī to that of al-Maqdisī. However, for my approach it is enough that the building block ideas can be found in their relevant literature, which is what I have showed in the previous part, to maintain that these are part of their ideological tradition. To understand my point, let us make a counter-factual example. Would it be possible to argue that no Islamist believes that there is hostility towards Islam or to argue that no Salafi defines the alleged enemies of the Islamic Community with derogatory terms? If the answer is no, then I argue that these ideas are part of their ideology.

24 Along with Maher (2009), I do not disregard the idea that some elements of IS ideology draw from the Salafi tradition and I do not want to contest the category of Salafi jihadism to define these groups, but I do consider, along with Roy (2004, p. 254), the idea that Jihād is an individual and not a collective, duty for all Muslims to be the element which distinguished Salafism from jihadism. I therefore define those who share this idea as jihadists.

0.7. Relevance

The dissertation offers the first comprehensive study on the Twitter discourse on IS in Arabic in a three-year period. Furthermore, the dissertation offers a new perspective in the study on terrorism by analysing the support for some of the key assumptions of the organisation, as it focuses on the analysis of the discourse on IS and its ideology among *supporters, possible sympathisers* and *opposers/enemies*. I will specify better the distinctions between the three groups in the next chapter. Furthermore, the dissertation aims to contribute to the field of terrorism studies by implementing a methodology based on the analysis of social media. The proposed theoretical approach can be fruitfully applied to other studies on the appeal of a terrorist group and its ideology also for those researches which utilise different methodologies (*e.g. focus groups*) because it provides a framework to distinguish between *support, possible sympathisers* and *opposers/enemies* in the discourse. Finally, the study aims at filling the gap in studies on the discourse regarding the main enemies of IS within the Arabic-speaking Twitter-sphere, to understand whether they are considered as outgroups by both *possible sympathisers* and *opposers/enemies*. This is a virtually absent field of literature, so I believe that any contribution would be useful to understand better the best strategy to counter Jihadist groups. I aim at understanding the main topics for hostility from a terrorist group such as IS to understand the best strategy to counter such groups. I argue that this issue is central to the analysis, as a terrorist group can be more successfully defeated when its constituency recognises its fight against a terrorist group as legitimate (Cronin, 2009, p. 104).

The research also aims at contributing to the field of social media analysis. I maintain that the proposed methodology can be utilised for a large set of tweets on a single issue. An example is that of studies on terrorism; as it is central for terrorists to gain and maintain support from their constituency, they often utilise social media for spreading their discourse. In addition, this methodology seems particularly compelling for studies on any extremist group to detect support for elements of their narrative with a method which is particularly fitting for controversial issues like terrorism. Finally, the implemented methodology can be utilised for other transnational political topics. One example could be the European debate on migration, where some people might show support for a party, or some of its policies (*e.g. stricter rules for economic migrants*) while still not expressing support for the party because of its position on other issues.

0.8. Outline

The dissertation consists of three different chapters which draw from the same database of tweets on IS. The first two chapters utilise the entire set of Tweets on IS. The third chapter also includes a sub-set of tweets which contain a reference to Iran and its allies (*Third chapter*). In all parts, I employed the same methodology, based on the iSA algorithm. My overall aim was to assess how discussions on IS discourse have shaped the interactions in the Arab online community on crucial regional and global issues. In this respect, there is a clear

link between different parts of the dissertation, while each of the three sections focuses on various aspects of the discourse on IS. More in detail, I shall provide a brief introduction to the three chapters as follows:

Chapter One

The first chapter looks at the reactions of ordinary users to IS discourse. In other words, I analysed the impact of the Islamic State discourse within an online environment where the Caliphate 'brand' (Wiechert 2017) is competing with other players (*e.g., Islamists, Salafis*) for the Arabi Sunnī's hearts and minds. In this chapter, I studied how far the Islamic State succeeded/failed in spreading its discourse in the Arabic-speaking Twitter-sphere. I focused on the way in which the Arab online community discussed the Islamic State in negative/positive terms (*sentiment analysis*). In accounting for IS support and hostility, I also looked at the degree of support for IS building blocks (*opinion analysis*) in the analysed period. Furthermore, I examined the most recurrent topics in the pro-IS and anti-IS discourse.

Chapter Two

The second chapter analyses the determinants of IS Sentiment in the analysed period. The aim was to identify which factors have had an impact and those areas where they have not played any role in determining a difference in the analysed period when looking at the discourse about the Islamic State. For this purpose, I identified fourteen determinants, and I tested their impact on the Sentiment about the positive sentiment towards IS in the analysed period. The determinants are: lagged positive, number of daily interactions, number of single users per day, censorship, major attacks and crimes against Sunnī (same day), major attacks and crimes against Sunnī (following day), major attacks and crimes against Shīʿa (same day), major attacks and crimes against Shīʿa (following day), attacks and crimes against non-Muslim targets (same day), attacks and crimes against non-Muslim targets (following day), major military victories of IS (same day), major military victories of IS (following day), and major military losses of IS (same day), major military losses of IS (following day). To measure their impact, I carried a linear regression for the entire period and for the three phases of the Islamic State political development (peak, decline, defeat).

Chapter Three

The third chapter looks at the impact of the discourse about the main near enemy, which IS identifies with Iran and its 'Shīʿa allies' (*e.g. Assad's regime, Houthi, Hezbollah*) to the positive Sentiment towards IS. Preliminary research shows that sectarian discourse does not pertain exclusively to IS, but is also common among individuals and institutions, mostly from the Gulf, who consider Iran and its proxies to have engaged in a war against Sunnī Islam. Sectarianism discourse takes different shapes, in some cases it expresses religious-based hostility, while in others it is used to criticise the Iranian regime and political elite. As in the first chapter, I utilised once again the iSA methodology to focus on a test-set of Tweets which contained anti-Shīʿa terms in the analysed period and evaluated how the Arabic-speaking Twitter-sphere reacted to certain key events. For the opinion analysis, I looked at building blocks of the sectarian discourse by analysing the extent to which users (dis)agreed on the main assumption of IS ideology when considering the discourse on IS and its allies.

Methodology and Coding Guide

The research is based on a sample of Tweets in Arabic about the Islamic State. All chapters relied on both a manually coded training set and a probabilistic estimation of the uncoded contents through the algorithm iSA. The following part provides an in-depth description of the research approach. In the first part, I illustrate the general characteristics of the methodology. In the second part, I provide an overview of the categories and sub-categories for the training set, explaining the criteria I used for coding each content and offering some examples of tweets. The third part discusses the main reasons for utilising iSA compared to other available methodologies.

0.9. Overview of the methodology

The dissertation aims at providing a *sentiment analysis* and an *opinion analysis* on the IS and its ideological building blocks in the Arabic-speaking Twitter community. Sentiment analysis is 'the field of study that aims to extract (…) sentiments from natural language text using computational methods' (Liu, 2012, p. xi). It refers to the general connotation of a written text toward a specific topic, which is categorised as *negative*, *neutral*, or *positive*. Taking my research as an example, a tweet which expresses support for IS has a *positive* sentiment which, in this context, means that the user expresses a certain sympathy for IS. On the contrary, a tweet which condemns an IS-related terrorist attack has a *negative* sentiment. Finally, a tweet from which it is impossible to infer the opinion of a user towards IS, such as news, carries a '*neutral*' sentiment. Opinion analysis aims at classifying the reasons for expressing a specific viewpoint on a given topic. Returning to the previous example, one could express his/her support for IS because 'it is defending Muslims' (*first building block*), or because 'it is the best example of an Islamic State' (*fourth building block*), thus both tweets are *positive* for the sentiment analysis, but they are different regarding opinion analysis. However, another user could argue that 'Muslims are under attack from its enemies, but IS is not defending them', which does not express support of IS, but it shows that the user agrees to the assumptions that 'enemies are hostile towards Islam and the Muslim community' (*first building block*).

The proposed research draws from a database of 32 million and 700 thousand Tweets from October 2014 to September 2017, collected with the software '*Brandwatch*[25]', an official firehose company dealing with Twitter. I chose to rely on a single firehose because it helps to minimise the sampling bias in collecting data through one or more publicly available APIs (González-Bailón and al., 2014). These tweets comprise 33.3% of all Arabic language tweets that explicitly discussed IS through a set of keywords (*see appendix 1*). This methodology allows for an important advance for the thesis when compared to other studies, which is that it also includes those tweets which were published by users but shortly after were erased by the platform. I

25 Brandwatch is a tool which allows to collect Tweets. Available at:https://www.brandwatch.com/

filtered it from all contents which revolve around pornography[26]. This filtering reduced the sample to 28 million and 418 thousand tweets (33.3% of all tweets which discuss IS).

From this sample, I have extracted a random sample of 10% from the total Tweets for each of the months to derive the training set. There were two reasons why I adopted this approach: the first one is to make sure that the training set is representative for the entire period of the analysis. My test set is characterised by a wide diversity in terms of users' composition and number of tweets per day as my analysis stretches over a three-year time period with very different contents. I have some months with a few thousand tweets, especially at the end of the period, and others with over two million contents, mostly in the first months of the test set. Extracting the training set from a monthly-based set of tweets allowed me to collect a more evenly distributed collection of tweets than would have been the case if I were to extract the training set from the entire period. This latter strategy, which I, therefore, did not adopt, would likely have resulted in a training set characterised by an overrepresentation of the months with more contents. The approach I selected thus helps in capturing better emergent discourses at different times. A further reason is semantic change, which entails that the precise meaning of terms might change over time due to the context. In the following phase, I clean the dataset from words which do not refer to IS. From the newly formed dataset, I extract a training sample of 5,000 Tweets which I have coded with two Arabic native speaker translators. The manual coding has been complemented with an additional check by an external translator on 300 tweets. The intercoder reliability is 97% for the Sentiment towards IS, 95.32% for the first building block, and 93.48% for the second building block. The values are quite high compared to other studies. For example, Ceron et al. (2019) reports a 93% for the training set on the study of the positive sentiment towards IS. The reason for a higher percentage in my sample is probably related to my methodology of coding, which included two native speakers of Arabic checking my coding before sending it to a third external translator. I adopted this choice because I am not a native speaker and I have therefore included two coders to aid me in correctly sorting contents.

Each Tweet was coded according to the categories of support, hostility, opposition toward IS, Iran and its allies, the West and its allies (*sentiment analysis*) and support for/ opposition to the four building blocks of IS ideology (*opinion analysis*) and other supplementary categories which I will discuss in the next part. The data were then transformed into the data matrix (*pre-processing*) by eliminating any information on the order of words. This is particularly useful in Arabic, where the same term can be used in different contexts with very diverse meanings. The system works on 'bags of words', a group of terms which does not provide any information on the word order. The first phase is called tokenisation, and it consists in reducing 'texts to a matrix of L stems: words, unigrams, bigrams, etc.' (Ceron and al., 2016, p. 106). Stems entail a set of terms which could be made of one word (*unigram*), two words (*bigram*), three words (*trigram*) or a set of words

26 The reason for such a high number of tweets related to pornography is that I included in my sample all the words which include 'Caliph' (خليفة). This is the family name of a very famous pornstar (Mia Khalifa). To filter these contents, I excluded all tweets containing the name of the pornstar (ميا) and her complete name (ميا خليفة) and some words that clearly refer to pornography (نيك,كسي, زب, سكس).

which starts with the same letters *(e.g. dressing, dress, dress-room, dresses*). In the *tokenisation* phase, the conjunctions and unnecessary suffixes and prefixes are removed. Finally, some of the tweets are flagged as off-topic to exclude them from the training set. The processed text is now ready for the second phase, which is that of *stemming.* This process consists of reducing common words to a common stem: a series of letters which refers to the same semantic area. For example, the letters 'd-r-e-s-s' are shared for the word which refers to the verb ('to dress'), the object ('dress'), a specific action ('dress up' or 'dress the salad') which refers to the action of attributing an additional aesthetic-related quality to an object or a person. The third phase is *prediction*. The now trained or supervised statistical model (*machine learning)* is employed to classify the remaining unread documents on a daily base. Thanks to manual coding, the system learns to estimate the aggregated distribution of values for all the unread tweets by providing a probabilistic estimation of the sentiment and opinions for the entire analysed set of tweets.

When looking at the interpretation of the results, I divided the analysed period into three macro-phases which account for the situation on the ground for the Islamic State (*Peak*; *decline; defeat*). I partitioned my period into these three sets because they roughly correspond to the peak of IS power, its decline, and its path to defeat from a military point of view. I am introducing this historical tripartition in this part, but the main characteristics of IS political evolution will be discussed in further detail in the second chapter, which centres on the temporal aspect for the impact of a set of determinants on the historical evolution of the sentiment about IS in the Arabic-speaking Twitter-sphere. The first period started in October 2014 and ended in January 2015 and corresponds to the period when IS was still expanding. IS expanded in the North of Syria until it was finally blocked in the city Kobane/Ayn al-Arab (BBC, 2015a) by a Kurdish military force on the ground and the international coalition in the sky. From January 2015 to July 2015, the terrorist organisation was still able to make some limited territorial gains, such as the conquest of Tadmur/Palmyra in May 2015 (BBC, 2015b) but also suffered major defeats, including that of Tikrit in March-April 2015 (ABC News, 2015). The terrorist organisation was finally defeated in the city of Hasaka (TRT News, 2016) which was reclaimed by Kurdish forces at the end of July 2015. From August 2015 to the end of the dataset, IS suffered a set of major defeats (*e.g. Ramadi and Mosul*) (Ashley and Alkhshali, 2015; Chappel, 2017), and it finally lost its unofficial capital of Raqqa.

Regarding the main methodological differences for each chapter, there are some variations of the test set in terms of the period of analysis and included contents. With reference to the period of analysis, the first two chapters include all contents revolving around IS in the three years of the analysis (October 2014 - September 2017), while the test set of the third chapter includes only one year and a half (October 2014 - May 2016). The reason for this difference in the test set period is that the third chapter includes only a limited set of contents filtered according to a set of anti-Shīʿa words. This limits the tested contents, and there are, therefore, too few tweets to carry an accurate analysis in the last part of the year. When looking at the contents, the test set of the third chapter comprises only those tweets which include anti-Shīʿa words. Furthermore, the second chapter consists of a limited set of determinants which revolves around conflict-related events to find the trends in the

online responses regarding sentiment in the three years of the analysis. The exact specification of the determinants, and the criteria for filtering the test set by including exclusively anti-Shīʿa words, will be discussed in the following part.

0.10. Coding guide

The coding procedure consists of four phases. First, I coded each tweet according to the sentiment it expresses towards the Islamic State and the support for the assumptions of the four building blocks of IS ideology. Second, I identified those tweets that contain sectarian discourse to create the test set for the third chapter. Third, I included some additional coding on the training set of the dissertation using supplementary categories. The supplementary categories include a set of sub-categories for each building block and the most recurrent topics of the pro-IS and anti-IS discourse. Fourth, I added fourteen determinants to test the impact of external events on the positive sentiment towards IS. For all these contents, I counted re-tweet as single tweets and implicitly accepted that they always mean endorsing the included content.

First phase:

The first phase of the coding refers to the categories '*Sentiment towards IS'* and '*Support for the four building blocks of IS ideology'.* These categories are used to evaluate the degree and evolution of the positive sentiment towards IS and the support for its building blocks outside its core group. To estimate the percentage of positive sentiment towards IS, I coded each tweet according to three categories (*four including the off-topics*), and I estimated the daily value with iSA. To obtain an indication of the ideological continuity with the building blocks of IS ideology among those who oppose IS, I first identified all those tweets which express support for the four building blocks, and coded them as pro-IS or anti-IS. Second, I calculated the proportion between positive and negative tweets (the ratio between % of positive tweets over the sum of % of positive and negative tweets), therefore not counting for those coded as 'neutral' or 'off-topic'. I carried an additional check for the impact of neutral in appendix 2. Third, I estimated the percentage of pro-IS and anti-IS sentiments with iSA for the two test sets (*total test set, anti- Shīʿa test set*). Fourth, I have coded each tweet which expresses an idea that can be semantically linked to one of the building blocks (*e.g. the fight between the Sunnīs and their enemies is of a religious nature)* as pro-IS or anti-IS and according to thematic categories. Then I calculated the proportion between the anti-IS tweets in the building block and the total tweets when excluding those tweets that were considered off-topic. For example, in case iSA calculates that 50% of the tweets for the first building block are anti-IS and there are 500 tweets among 5,000 tweets coded in this category of the training set, I estimate the ideological continuity with this first building block to be 5%. It is worth stressing that this number is an estimation, which I use only to have an indication of the support for IS ideology outside IS supporters. I have carried out this calculation only for the first and second building blocks, as they include a significant percentage of anti-IS tweets, unlike the other two, as I will explain in the next part.

(% of Tweets coded in the second building block in the anti-IS group weighted for the proportion of Tweets coded in the category of Support for the first building block <38.76%> in the Training Set <158 tweets> divided for all tweets when excluding off-topic <4,543>).

Let me set out how I coded these tweets and then provide some examples. The category '*Sentiment towards the Islamic State'* refers to the overall support for/hostility to the alleged Caliphate in the tweets. I coded as '*positive*' those tweets which convey a positive outlook towards the Islamic State. I coded as '*neutral*' those tweets which do not clearly convey a positive or a negative outlook on the Islamic State or maintain an impartial stance. Finally, I categorised as '*negative*' all those contents which clearly express hostility for the terrorist group.

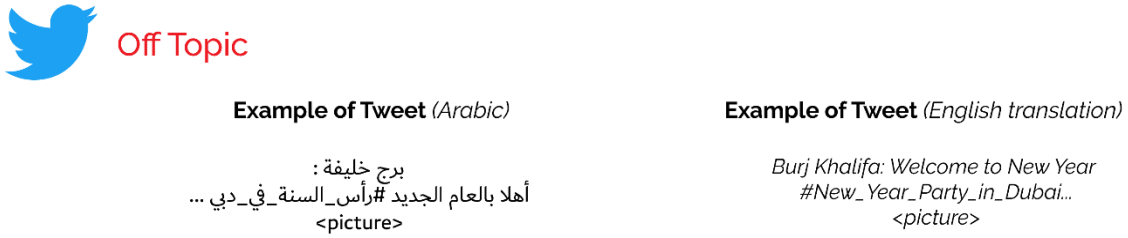
Figure 0.1.: Examples of coding for sentiment towards IS

Sentiment towards the Islamic State

	Example of Tweet *(Arabic)*	**Example of Tweet** *(English translation)*
Positive	#الدولة_الإسلامية_تتبنى_عملية_تكساس من يقيظه دفاع اثنين من المسلمين وتضحيتهم بأرواحهم من أجل الرسول عليه الصلاة والسلام فليراجع عقيدته	*#The_Islamic_State_claims_responsability_for_ the_Texas_operation.. Who is angry about the defense of two Muslims and their sacrifices with their lives for the Prophet (peace and blessings of Allah be upon him) should reconsider his faith.*
Neutral	الدولة الإسلامية تنشر السيرة الذاتية للمتحدث باسمها أبو محمد العدناني الشامي <link>	*The Islamic State publishes the biography of its spokesman, Abu Muhammad al-Adnani al-Shami, <link>*
Negative	هروب اعداد كبيره من ارهابيي داعش من الفلوجه بعد تضيق الخناق من قبل الجيش #عمليات_الفلوجه_مستمره #غرد_دعم_لقوتكم <picture>	*Large numbers of IS terrorists escaped from Fallujah after the army siege #Fallujah_operations_are_continuing #Tweet_to_support_your_strength <picture>*

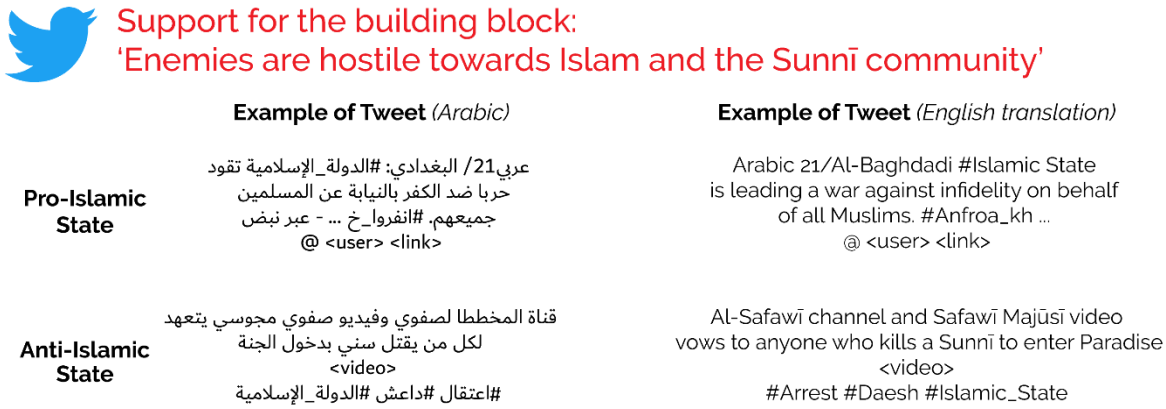
Finally, it is worth pointing out that I excluded from the coded tweets all contents which do not discuss IS in this phase, These tweets are included in the randomly-generated because some of my keywords carry more than one meaning (*see appendix 1*) For example, the term *Khalīfa (Caliph)* also includes also the family name of the ruling family of Bahrain al-Khalīfa (آلخليفة), the given name of Libyan warlord of Khalīfa Belqāsim Ḥaftar (خليفة بلقاسم حفتر) and the famous touristic attraction Burj Khalīfa (برج الخليفة). It follows that those tweets are included in the training set but coded in the category of the off-topic to exclude them from the analysis.

Figure 0.2.: Example of an off-topic tweet



The first building block consists of all those tweets which express the idea that: '*Enemies are hostile towards Islam and the Sunnīs'*. I coded the tweets which express the idea of hostility towards Islam and the Sunnīs by distinguishing between those which express both support for the idea behind the building block and IS[27], and those who support the idea behind the building block but who oppose the Islamic State as an organisation.

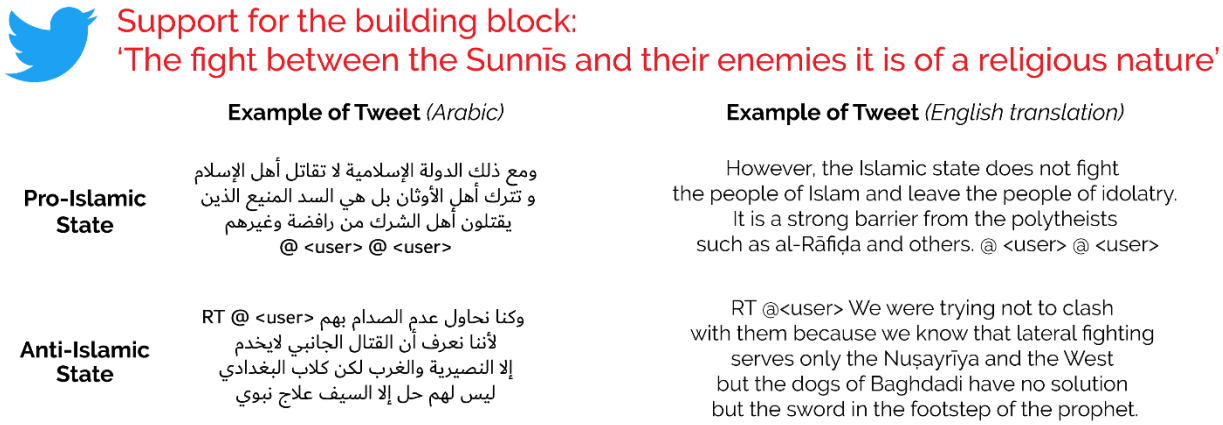
Figure 0.3.: Example of coding for the first building block



The second building block category includes all the tweets which express the idea that '*The fight between the Sunnīs and their enemies is of a religious nature'*. Drawing from the previous category, I have isolated the tweets which utilised sectarian-coloured terms in expressing the idea of hostility against Islam and the Sunnī. I made a distinction between those which define the enemies in a sectarian fashion and support IS and those which utilise a sectarian terminology to define the enemies of Islam but who oppose IS.

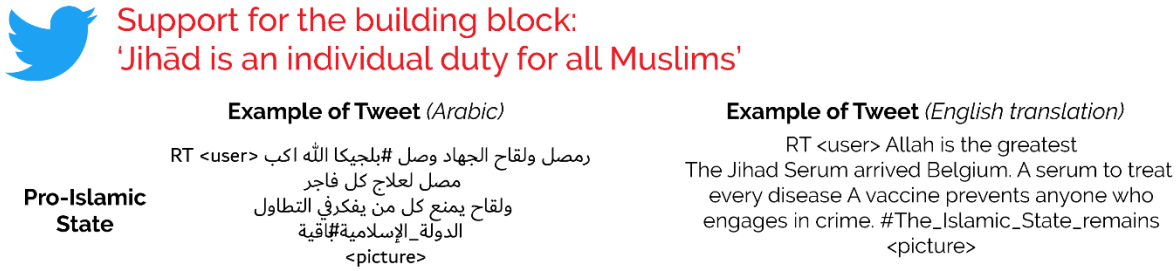
27 I included in this category also those tweets which express the idea of hostility towards the Islamic State. This is because IS has proclaimed the Caliphate, which is formally the defender and representative of all Muslims. In the eyes of IS supporters, therefore, to attack the Islamic State equals attacking all Muslims.

Figure 0.4.: Example of coding for the second building block



The third building block category consists of all those tweets which display the idea that '*Jihād is an individual duty for all Muslims'*. In my dissertation, this idea is always linked with support for IS[28]. This is because support for violent jihād is the core-idea which defines the Jihadist ideology and distinguishes it from other ideologies in the Arab world. The reasons are widely discussed in the introduction.

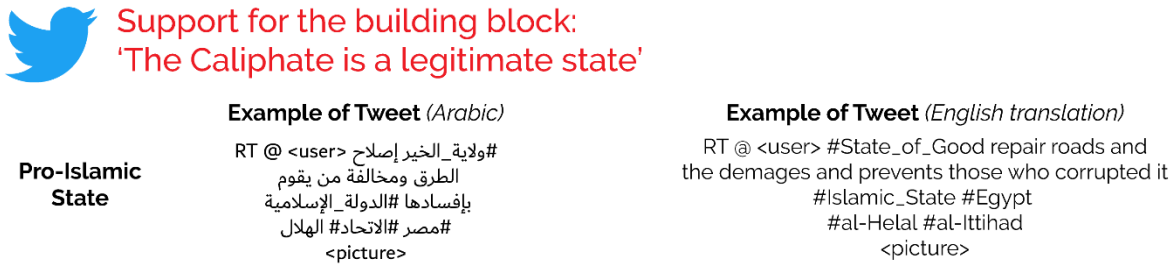
Figure 0.5.: Example of coding for the third building block



The fourth building block includes all those tweets which express the idea that *'the Caliphate is a legitimate state'*. These tweets consist of contents which revolve around the idea that the Islamic state should be considered a legitimate state because it has the monopoly of force and provides services to the population. In my thesis, this idea is always linked with support for IS, as no one which does not support the organisation would make such a claim in a test set that includes tweets about IS.

28 I have not included in this category a few tweets (3 out of 5000 in the training set) which express support for the idea that jihād is an individual duty for all Muslims and hostility towards the Islamic State. These are those tweets which support other jihadist organisations (*e.g. al-Qāʿida*). The reasons are widely discussed in the introduction, where I presented the theory of Faraj and Azzām. In a nutshell, all jihadists consider it an individual right of every Muslim to fight on behalf of the Islamic community when under attack. However, these tweets represent a sample which is too small to provide a reliable estimation of anti-IS tweets which express the idea that jihād is an individual duty for all Muslims.

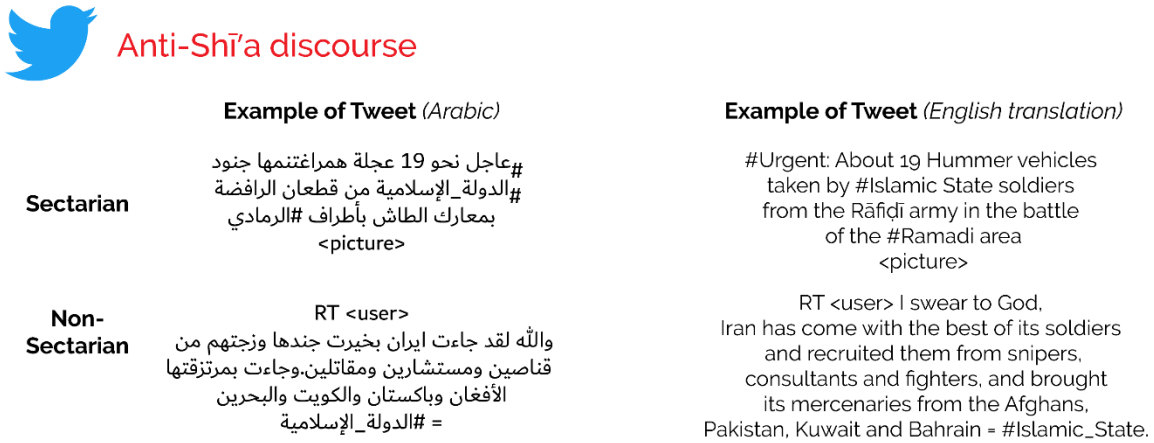
Figure 0.6.: Example of coding for the fourth building block



Second phase:

The second phase of the coding aims at identifying the sectarian discourse to create the test set utilised in the third chapter, which focuses on a set of hypotheses which test whether those users who utilise a sectarian discourse against Shīʿa also express support for the Islamic State. To verify it, I looked at 5,000 tweets in the training set, and I coded those contents which express hostility towards Iran, Assad, the Shīʿa militias or the Shīʿa as a group in the '*Anti-Shīʿa discourse*[29]*'* category. Second, I looked at the tweets within the category '*Anti-Shīʿa discourse*' to distinguish between the tweets which express hostility towards Iran, Assad, the Shīʿa militias or the Shīʿa as a group for political or religious reasons. Those that express a politically motivated hostility have been coded in the '*Non-sectarian anti-Shīʿa discourse'* category, those that express a religiously-motivated hostility have been coded in the *'Sectarian anti-Shīʿa discourse'* category.

Figure 0.7.: Example of coding for the anti-Shīʿa discourse



29 I utilised the category name '*Anti-Shīʿa discourse'* also in the case of a politically motivated hostility, which has nothing to do with the religion of the population or the political leaders being Shīʿa. This is because the focus of the coding is on the sectarian discourse, and therefore the terminology fits better the purpose of the category.

To make sure of identifying the sectarian tweets in my test set, I selected the first four terms among the most recurrent words in the sample, which indubitably express a sectarian anti- discourse. These are: *Rāfiḍī, Safawī, Majūsī,* and *Nuṣayrī* in both the singular and plural form[30]. To identify these terms, I relied on authors who had already identified a set of words which are commonly utilised to express an anti-Shīʿa stance (Hassan, 2016; Stern and Berger, 2015; Zelin and Smyth, 2014). I then looked at the words utilised by other authors to identify the sectarian anti-Shīʿa terms in their study on the IS Twitter discourse. I found that in the study of Ferrara and Badawy (2017, p. 4), the authors utilised three words: *Rāfiḍī, Safawī, Nuṣayrī*. I checked whether these terms were associated with the sectarian anti-Shīʿa discourse in the entire training set, and I discovered that I had previously coded 95% of the tweets which contained at least one of these four terms in the categories of the *'Sectarian anti-Shīʿa discourse'*. Besides, I also checked how many of the total tweets included in the *'anti-Shīʿa sectarian discourse'* category contained one of these four sectarian terms, and I found that 92.7% of the tweets in the category *'anti-Shīʿa sectarian discourse'* included at least one of these four sectarian terms in their text. I, therefore, argue that the presence of at least one of the four terms in a tweet provides a strong indication that this tweet can be classified as an anti-Shīʿa sectarian discourse. This is why I utilised these four terms to identify the tweets included in the test set of the third chapter, which checks the opinions on IS in the anti-Shīʿa sectarian discourse. Following this, I looked at the meaning of these terms, which clearly express the idea of belonging to the Sunnī community, and the idea that Shīʿī are outside it and are therefore utilised only by Sunnī. Lastly, I looked at the most common terms in my training set, and I found that there is another term included in the work of Zelin and Smyth (2014) which is often utilised in my sample. Given the meaning of the word and its frequency in my sample, I decided to include this word among the terms incorporated in my sub-sample of anti-Shīʿa tweets. In my training set, these words appear in 267 tweets (*291 times: 73 times Rafidi, 145 Safawī, 36 Nusayri, 34 Majūsī*). These four terms were present at least once in 98.52% of the 271 tweets, which I coded as carrying religious-based hostility[31] (*see figure* 8). Among those tweets, 45.4% carried an overall positive sentiment towards the Islamic state, 50.55% carried a negative stance on the terrorist group, while 4.05% did not clearly express an opinion towards the terrorist group and were coded as neutral. Finally, it is worth mentioning that 4.72% of the total tweets in the training set (5,000) contained at least one of these sectarian words. Finally, I verified that there is not a single tweet in the dataset in which one of these terms was used ironically by a Shīʿa to mock the *supporters* of the Islamic State. I can thus infer that these terms are always associated with a sectarian anti-Shīʿa discourse. A further confirmation that these terminologies are

30 One could argue that those tweets do not capture all the sectarian discourse, which can be expressed also without utilising these sectarian terms. For example, a tweet like '*All Shīʿa are evil'* would not be included in the test set. This is undoubtedly a valuable observation, but I valued accuracy as more important than quantity for the test set of the articles. In the case of the sectarian terms, I verified that they express a sectarian idea 95% of the time, while the word Shīʿa can also be connected to a positive approach towards the Shīʿa. I therefore adopted a conservative methodology, by focusing on the tweets which contain a sectarian connotation beyond any reasonable doubt.

31 Some tweets have more than one sectarian tweet in their contents, therefore the number of anti-Shīʿa terminology is higher (291) than the number of tweets which contain anti-Shīʿa sectarian terms (267).

widely utilised in the anti-Shīʿa discourses was provided by the official propaganda of IS. For example, this terrorist group utilised these four words 272 times in the 15 issues of *Dabiq*[32].

Figure 0.8.: The anti-Shīʿa discourse in the training set

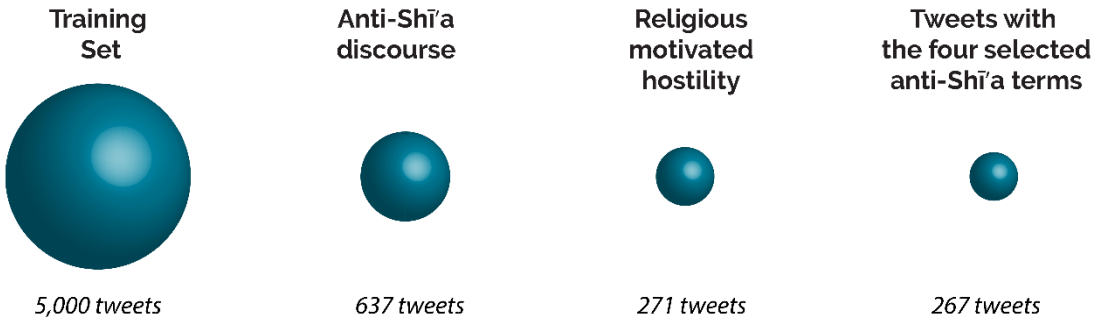
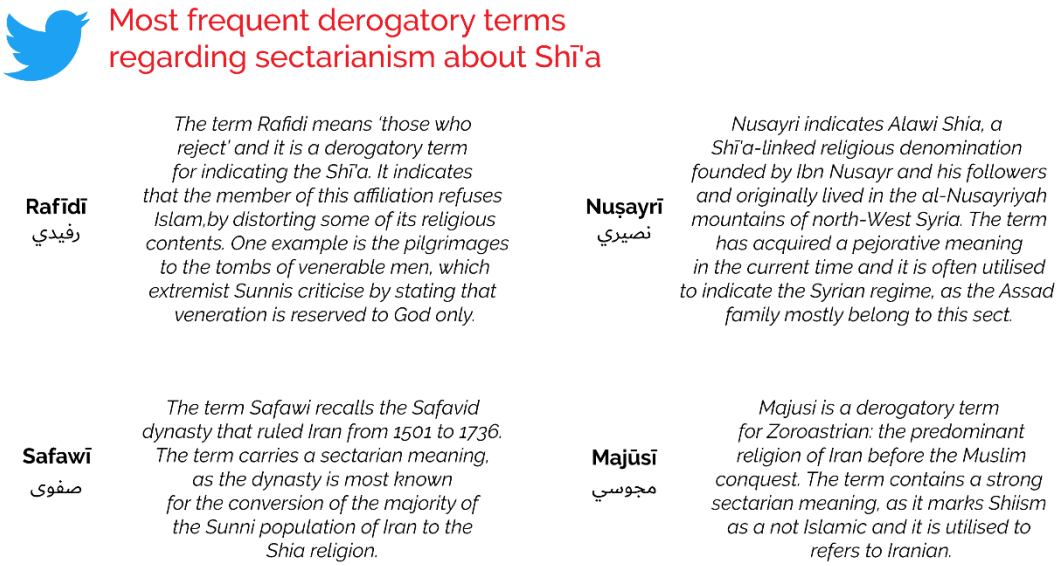


Figure 0.9.: Four tested anti-Shīʿa sectarian terms



Finally, I have carried a similar analysis for the anti-Western discourse to identify the religious-based and political-based hostility for additional information. These are some examples:

32 More in detail, there are 126 references to 'Rāfiḍi', 89 to 'Nuṣayrī', 52 to 'Safawī', and 5 'Majūsī'. For the count on the R software, I included also the plural forms. Other terms, like 'Hizbiyi' (18 references) are often used in referring to Hezbollah, a Lebanese Shīʿa group fighting IS. I did not include them to create my Test set of the chapter because they do not carry a sectarian meaning.

Figure 0.10.: Four tested anti-Western terms

Third phase

The third phase of the coding refers to some additional information which is not directly tested in the hypotheses but provides some interesting insight into the discourse about the Islamic State. The data relies exclusively on the training set of 5,000 tweets randomly extracted from the database. They consist both of sub-categories of the tweets coded in the building blocks and additional categories which specify the main topic of the tweet (*figure 0.11: Subcategories of tweets for topic analysis can be found on the next page.*)

The first sub-category refers to the first building block *'are hostile towards Islam and the Sunnī community'*. These are *'IS as Defensor of Muslims'* and *'Islam or Sunnī Muslims'*. The sub-category *'IS as Defensor of Islam/Muslims'* refers to those tweets which express the idea that the Caliphate[33] represents Islam and the Islamic State is under the attack from its enemies. It thus includes all those tweets which express support for IS and the idea of hostility from enemies because they recognise implicitly or explicitly the claim from IS as being a rightful Islamic Caliphate. The sub-category '*Islam or Sunnī Muslims'* express the idea that non-Muslim states, community or individuals are hostile towards Islamic religion and Sunnīs in general. It also includes IS among the enemies, which are defined as anti-Islamic, for example by utilising the term Khāriji[34] or Takfīri[35].

33 Historically the Caliphate is the supreme political and religious authority of the Islamic Community. The term derives from the Arabic root K- L- F (خ- ل - ف) which means 'to succeed, to take place of'. This institution was established by the Prophet after his death to rule the territory that was conquered during his lifetime.

34 Khāriji is a derogatory term utilised to refer to IS. It derives from the Arabic root K- R- G (خ- ر - ج). In the Islamic tradition, it refers to a group of soldiers who left the Ali Army: the group of fighters which contested the fourth Caliph ʿAlī ibn Abī Ṭālib. The term is often utilised to indicate groups like al-Qāʿida or IS to signal that they have exited Islam.

35 Takfīri is a term which often indicates the Islamic State. It derives from the Arabic root ' K – F - R' (ك ف ر), which refers to infidelity. The term is used by Muslims to accuse other Muslim individuals and groups of apostasy.

Figure 0.11.: Subcategories of tweets for topic analysis

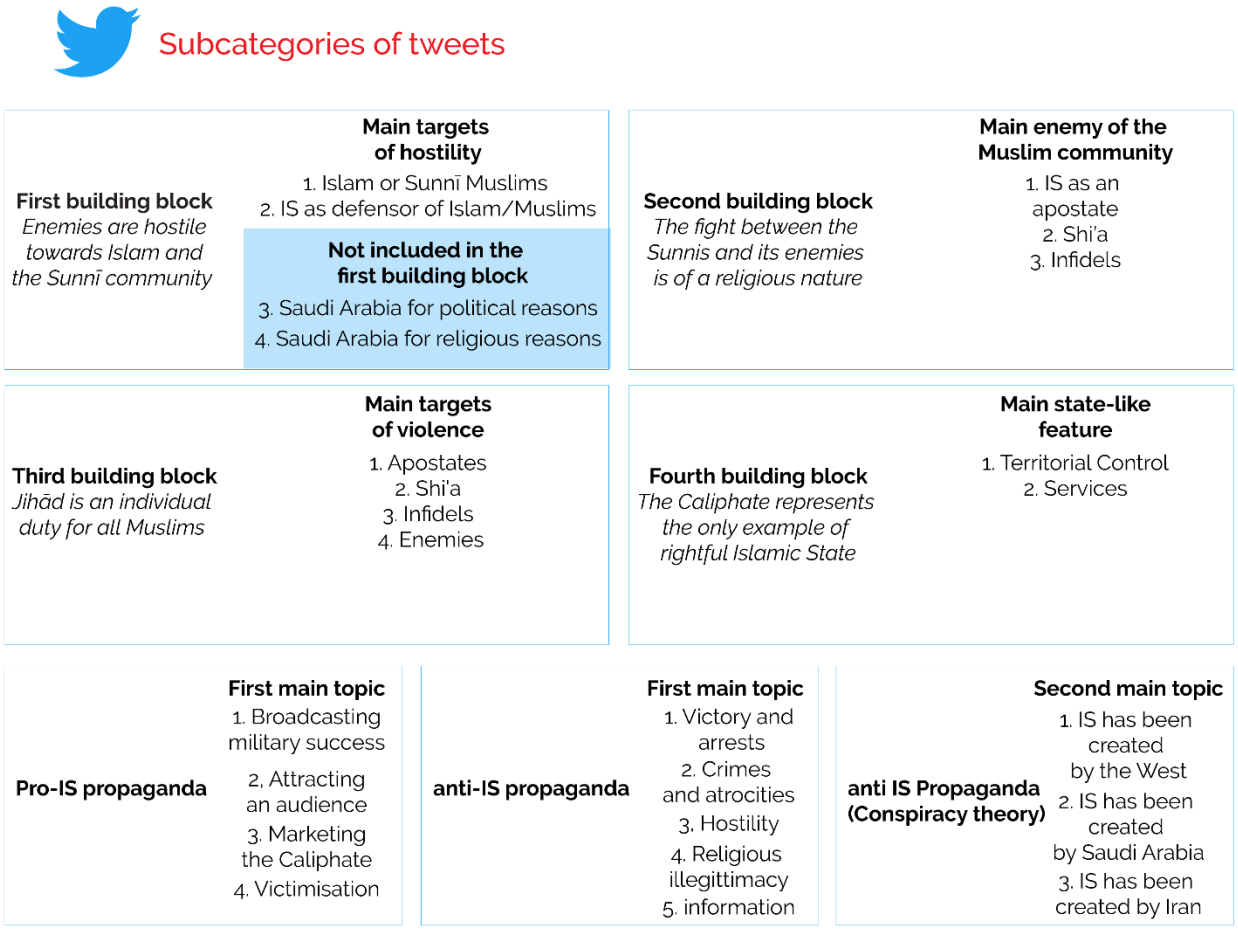
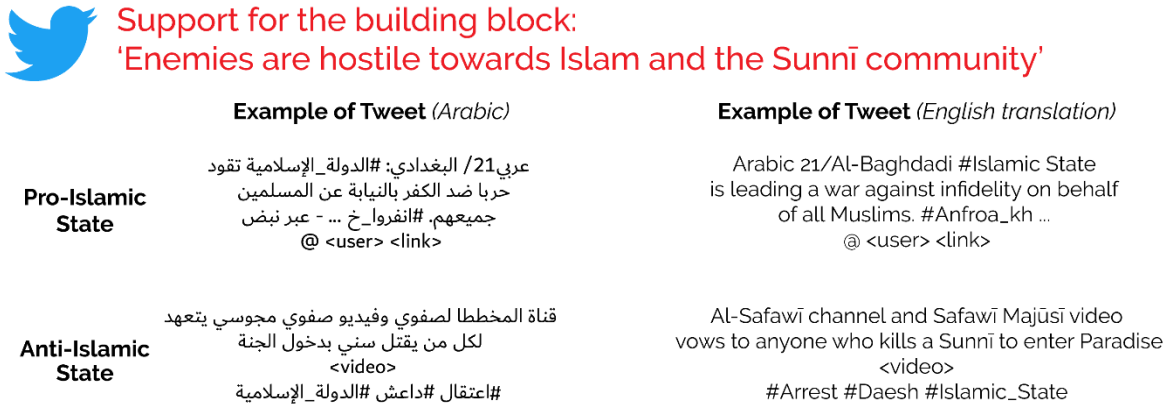


Figure 0.12.: Examples for the subcategories of tweets for topic analysis in the first building block

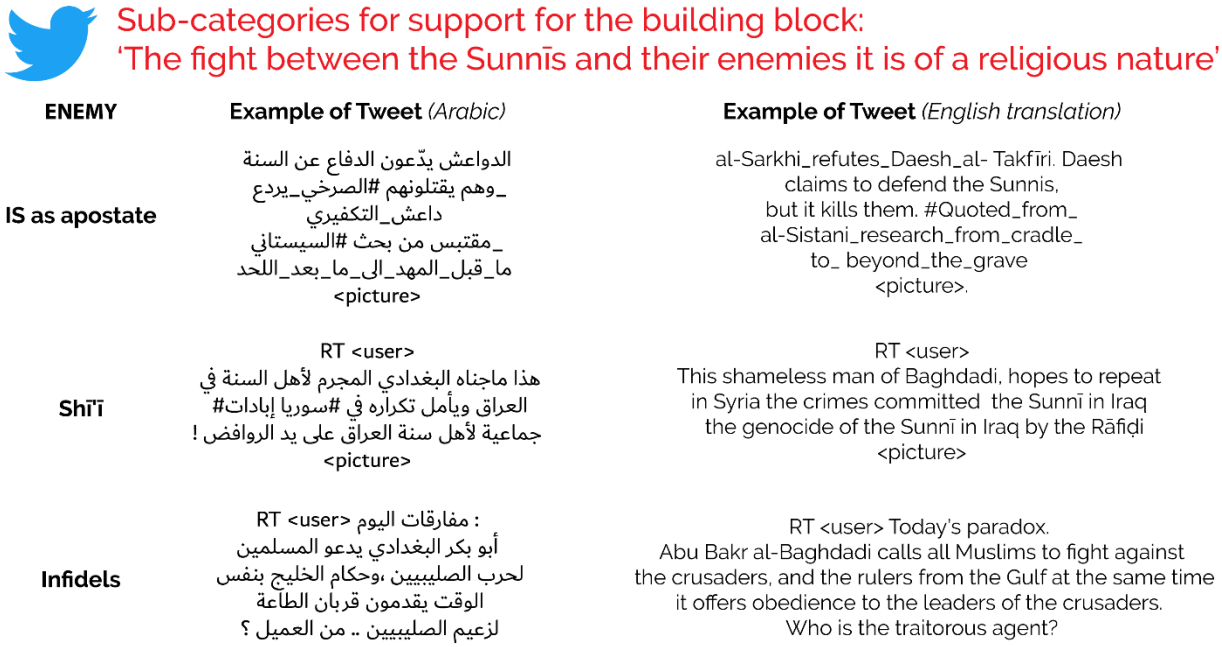


Within the same group of tweets, I coded those contents which expressed the idea that enemies are hostile towards Saudi Arabia. I clearly did not include these tweets among those which express the idea of hostility towards Islam and the Sunnīs, as Saudi Arabia does not claim to represent all Muslims, but I considered it important to include Saudi Arabia in the analysis. This country has a strong symbolic role in the Arab world as custodian of the two sacred mosques. I distinguished tweets which express the idea of hostility towards Saudi Arabia between those which expressed the idea of *'hostility towards Saudi Arabia in political terms'* and those which expressed the idea of *'hostility towards Saudi Arabia in religious terms'.*

Figure 0.13.: Examples for the subcategories for hostility towards Saudi Arabia

The second sub-categories refer to the second building block '*The fight between the Sunnīs and their enemies is of a religious nature'.* I coded in this category those contents which express the idea of hostility towards Islam and the Sunnīs and connotate the enemies by means of a religious-coloured terminology. The sub-categories are: '*IS as an apostate*', '*Shīʿa*', '*Infidels*'. The first 'sub-category '*IS as apostate'* includes all those tweets which express the idea that the Islamic State is fighting against the entire Sunnī community for religious reasons, by connotating the group with terms like *'Takfīri'* or *'Khāriji'*. The second sub-category refers to '*Shīʿa*', who are often labelled with derogatory terms expressing religious-based hostility. The sub-category '*Infidels*' similarly identifies the alleged enemies as the Western states and Israel.

Figure 0.14.: Examples for the subcategories of tweets for topic analysis in the second building block



The Third building block specifically refers to defining ideas of the Jihadist ideology, which characterises IS and other similar groups (e.g. *al-Qāʿida).* More precisely, the third building block is '*Jihād is an individual duty for all Muslims'* which is the element that distinguishes Jihadism from any other ideology. This links to the theory of Faraj and Azzām, which I discussed in the introduction. In a nutshell, these authors state that fighting to defend the Islamic community when under attack constitutes an individual right of every Muslim. The first sub-category is that of '*Apostates*[36]', which includes all tweets expressing support for or avenging IS attacks against other Sunnī people, army, or states. The second is that of '*Shīʿa*' which link to those attacks where the enemy belongs to this religious denomination. The third refers to '*Infidels*' which include those contents where the victims of violent jihād are Western or Israeli. The fourth is that of *'Enemies'* which include all those tweets which celebrate the military victory of the Islamic state, but they do not clearly define the target of violence.

36 The term 'Apostates' does not literally mean those who left religion in the jihadist narrative, but rather all these Muslims who do not conduct their life according to Islamic principles. The term does refer to those Sunnīs who fight against the Islamic state, such as the Kurds and the Arab regimes of the area, such as Egypt. The term will be further discussed in the next part of the article.

Figure 0.15.: Examples for the subcategories of tweets for topic analysis in the third building block

Sub-categories for support for the building block:
'Jihād is an individual duty for all Muslims'

TARGET	Example of Tweet *(Arabic)*	Example of Tweet *(English translation)*
Apostates	RT <user> قتلى المرتدين من الجيش المصري في سيناء تجاوز 40 قتيل واكثر من 50 جريح ملاحم_جنود_الخلافة_في_سيناء	RT <user> Deaths to the apostates from the Egyptian army in Sinai exceeded 40 deaths and 50 wounded #Epics_of_the_Caliphate_Soldiers_in_Sinai.
Shīī	RT <user> من كثر قتلا #الروافض ومصابيهم على الدولة_الإسلامية جرحى الرافضي يطردون من #مستشفى السماوة <video> <picture>	RT <user> Thanks to the large number of dead and wounded of the Rawāfiḍ in the Islamic State, the wounded Rawāfiḍ are expelled from Samawa Hospital. <video> <picture>
Infidels	لا تقل #داعش قل #الدولة_الإسلامية الله أكبر هجوم مسلح على مقر صحيفة شارلي إيبدو" في باريس	Do not say #Daesh say #Islamic State. The largest armed attack on the headquarters of the newspaper "Charlie Hebdo" in Paris.
Enemies	RT <user> "صور من معارك تحرير منطقة "الأخيضر #قرب مدينة سامراء. عاجل ولاية_صلاح_الدين #الدولة_الإسلامية# <picture>	RT <user> Photo of the battle for the liberation of the al-Akhaidar area near to the city of Samarra. #Willayat-Salah-al-Din #Islamic_state. <picture>

The fourth building block states that '*The Caliphate is a legitimate state'*. The two sub-categories refer to two of the main features of any state, which are to maintain *'Territorial control'* and to provide *'Services'*. The sub-category of *'Territorial control'* includes all those tweets which express the idea that the Islamic State has the monopoly of force in the territories under its control. The sub-category of '*Services*' includes all those contents which express the idea that the Islamic State is providing services to the population, such as school, hospital or aid for poor people.

Figure 0.16.: Examples for the subcategories of tweets for topic analysis in the fourth building block

Sub-categories for support for the building block:
'The Caliphate is a legitimate state''

STATE-LIKE FUNCTIONS	Example of Tweet *(Arabic)*	Example of Tweet *(English translation)*
Services	مقاتلو الدولة الإسلامية يسيطرون على قرية #تل_شعير <picture>	The Islamic State controls the village of #Tel_Shuhir <picture>
Territorial control	وكالة_أعماق #عاجل قوات #الدولة الإسلامية تسيطر على المصنع العراقي وقرية العبادي وأجزاء من منطقة الحمدانية في قضاء #أبو_غريب غربي #بغداد	#Agency_Amaq #Urgent The #Islamic_State forces seize Iraqi factory, Abadi village and parts of Hamdania area in #Abu_Ghraib district west of #Baghdad

Finally, the dissertation is complemented by a study of the recurrent themes in the pro-IS and anti-IS themes in the random set of Tweets. The pro-IS contents account for the main topics of the alleged Caliphate propaganda, which are '*Broadcasting military victories*', '*Attracting an audience'*, *'Marketing the Caliphate'*, and *'Victimisation'*. The sub-category of *'Broadcasting the Caliphate'* refers to all those tweets which express the idea that the Islamic State is powerful, and it is winning its war. The sub-category of *'Attracting an audience'* links to all the Tweets which express that a generic backing of the alleged Caliphate is popular and that it has a wide backing in the Arabic-speaking Twitter-sphere regarding the Islamic State. The sub-category of *'Marketing the Caliphate'* includes all contents which aim at providing information about the Islamic State or at sharing information on its activities to prove its capability in running a territory (*state-legitimacy*) and the conformity of its actions to the religious tradition as interpreted by IS. The sub-category of *'victimisation'* collects all tweets which express the idea that the Islamic State is under attack from a plurality of enemies.

Figure 0.17.: Examples for the subcategories of tweets for topic analysis in the pro-IS discourse

Similarly, some recurrent themes emerged in the anti-IS discourse. I grouped these tweets in the sub-category of '*Victory and Arrests'*, '*Crimes and atrocities'*, *'Hostility'*, *'Religious illegitimacy'*, and *'Information'*. The first sub-category is that of *'Victory'*, which refers to those tweets celebrating the military success against the Islamic State. The second sub-category is *'Crimes and atrocities'*, and it indicates the atrocities committed by

the alleged Caliphate against civilians. The third sub-category is that of those tweets which express '*Hostility*' towards the Islamic State. The fourth is *'Religious illegitimacy'*, referring to all those tweets which claimed that IS is contrary to Islam. Finally, the sub-category of *'Information'* refers to those tweets which provide state-specific opinions on the Islamic State, for example, those tweets which suggested that there is a secret agreement between IS and Iran, and even that Iran created the alleged Caliphate.

Figure 0.18.: Examples for the subcategories of tweets for topic analysis in the anti-IS discourse

In conclusion, the study accounts for the main conspiracy theory in the anti-Shīʿa discourse, which refers to the main conspiracy theory in the Arab world, where some users express the idea that the Islamic State has been created alternatively by *Iran*, the *West*, or *Saudi Arabia*. I coded in the sub-category *Iran* those tweets which expressed the idea that the Islamic republic is behind IS. Those tweets coded under the sub-category '*West*' expressed the idea that the Western states, mostly Israel and the United States, are the main sponsors of the alleged Caliphate. The tweets coded under the category of *'Saudi Arabia'* expressed the idea that the Islamic State was a product of, or has been/is supported by, this country.

Figure 0.19.: Examples for the subcategories of tweets for topic analysis regarding conspiracy theories

Sub-categories of the anti-IS discourse (conspiracy theories)

SPONSOR OF IS	Example of Tweet *(Arabic)*	Example of Tweet *(English translation)*
Western state	تكاتفنا_اقوي_من_الارهاب امبارح امريكا حذرت رعاياها في مصر من حادث ارهابي و عرفت منين امريكا عرفت من داعش لانها هي اللي عملت داعش	Our solidarity is stronger than terrorism Yesterday, America warned its citizens in Egypt of a terrorist incident, but how did America know about the incident? It knew from Daesh because America made Daesh.
Saudi Arabia	RT <user>: ??تقرير للأمم المتحدة : داعش الوهابي يستعبد 3500 شخص بالعراق #دولة_الخلافة #الدولة_الإسلامية <picture> #kamindoz	UN Report: Wahhabi Daesh enslaves 3,500 people in #Iraq #State_of_the_Caliphate #Islamic_State <picture> #kamindoz
Iran	سؤال: ما الفرق بين داعش والحشد الشعبي العراقي؟!. جواب: لا فرق. فكلاهما تنظيمان ارهابيان . صنعتهما ايران	Question: What is the difference Daesh and the Iraqi Popular Mobilization? Answer: There is no difference. They are both terrorist organisation created by Iran

Fourth phase

The last phase of the coding aims at identifying the Determinants for the support and hostility towards the Islamic State and its ideology (*independent variable*) for each of the 1,096 days of my sample. I identified fourteen determinants which might have had an impact on the support for/opposition to the Islamic State (*dependent Determinants*). These are: daily interactions; single users per day; lagged positive; censorship; attacks and crimes against Sunnī targets (*same day*); attacks and crimes against Sunnī targets (*following day*); attacks and crimes against Shīʿa targets (*same day*); attacks and crimes against Shīʿa targets (*following day*); attacks and crimes against non-Muslim targets (*same day*); attacks and crimes against non-Muslim targets (*following day*); major military victories of IS (*same day*); major military victories of IS (*following day*); major military losses of IS (*same day*); and major military losses of IS (*following day*). Three of them are coded as continuous Determinants (*daily interactions, single users per day, lagged positive*), while eleven are categorical Determinants (*censorship; attacks and crimes against Sunnī targets (same day); attacks and crimes against Sunnī targets (following day); attacks and crimes against Shīʿa targets (same day); attacks and crimes against Shīʿa targets (following day); attacks and crimes against non-Muslims targets (same day); attacks and crimes against non-Muslims targets (following day); major military victories of IS (same day); major military victories of IS (following day); major military losses of IS* (*same day*); and *major military losses of IS* (*following day*).

More precisely, the determinant of *'daily interactions'* is the total number of tweets per day. The determinant *'single users per day'* indicates the number of single accounts which have engaged in the discussion about the

Islamic State each day. The determinant *'censorship'* refers to the presence or absence of an effective ban of pro-IS accounts from the Platform Twitter. Despite Twitter not providing data on the ban of pro-IS account and the platform constantly closing accounts which violate its rules, I set my division point as the 1st of March 2015 for several reasons which I will explain in the following chapter. I also selected a set of terrorist operations and crimes carried out by the Islamic State[37], which caused the deaths of more than 20 victims or carried a high symbolic value[38] (*183 records*). I chose this threshold of the number of victims for reasons which will be discussed in detail in the chapter. To identify the major terrorist attacks and count for the number of the victims, I utilised the Global Terrorism Database of the University of Maryland and international news as sources. For the determinants which derive from attacks and crimes, I accounted for two differing timings to evaluate the effect: the same day and the following day, with some degree of flexibility when the attacks occurred in the evening for both cases[39]. Drawing from this temporal difference, I derived two determinants from the same event *(e.g. terrorist attack*): one on the same day and one on the following day. The two determinants '*attacks and crimes against Sunnī' targets* (*same day/following day*)*'* refer to all the attacks and crimes with more than 20 victims which mostly targeted Sunnīs (*95 records*) respectively for the event day and the following day[40]. The determinant '*attacks and crimes against Shīʿa targets (same day/following day)*' includes all the attacks and crimes with more than 20 victims, which mostly targeted Shīʿī (*50 records*) respectively for the event day and the following day. The determinant '*attacks and crimes non-Muslims targets'* (*same day/following day*) includes all attacks and crimes, which mainly targeted Non-Muslims (*38 records*) respectively for the event day and the following day. Finally, I included *'major military victories* (*same day/following day*)*'* and *'major military losses* (*same day/following day*)*'* of the Islamic State. Just as for attacks and crimes, I included two differing timings to evaluate the effect of the attacks: the same day and the following day, which allows for the creation of four different determinants. The first two determinants account for the terrorist group victories, namely IS conquering or losing cities with more than 20,000 people and the village of Dabiq, which carries a high symbolic value. For the information on the victories and defeats, I relied on international media. For the four determinants, I looked separately at the day of the event and the following day. Therefore, I accounted for the presence of the two determinants *'major military victories* (*same day/following day*)*'* respectively on the same day when the conquest was announced by the main international media and the following day. Similarly,

37 I included the operations of the Islamic State in Iraq and Syria (ISIS) and the Islamic State in Khorasan and the Islamic State of Sinai. Despite Boko Haram having pledged loyalty to the Islamic State, I excluded the operations carried out by this group because its objectives are mostly local.

38 I included in this group also two attacks and crimes which caused less than 20 victims, but which nevertheless received a wide coverage in the media. The first is the beheading of the Syrian archaeologist Khaled al-Assād; the second is the attack in a social centre in San Bernardino.

39 I accounted for the same day of the operation only with the exception of some attacks which occurred in the evening. In that case, I coded the following day. Similarly, I coded the following day for the determinants which look at the effect on the following day, with the exception of attacks in the evening.

40 I also included the beheading of the archaeologist Assad Khaled al-Assād in Tadmur/Palmyra which received wide media coverage.

I accounted for the presence of the determinants '*major military losses* (*same day/following day*)*'* respectively, when the defeat of IS was announced in the main international media and the following day.

0.11. Aims and scope of the adopted methodology

In discussing the reason for choosing the methodology described in the previous two parts, I draw from the observation of Grimmer and Stewart (2013, p. 269-272) that there is 'no globally best method for automated text analysis' but each method fits with a specific research design. In this respect, I first motivate the choice of choosing a machine-learning method with the broad data set of my thesis, which would be impossible to estimate exclusively with manual coding. In other words, machine learning provides a much-needed tool for amplifying the research scope in dealing with many data (Ceron and al., 2016). The reason for choosing specifically *iSA* is that it combines an automatic approach with manual coding. As correctly summarised by Gary King (2016), professor and director of Harvard University's Institute for Quantitative Social Science, this combination offers a reliable way to estimate proportion, as 'the best technology is human-empowered and computer-assisted' (Washington Post, 2016). With reference to my research, the combination of manual coding and automatic approach fits well with the proposed design. The study draws from a huge set of data (*32 million and 700 thousand tweets*), which cannot be thoroughly analysed only with manual coding. However, manual coding allows for the possibility of coding the training set to obtain additional information and provides a much-needed feature in dealing with the complexity of natural language. In this respect, let us analyse a made-up sentence like '*IS is correctly applying the Islamic law, successfully fighting its enemies and effectively providing protection to Sunnī citizens of Iraq, but this doesn't make them less barbaric than they are'*. The last part of the sentence radically changes the meaning of the previous part in a way that any fully automated method would not grasp. However, similar sentences are very common in social media, where irony and paradoxes often characterise the language of users. To highlight the importance of supervised machine learning, let us imagine coding the previous Tweet with a fully automated method, which counts the number of positive words, (*e.g. 'correct-', success-', 'protect-*) and negative to others (*e.g. 'barbar-')* and attributes a general value to the Tweet based on the higher number of positive or negative words. This method would incorrectly code the Tweet as expressing a positive Sentiment towards IS. On the contrary, a human coder would easily get the meaning of the previous tweet

Furthermore, my research focuses on some aggregated generalisation about the daily percentage of tweets which express support for/opposition to IS. In other words, my research aims at finding the daily support for the Islamic State, while the analysis of the most common topics of pro-IS and anti-IS discourse only provides additional information to the research. It follows that the main task of my research was that of quantification, more precisely, estimating category percentage with regard to the sentiment towards IS and its ideology and not that of individual classification (*e.g. classifying individual documents*). The effectiveness of the methodology draws from two statistical assumptions: a) to focus on aggregated proportion, instead of making an individual classification and only after aggregating such individual classifications, to improve the

performance of the method and b) no statistical property must be satisfied with the training set for this approach to work properly (Ceron and al., 2016; 2018). The authors estimate that 'relaxing such an assumption allows to reduce dramatically (*by more than 20 per cent*) the required size of the training-set needed with respect to a given test set for the analysis to produce reliable estimates' (Ceron and al., 2018, p. 7-8). Moreover, focusing on proportions rather than individual classification can improve the accuracy of the final results and there is no statistical property of the training set which should be satisfied for this approach to work properly (Ceron and al., 2018). When choosing between iSa and ReadMe, which is the only alternative for aggregated sentiment analysis, I relied on the study of Ceron and al. (2016) which compared iSa with other available techniques to conclude that iSA outperforms Readme in terms of statistical accuracy. The analysis was carried out by utilising the software R, with a set of packages for sentiment and opinion analysis.

Another advantage of the proposed methodology is that it accounts better for three issues which are central to my research: censorship, Internet Bots and 'trolling'. The first refers to the decision of Twitter to ban pro-IS accounts. The methodology permitted to divide the sample into two different periods, which allowed me to carry out my analysis in the period which preceded and the one which followed the ban of pro-IS accounts when assessing the hostility/support for IS. Internet Bot is a software application which runs automatic texts. A study (Varol and al., 2017) estimates the percentage of bots on Twitter to be between 9% and 15%. Studies suggest that also IS supporters have operated bots, despite using them in a limited way (Moriarty, 2015). In my study, I accounted for the risk of including bots in the findings, but I believe that manual coding has enabled me to exclude some bot-generated contents from the results by flagging those which I considered as irrelevant in the *'off-topic'* category. For those who are most likely generated by pro-IS or anti-IS discourse, I have included them in my study. This is because my goal is to estimate the degree of pro-IS and anti-IS tweets in the Arabic-speaking Twitter-sphere, not to account for the support of the group in the Arab world. Furthermore, the theoretical framework of the dissertation looks at Twitter as a sphere where different discourses compete for one against the other with all possible means, including bots. Finally, 'trolling' refers to the common habit of users to ironically show support for a specific opinion which they oppose. To prevent misreading such contents, I was assisted in my study by two native Arabic speakers and translators. I believe this external support to be essential in checking whether I have committed any mistakes in coding, as well as spotting any possible degrees of irony which I did not capture in the first coding. In a nutshell, I chose the *iSA* method because of four features which fit well with my study: it allows to perform at the same time both sentiment and opinion analysis, it works well for studying a very large number of tweets which would be difficult to process manually, it gives more precise results than a fully-automated method, and it is particularly fitted for the Arabic-speaking online sphere, where both Modern standard Arabic and dialects are commonly utilised.

Chapter One: IS and its Ideology. A study of the Arabic-Speaking Twitter-sphere

'We give the media what they need: newsworthy events. They cover us, explain our causes and this, unknowingly, legitimizes us' (Former terrorist active in the German Red Army Faction and Italian Brigate Rosse cited in Weimann and Winn, 1994, p. 61)

On the 7th of January 2015, nine gunmen entered the newsroom of the satirical magazine of Charlie Hebdo in Paris to kill all journalists and caricaturists. Perpetrators claimed they were acting in retaliation for the publication of offensive comic-strips about the prophet Mohammad in 2006 in this satirical magazine. Arabic-speaking IS followers promptly expressed their support for the operation on Twitter, using hashtags like *#Our_revenge_for_the_Messenger*, *#Paris_is_Burning*, *#Paris_under_Fire*, and *#Lions_of_Monotheism* (Black, 2015). The event had a broad resonance in the Arabic-speaking Twitter community. Thousands of ordinary Arab users, including those who had never expressed their opinion on IS until the day before, shared their views on the Paris attacks in their Twitter profiles. In just seven days, around 435,000 single users per day published 1 million and 100 thousand tweets about the Islamic State on Twitter. Their opinions have become part of a larger share of 85 million and 204 thousand[41], which were published by approximately 28 million and 885 thousand single users per day[42] between October 2014 and October 2017. This large database provides the primary sources for the first chapter, which focuses on the opinions about IS and the main motivations for support or oppositions to the Islamic State and its ideology.

Moreover, the chapter focuses on the discourse about IS and its ideology in the Arabic-speaking Twitter community by checking three macro-groups of tweets: support, ideological continuity and opposition. The chapter is structured around nine main parts: a brief exposition on the IS history, an overview of the current literature on the terrorist groups' communication strategy in general and IS in particular, a focus on the research question, a brief explanation of the adopted approach and methodology, an overview on the coding system and preliminary results, a discussion on the main results with illustrations of some of the collected Tweets for the macro-category of support, a discussion on the main results with illustrations of some of the collected Tweets for the macro-category of ideological continuity, a discussion on the main results with illustrations of some of the collected Tweets for the macro-category of opposition, and the conclusions.

41 My sample comprises 28 million and 418 thousand tweets, which represent 33.3% of the total tweets on IS in the analysed period. More information on the sampling procedures will be provided in the next pages.

42 The number is an estimation, given that my results represent 33.3% of the tweets and the single users per day are 9 million and 629 thousand in total.

1.1. How does IS communicate? An overview of the propaganda strategy of IS

Jihadist groups have long used online forums and social media to broadcast their messages (Veilleux-Lepage, 2014) but IS was arguably the first Jihadist group to implement a comprehensive communication strategy. The terrorist organisation tailored a plurality of messages for different media and audiences. Current literature on the issue on the Islamic State has identified three central objectives of IS propaganda: '*attracting an audience'*, '*broadcasting military success'*, and *'marketing the Caliphate'* (Ingram, 2014; Saad and al., 2015). Drawing both from this distinction and a database of IS materials which I have been collecting since 2014[43], I have added some other distinctive elements of IS communication strategy which do not refer only to the aforementioned *objectives* but also to the *propagation* and *audiences*. In the following part, I provide an introductory analysis of the IS propaganda for each category to show an overview of the characteristics of the IS communication strategy. The category of *propagation* refers to the reach of the Islamic State propaganda inside and outside its controlled territories. The IS strategy centred on three main dimensions in spreading its propaganda: *local, regional* and *global*. The *local propagation* corresponds to the materials which the Islamic State spread in the territories under its control. The *regional propagation* refers to the messages which targeted the Sunnī-Muslim majority countries and communities, which comprised both possible sympathisers and enemies, or those viewed as such by IS. *Global propagation* refers to the propaganda which the Islamic State published to reach a global audience in the widespread non-Sunnī Muslim countries and communities. The first dimension of propaganda mostly utilised Arabic, the second and the third dimension combined Arabic (arguably prevalent in the regional propagation) with other languages.

The three categories in the *propagation* of IS propaganda broadly overlapped with three targeted *audiences: supporters*, *possible sympathisers* and *opposers/enemies*. *Supporters* are those individuals who had some degree of sympathy outside IS-controlled territory or who lived under IS rule. Radios, pamphlets and billboards mostly targeted those who lived in the IS-controlled territory. The IS message to the local population was quite straightforward: "We saved you and restored your dignity", which naturally leads to the next message: "You have to obey our rules"' (al-Qarawee, 2015, p. 150). Those who supported IS from abroad were mostly reached by the social media contents containing insights on the group. Two examples are the English magazine *Dabiq* and the Arabic *al-Nabā'*, which contain news and theological justifications of its actions (Gambhir, 2014; Ingram, 2016; Colas, 2017). *Possible sympathisers* included the entire Sunnī community, composed of individuals that might join the cause of the Caliphate in the eyes of the Islamic State. IS targeted this group mostly by using the internet in general and the social media in particular. *Opposers/enemies* included all those Sunnī Muslims who had not joined IS, whom the Islamic State propaganda calls hypocrites (*Munāfiqūn*) or the heterogeneous group of people which IS deems as infidels (*Kuffār*). In this respect, it is important to stress that IS considers those Muslims who oppose them to be outside the Islamic faith (Maggiolini and Plebani,

43 The database includes both videos, magazines, tweets, photos and audios I collected for a set of lessons on IS communication strategy for the University of Pavia, the Polytechnic University of Milan, IULM University of Milan and a set of public lectures in different parts of Italy.

2015, p. 29). Similarly to possible sympathisers, IS utilised the Internet and social media to target this group. The importance of this tripartition will further be explained in the next part of the chapter.

Along with Ingram (2014), I argue that the *objectives* of IS communication strategy can be divided into three central themes: *marketing the Caliphate*, *attracting an audience* and *broadcasting military success*. The aim of *marketing the Caliphate* was recurrent in the IS communication strategy. Charles Winter (2015, p. 6) found that more than half of the Caliphate video propaganda focused on 'depicting civilian life in Islamic State-held territories'. The presentation of a utopian image of the territories under IS control, which is one of a prosperous and secure Caliphate, serves both to strengthen internal consensus and gain new followers. To 'attract an audience' IS presented the decision to join its ranks as an appealing choice. As Winter (2018, p. 110) claims, 'the Islamic State sought to offer itself to would-be supporters as a lifestyle choice, a utopian alternative within which new adherents would be blessed as founding fathers and mothers'. This message spread mostly through social media, where IS fighters often shared their experiences in the Islamic State with their followers, providing first-hand insights on their everyday life. An example of this typology of communication can be seen in the *Mujatweets*, a set of one-minute videos on the everyday life in the Caliphate and testimonies of Foreign Fighters which pro-IS accounts published in 2014-2015 on Twitter. *Broadcasting military success* is the most well-known aspect of IS propaganda in the West, but it is just one element of the IS communication strategy. The Caliphate targeted its enemies with brutal images of beheadings, mass atrocities and tortures. In the aftermath of terrorist attacks, pro-IS propaganda often celebrates perpetrators as heroes who have sacrificed their lives for the sake of the Islamic State and the entire Sunnī *Ummah*. This could be explained by referring to the long-standing strategy of psychological warfare, targeting the morale of the enemies and the apocalyptic vision of IS.

1.2. From audiences to participants: A new perspective on terrorist discourse

The chapter looks at the terrorist discourse from the perspective of the participants who receive, discuss, and re-elaborate IS narrative. This focus differs from most of the current literature, which focuses on terrorist propaganda. To better explain this paradigm shift, the following review consists of three parts: a definition of propaganda and its relations with terrorism, a literature review of the main trends in analysing the impact of terrorist discourse among a plurality of audiences and an explanation of the chapter perspective on terrorism studies and its implications. Propaganda is a central aspect of any political organisation, which can be defined as a genre of discourse (Van Dijk, 1998, p. 8) implemented by a political group for convincing others to change (or maintain) the current state of the world. Terrorist organisations make no exception. Drawing from Tugwell (1986, p. 5), propaganda can be defined as 'doctrines or special appeals disseminated to influence the opinion, emotions, attitudes or behaviour of any specified group in order to benefit the sponsor either directly or indirectly'. Therefore, propaganda links to the ideological message which the terrorist groups aim at spreading. Moreover, the existence of centralised propaganda is the element that distinguishes terrorists from other criminal organisations (*e.g. Sicilian Mafia, Mexican Narcos*), which engage in violence solely for preserving

economic interests, intimidating rival groups or state authorities. Harmon and Bowdish (2018, p. 248) correctly argue that 'terrorism is a purposeful activity (…) It aims at psychological impact and uses the power of ideas and force to project and targets'. In other words, violence is instrumental in obtaining political goals. Schmid and De Graaf (1982, p. 14) summarize the importance of propaganda for terrorists in the following statement:

'Terrorism cannot be understood only in terms of violence. It has to be understood primarily in terms of propaganda. Violence and propaganda, however, have much in common. Violence aims at behaviour modification by coercion. Propaganda aims at the same by persuasion. Terrorism can be seen as a combination of the two. Terrorism, by using violence against one victim, seeks to coerce and persuade others'.

This last quote suggests that the propaganda of terrorist groups has at least two dimensions (*coerce some/persuade others*). The distinction can easily be found in IS propaganda, which 'attaches perceptions of crisis to 'out-group' identities – that is, anyone not aligned with IS – and solutions to 'in-group' identities represented by IS-aligned Sunnī Muslims'. (Ingram, 2014, p. 5). However, the communication strategy of any terrorist groups can hardly be reduced to the dichotomy *supporters/enemies*. For example, let us take a quote of the online manifesto from the neo-Nazi American terrorist organisation 'Aryan Nations[44]': 'The Jew is like a destroying virus that attacks our racial body to destroy our Aryan culture and purity of our race'. Those of our Race who resist these attacks are called 'chosen and faithful' (Anti Defamation League, 2009[45]). Utilising the dichotomy *supporters/enemies* limits the understanding of the message as directed solely to the supporters (*chosen and faithful*) and its enemies (*Jews*). However, one could argue that the message might also be directed to all those neo-Nazis supporting the idea that Jews are destroying Aryan culture, or to the government which is not doing anything to limit any alleged danger caused by the Jews. Cordes (1987, p. 150-177) rightly points out that terrorist group communiqués often contain several messages for several audiences. One of the audiences he identifies is the so-called *constituency*, namely those people whom a terrorist group claims to defend or support (*e.g. 'the proletariat', 'the people', 'the nation'*). Furthermore, he argues that their message is often directed to other like-minded terrorist *sympathisers* to gain acceptance or supremacy within an ideological network. Finally, the terrorist aims at their *supporters* to maintain the high moral ground.

The idea that terrorist messages target more than two audiences introduces a new promising element in the analysis of terrorist propaganda. Terrorists often claim to be fighting for something higher than their organisation, a '*constituency*' of people who they want to protect, while also competing with like-minded

44 The Aryan Nations is a terrorist organisation founded by Richard Girnt Butler which was mostly active from the '70s to the '80s in the United States. The group combined neo-Nazi themes with some element of Christian identity and claims to be fighting to defend Aryans from a worldwide Jewish conspiracy against Christianity and the White race.

45 Twelve Aryan Nations website: www.twelvearyannations.com. The statement can also be found here: Anti Defamation League (2009) 'Aryan Nations/Church of Jesus Christ Christian'.

Available at: https://www.adl.org/education/resources/profiles/aryan-nations (Accessed: 20 June 2019)

groups for leading the fight. For example, the Italian Red Brigades (BR)[46] emerged among a plurality of extremist organisations which claimed to fight for the oppressed proletarians *(e.g. the Armed Proletarian for Communism, Prima Linea, the Armed Proletarian Cells*). These groups compete among each other to gain popular support. However, Cordes (1987) does not provide clear indications to distinguish between those of the constituency who support the group (*sympathisers*) and those of the constituency who fight against them. Cronin (2009) correctly points out that support in the constituency is detrimental for any terrorist organisation. In the conclusion of his analysis on the factors which determine victory or defeat for terrorist groups, he correctly observes that 'marginalisation from their constituency is the death-knell for modern terrorist groups' (2009, p. 222). In other words, it is not enough for a terrorist organisation to convince its *supporters* that its fight is in the interest of the *constituency*. Still, it is essential for a considerable part of the *constituency* to believe it.

An alternative to the study of the role of audiences in terrorist propaganda is that of Joanne Wright (1991), who implements an audience-based approach to study the communication strategy of the Red Army Faction (RAF[47]) and the Provision Irish Republican Army (PIRA[48]). Wright (1991, p. 73) argues that 'that terrorist propaganda, including violence, has specific targets and messages which are adjusted or emphasised according to the target selected or the particular tactic being adopted'. Unlike Cordes (2017), she provides a tripartition of the targets between an *uncommitted audience*, a *sympathetic audience* and an *active audience.* The author defines the *uncommitted audience* as 'the general public of the country in which the terrorist group is operating, and international public opinion' (1991, p. 77). The *sympathetic audience* is defined with Mao's dictum 'the sea in which the fish swim' (1991, p. 99). In applying this category to the PIRA, she defines it as 'those who support the idea of a united Ireland, and either life in, or are ancestrally linked with, Ireland' (1991, p. 118). The *active audience* 'specifically refers to those engaging in violent actions or logistical operations designed to support violent actions' (1991, p. 136). This tripartition allows her to analyse the messages of the two groups by dividing the targeted audiences and analysing the groups' ideology to understand the strategy they enact to gain support from all three audiences.

This study rightly captures the importance of analysing the audience, which has some degree of sympathy for a terrorist organisation, as distinguished from the constituency. Terrorist groups often attack members of their constituency to strengthen commitment from supporters or to gain new sympathisers. Nevertheless, they do

46 The Red Brigades (BR) was an Italian far-left terrorist group active in the 70s' and 80s'. The group combines elements of Marxist-Leninism with Maoism. The organisation sought to create a "revolutionary" state through armed struggle, and to remove Italy from the North Atlantic Treaty Organization.

47 The Red Army Faction (RAF) was a German far-left terrorist group active in the 70s' and the 80s'. The group combined some elements of *Marxism* and *Maoism* and was committed to armed struggle against 'Imperialism. Their objective was to trigger a revolution in Germany and the other Western States.

48 The Provisional Irish Republican Army (PIRA) was an Irish Republican Paramilitary organisation which fought in the '70s and the end of the 90's to end British rule in Northern Ireland. The group considered its struggle to be in the name of all Irish people who were its core-supporter group.

not refrain from framing their fight as being carried out in the interest of the whole constituency. The PIRA, for example, did not withdraw their claim to be fighting for all Irish people, also when attacking Irish policemen or businessmen (Drake, 1998, p. 57). The same applies to IS; they killed several Sunnī citizens in the controlled territory for not respecting IS authority (Tony Blair Institute for Global Change, 2018[49]), but still framed its jihād as defending all Sunnīs. Wright (1991) gives accounts of attacks against members of the constituency that could be understood as pursuing three goals: addressing the *uncommitted audience* by threatening new killings for those who oppose them, showing the *sympathetic audience* that the organisation is fighting in their name against the traitors, and demonstrating its operational capabilities to an *active audience*. However, her account fails to provide a clear definition of the s*ympathetic audience*, as it focuses exclusively on the perspective of the terrorists. Extremist organisations often consider a vast majority of the members of their *constituency* as people who can be somehow convinced to join their cause, but the reality shows that part of their *constituency* still oppose them. For example, a poll of the Turkish Society for Political, Economic and Social Research's (SETA, 2015, p. 65) among Kurds in Turkey found that only 38.1% believe that the Kurdistan Workers' Party[50] (PKK), which is the hegemonic separatist group in the Kurdish area of Turkey, represents all Kurds[51]. Moreover, Wright (1991) does not consider the ideological context in which the terrorist group operates. This is a central element because any terrorist propaganda competes with other narratives to gain support from its targeted *constituency*. For example, a French citizen of Sunnī religion would learn of the national democratic values in school, might take some information from several French-speaking newspapers of different ideological orientations on current events through the internet, comment on the news with his Islamist father, and even read some materials of the Jihadist propaganda. His worldview would include or exclude some elements of the many discourses he has encountered, and his intellectual elaboration on other worldviews would influence his response to the propaganda of a terrorist organisation, which primarily aims at the activating of these many identities. To focus solely on the propaganda from one of the narrative producers, such as a specific terrorist group, would thus greatly limit the understanding on the discourse about the terrorist message in the different audiences because it does not capture how the message resonated in the different targeted groups. Finally, current technologies allow *supporters*, *possible sympathisers* and

49 There are several reported attacks against Sunnī civilians from IS. Here there is a brief account on these attacks with some data: Tony Blair Institute for Global Change (2018) 'How Islamist Extremists Target Civilians'. Available at: https://institute.global/insight/co-existence/how-islamist-extremists-target-civilians (Accessed: 24 June 2019)

50 The Kurdistan Workers' Party (PKK) is a far-left independentist organisation based in Turkey and Iraq. The group has mostly targeted Turkish soldiers and police officers in a long conflict from 1984 until today. Their political goal is the independence of Kurdistan and the instituting of a republic based on the principles of Democratic Confederalism, a political theory which combines direct democracy with confederal citizens' assemblies, trade unions, and workers' councils.

51 Foundation for Political, Economic, and Social Research - SETA (2009) 'Public Perception of the Kurdish Issue in Turkey'. Available at: http://setadc.org/wp-content/uploads/2015/05/SETA_Research_Report_Public_Perception_Kurdish_Question.pdf (Accessed: 3 June 2019).

I agree with the statement that 'the PKK represents all Kurds' as a proxy for a certain degree of support. Political conditions in Turkey would probably not allow a researcher to ask openly about support for the PKK, which is considered the most dangerous terrorist organisation in the country.

opposers/enemies to re-shape the contents of terrorist group propaganda through comments, making the targets of terrorist messages an active player in the process of discourse creation.

My approach proposes a new angle to address the issue of terrorist propaganda, which sees targeted groups not as a passive audience but as active participants in discourse. In a nutshell, I did not look at the propaganda, which is a one-sided concept, but at the discourse, which includes the perspective of both those who produce IS-propaganda material, and of those who discuss it. In other words, I argue that it is not a question of one-way propaganda from the terrorist groups to the participants in the discussion, but rather that participants reproduce and re-elaborate terrorist propaganda in the Twitter-sphere by comparing and referring to other existing narratives and creating a new discourse. I utilised the building blocks of IS ideology, which are- in some cases - shared by other worldviews, to distinguish between different groups of participants in the Twitter-sphere. Drawing from Wright (1991), I analysed the Twitter discussion on IS of three main participants' groups, distinct for their support for/hostility to IS and its ideology. I defined as *supporters* those individuals or groups who expressed a favourable opinion on the terrorist organisation, *possible sympathisers* those who shared one or more building blocks of the terrorist group ideology, while still not supporting the organisation, and lastly, I identified as *opposers/enemies* all those users who expressed a negative opinion on the Islamic State.

For this last category, it is worth addressing a limitation of the current methodology in distinguishing between *opponents* and *enemies* within the Arabic-speaking Twitter-sphere in reference to non-Sunnī Arabs. I think this difference is relevant for the theoretical approach of the thesis, which distinguished members of the Sunnī community (*opponents*) that can be targeted by IS propaganda, from enemies, who should be defeated. To provide a general account, I broadly defined as *Opposers/enemies* those who have a negative opinion on a terrorist organisation, but who can nevertheless be part of the terrorist group *constituency* (*e.g. Irish Catholics opposed to the IRA, Sunnī Muslims who have fought against IS) or are located* outside the constituency, and should be confronted and defeated in the eyes of a terrorist organisation. For this chapter, I cannot separate the members of the two groups because of the implemented methodology, which is based on aggregated tweets from different users, and I have thus included them in the same category (*opponents/enemies*). Nevertheless, I believe it to be important to take into consideration that there are Arab non-Sunnī users (*enemies*) included in my sample, and to provide a rough estimation of their number for interpreting the results. To calculate this number, I first estimated the percentage of Arabs belonging to these religious affiliations to be around 16.85% (World Bank, 2018; Pew Research, 2009; CIA World, Factbook 2018), but the Arab Twitter population is not evenly distributed. To have a more precise estimate, I weighted this percentage for the percentage of Twitter users by country in the Arab Social Media of 2017 (11.1 million), which returned a percentage of 13.80%. Another possible assessment entails considering the percentage of geo-localised Tweets in the 5,000 Training set. The training set is the 5,000 tweets which I extracted from my test set. Looking only at those tweets not located in the US[52], these are 29.92% (*39.19% from the Arab countries within the non-US group*), the

52 Twitter geolocated users in the US by default when not specified otherwise.

percentage of non-Sunnī weighted for the percentage of Shīʿa in these 384 tweets is 10.50%. I took a value of Tweets written by 'enemies' (non-Sunnī) to be 12.06% of the total, which is the average between 10.55% and 13.80% for the category 'enemies'. I am very aware that this estimation has several weak points, methodologically speaking (*e.g. the sample has changed over a period of 3 years, there are consistent Arab-speaking minorities outside the Arab world, and it does not take into account the demographic distribution of the population*), therefore I am not using this number for the research question, but I will take this percentage only as an indication. To sum up, my research identifies the main narrative in the field of the Arabic-speaking transnational Twitter community, which discusses the Islamic State. In this respect, I looked at the different typologies of discourse starting from this tripartition. The category of *support* collects all tweets written by supporters who express a positive Sentiment for the Islamic State. The category of *ideological continuity* refers to those tweets written by *possible sympathisers*, which I identify as the contents coded 'negative' in the category of 'Sentiment for the Islamic state' but nevertheless supporting one or more building blocks of the Islamic State ideology. The category of *opposition* includes all tweets which express a negative stance towards IS in the category of 'Sentiment towards IS' and therefore written by *opposers/enemies*. For each of the three categories, the chapter focuses on answering the following two questions:

How popular have IS and its ideology been among the Arabic-speaking Twitter-sphere? What are the characteristics of the discourse for support and hostility?

To answer these two questions, I focused on studying the elements of the Arabic-speaking Twitter-sphere, which I define as the field where discourses about the Islamic State compete. The first is an analysis on the evolution of the discourse for the three-year period measuring the degree of support for/opposition to IS and its ideology from October 2014 to September 2017. The second is a study on the most recurrent topics concerning pro-IS and anti-IS narrative and a set of sub-categories for the analysed building blocks to provide additional insights into the Arabic-speaking Twitter-sphere regarding the Islamic State.

1.3. Analysing the discourse about the Islamic State on Twitter. Prospects and limitations

In the previous part, I discussed the theoretical approach of the chapter. The following section will revolve around the three reasons for focusing specifically on Twitter in analysing the discourse about IS in Arabic: *transnationality, representativeness, centrality of the Social Media in IS propaganda*. In this sense, I first aim to discuss the main advantages and limitations of the Twitter analysis and present the methodology used. To introduce the first reason (*transnationality*), I shall start from the two conclusions of the previous part, namely that terrorist organisations tailor different propaganda strategies to communicate with specific audiences and those online audiences are not just passive targets for propaganda, but active players in the process of discourse creation. This last component of contemporary communication can arguably be better analysed on Twitter than any other social media platform for its characteristics: every single Tweet can potentially reach a broad audience thanks to re-tweets and likes, but it can also be very well criticised and re-elaborated through comments. Furthermore, Twitter provides an ideal platform to look at the transnational dynamics between the

discourse and the targeted audience. This is particularly true in the Arabic-speaking Twitter community, where users share the same language and, in some cases, the same culture and political ideology (Pintak, 2009). In the context of the Arabic-speaking Twitter-sphere, the propaganda creators did not approach Twitter as an unexplored land but adapted their message to the ideological networks already utilising this platform (*e.g. Islamists, Salafis*) to spread their message.

The second reason (*representativeness*) links to the observation that focusing on Twitter provides an informative sample for the online opinion on sensitive topics in the Arabic-speaking community. The Arab Barometer Wave IV (2017) reports that 19.97% of all the Arabs who had a social media account also had a Twitter account in the period between 2016 and 2017[53]. The sample is particularly interesting when taking into consideration that Twitter comprises a large variety of users in the Arab world, as it is widely used by elites, extremists and everyday citizens alike (Mourtada and Salem, 2014). In other words, Twitter provides a unique repository of spontaneously generated contents, which have the characteristics of being published in real-time and concomitantly with ongoing events by people from several Arab countries and very different ideological orientations. In this respect, it is important to stress that representativeness refers to the Twitter discourse about IS, not the general view of the public. More specifically, many users who oppose or support the group might simply not have a Twitter account or decide to avoid the discussion about IS for any possible reason. To better understand this issue, it is worth pointing out that the average daily number of single users per day for the three years was 26,355 (2 million 888 hundred thousand single users for the entire three year-period[54]) which is a small fraction of the whole number of Arabic-speaking people, estimated to be 414 million. Moreover, user-generated data on the internet are particularly suited for studying sensitive topics such as the Islamic State, because it is possible to observe theoretically relevant social and political attitudes that are normally difficult to detect. This goes along with the observation that social media also allow collecting spontaneously generated contents, which Nagler and Tucker (2015) call 'unfiltered' opinions of individuals. Several authors point out that social media data are less likely to be affected by social desirability than polling data (DiGrazia, McKelvey, Bollen, and Rojas, 2013; Fisher, 1993). For example, Stephens-Davidowitz (2013) looked at Google searches conducted during the 2008 US presidential race to find that there were some US states which were more frequently looking for Barack Obama's name in conjunction with racial epithets. One could argue that it would be politically sensitive for a person to state his/her support publicly for IS in the Arabic-speaking world, as such a statement might lead to detention or other personal consequences. However, there are several reasons to claim that it is possible to detect opinions about IS on Twitter better than with other methodologies.

53 It is important to stress that the Twitter sample is not evenly distributed, as 49% of Arabic-speaking Twitter users are from the Arab Gulf, which made up only 12% of the total population.

'Social Media and the Internet of Things, Mohammad Bin Rashid School of Government', 2017, *Arab Social Media Report*, 5 February, viewed 5 June 2019, https://www.mbrsg.ae/getattachment/1383b88a-6eb9-476a-bae4-61903688099b/Arab-Social-Media-Report-2017

54 Single users are calculated on a daily base. More precisely, when an author tweets on one day and then the following it is counted as two users. In the case that he tweets twice in the same day, this counts as a single user.

First, those who join the discussion about IS are often very well aware of the risks, and they have several options for freely expressing opinions to avoid personal repercussion on Twitter: Users can express their opinion anonymously (Jamal and al. 2015); they can choose not to be localised; they can freely choose to set their location in a place which is different to their real place on the platform and, in some cases, they can even choose to use VPN[55] to locate their account in a state which differs from that of their real location. Specifically with regard to VPN, these tools were widely utilised already in the Arab spring (Danju and all., 2013) and they are, therefore, widely utilised in the region. Second, Twitter allowed IS to spread the contents of IS without strict limitations for the first months of the test set, as I will discuss in the second chapter. In this respect, it is worth pointing out that the adopted methodology includes those tweets which were first published by a user and then censored by the platform.

The third reason (*centrality in the IS propaganda*) refers to the fact that IS strategically tailored its message on Twitter to obtain broader support from those who are seen as sympathetic audiences. Terrorist organisations, in a similar manner to other revolutionary groups (Bateman, 1974, p. 314-362), have always aimed at transforming the current reality by eliminating 'existential' opposers (*e.g. regime, rival groups*) or creating a new political order (*e.g. Islamic State, Communist society*). To achieve this goal, IS has actively worked to convince its core-constituency (*Arabic-speaking Sunnī Muslims*) that: 1) the group cause is legitimate, 2) there is no other way to obtain their goal other than through violence, and 3) that victory will be surely obtained. This is precisely what most of IS propaganda on Twitter has been all about. For a large part of the analysed period, the Islamic State selected Twitter as the main platform for sharing these three messages (Berger and Morgan, 2015; Farwell, 2014; Awan, 2017). Klausen (2015, p. 2) rightly observes that there are at least two good reasons for the Islamic State to mostly focus on Twitter: the first is that the mainstream media 'routinely quote Twitter as an authoritative source of information about the progress of the insurgency' and therefore to publish its contents on this Social Media is the best way to share information with those who can eventually propagate news to a broader audience. The second is that this platform allows for large-scale public dissemination of contents. Thanks to retweets and hashtags, each user can potentially reach a vast audience, regardless of the number of followers. A third reason is that the platform was not effective in censoring pro-IS contents in the first phase (*2014-beginning 2015*), allowing terrorists to spread their propaganda without too many obstacles (Tiku and Newton, 2015[56]). Wiechert (2017, p. 71-75) draws some interesting comparisons

55 Virtual Private Newtork (VPN) is a tool which allows users to extend a private network into a public network to prevent localisation of a device from the IP. It Is a method which is widely utilised by users who live in authoritarian regimes to avoid censorship and freely express their opinions. VPNs are widespread because they are relatively easy to utilise for common users.

56 The inability of the platform to erase pro-IS contents has been confirmed by the CEO of Twitter, Dick Costolo. in a leaked document:

Natasha Tiku and Casey Newton, 2015, 'We suck at dealing with abuse', *The Verge*, 4 February, viewed 8 June 2019, https://www.theverge.com/2015/2/4/7982099/Twitter-ceo-sent-memo-taking-personal-responsibility-for-the.

between the Islamic State propaganda and the AIDA marketing model[57] on Social Media. The author claims that the terrorist organisation, similar to a brand, utilised a four-step strategy in its propaganda. The first was to generate high media resonance and viral effects to reach a broad audience (*Attention*), the second was to "present their enlisters with 'evidence' to convince "potential" sympathisers (Winter, 2015; Wiechert, 2017) to engage with the brand (*Interest*). The third was to share contents on the lifestyle of foreign fighters by encouraging them to share their experiences with a large number of users (*Desire*). As Mahood and Rane (2016, p. 19) correctly observe, IS 'has been highly successful in (…) portraying a glorified and romanticised version of an Islamic State' through the social profiles of its supporters'. The last element was decisive in convincing possible sympathisers to 'buy its brand' and become effective supporters of the organisation by travelling to Syria, providing ideological support or carrying out terrorist operations in other countries (*Action*).

1.4. The method to analyse the discourse about the Islamic State on Twitter

I have already discussed the adopted methodology in the previous part, but it is worth recalling some important elements of the method and explaining in further detail the iSA performances vis-à-vis other researches on the same topic before discussing the results in detail. The chapter relies on 32 million, 700 thousand tweets which represent 33.3% of all the total tweets containing a set of Arabic keywords about IS[58], including those published by banned accounts. The dataset was entirely collected through the software Brandwatch, an official firehose company dealing with Twitter. Part of my database was also utilised by Ceron, Curini, and Iacus (2016) to carry out their analysis on the topics of Sentiment about IS and foreign fighters in the period between June 2014 and January 2015. Differently to their analysis, which utilised the entire test set, I included only 33.3% of the tweets which include a reference to the Islamic State between the 1st of October 2014 and the 30th of September 2017 because of the extended period and the very large amounts of data. Besides, I utilised a slightly different query for my sample, as I will discuss later. To reduce the noise of the sample, I filtered it from all contents which revolve around pornography[59]. This filtering reduced the sample to 28 million and 418 thousand tweets (*33.3% of all tweets which discuss IS);* I then extracted a random sample of 5,000 tweets from this filtered database, and I manually coded each content according to twelve categories. This specific chapter focuses on seven of these twelve categories, which I have discussed in the previous part. These categories are: *Sentiment on IS, support for first building blocks of IS ideology, support for the first building blocks of IS ideology, support for the second building blocks of IS ideology, support for the third building blocks of IS ideology, support for the fourth building blocks of IS ideology, the main topics of the pro-IS discourse and the*

57 AIDA is the acronym for **A**ttention or Awareness, **I**nterest, **D**esire and **A**ction. The model is widely utilised in marketing to describe the stages for a consumer from knowing a product to deciding to buy it.

58 The list of words in the query can be found at the end of the chapter.

59 The reason for such a high number of tweets related to pornography is that I included in my sample all the words which include 'Caliph' (خليفة). This is the family name of a very famous pornstar (Mia Khalifa). To filter these contents, I excluded all tweets containing the name of the pornstar (ميا) and her complete name (ميا خليفة) and some words that clearly refers to pornography (نيك,كسي, زب, سكس).

main topics of the anti-IS discourse. My manual coding was supplemented by a revision of two professional Arabic translators and an external coder for the intercoder reliability. I have discussed the coding system in detail and provided some examples in the previous part of the dissertation.

The chapter utilises the iSA (*integrated Sentiment Analysis*) methodology[60] , which derived from the work of Hopkins and King (2010). I have already explained in detail the method in the methodological part, but it is worth calling to mind some elements which help in understanding the reason for choosing this specific methodology in comparison to other studies on the Twitter discourse about IS on Twitter, by focusing on two characteristics of the method, which is *'supervised'* and *'aggregated'*. First, iSA is a *supervised* method because it is based on manual coding. I believe manual coding is particularly fitted for the aim of the chapter for both a general and a specific reason. The general reason is that human coders usually sort contents into different categories better than any fully automated method. The specific reason is that I could not identify recurrent words in the discourse on IS, which indicate almost always a positive or a negative attitude towards the Islamic State and its ideology. To explain these two concepts, I referred to the category Sentiment IS in the manually-coded training set of 5,000 random Tweets extracted from the whole database. Let us imagine coding this sample through a dictionary-based method. An example is that of Magdy and al (2016), who attribute a negative Sentiment to those tweets which contain the Arabic word '*Daesh'*, and *a* positive Sentiment to those which contain the words '*Islamic State'*. According to this methodology, contents like *'BBC presents the first episode of al-Raqqa Diaries: Life under the "Islamic State" organization*[61] would be included among 'Those who express a positive sentiment on IS'. Similarly, a tweet like: '*two lies of our time, Iran is an 'Islamic Republic' and Daesh is an 'Islamic State', they both destroy Islam in its name*[62] *'* might have been coded as carrying a positive (*Islamic State*) or negative sentiment (*Daesh*). However, my training set shows that the word Islamic State (دولة اسلامية) does not always indicate a positive Sentiment. For example, there are many tweets which include the hashtag #Islamic_State (*1986 of the total 5,000 tweets*), but only 15.08% of these tweets carry a positive Sentiment. One reason is that many anti-IS users often utilise the #Islamic_State hashtag after the word 'Arrest' (*13.82% of the tweets which contain the hashtag #Islamic_State*) to celebrate the capture of IS members. Moreover, some users (*2.84% of the tweets which contain the word 'Islamic State'*) put the expression 'Islamic State' in brackets to signal their ideological distance from the terrorist group. The term *Daesh* (داعش) can also rarely be found in tweets which carry a positive sentiment towards IS (*1.05% of the tweets which contain the word 'Daesh'*). For example, a tweet such as '*a picture of a group of mujahedeen of*

60 A comprehensive explanation of the methodology can be found in:

Ceron, A., Curini, L., and Iacus, S. M. (2016). iSA: A fast, scalable and accurate algorithm for sentiment analysis of social media content. *Information Sciences, 367-368*, 105-124.

61 The original tweet is: BBC "تعرض الحلقة الأولى من يوميات الرقة: الحياة في ظل تنظيم "الدولة الإسلامية

62 The original tweet is: كذبتان نعيشهما في عصرنا إيران"جمهورية إسلامية" و داعش"الدولة الإسلامية" كلاهما يدمران الإسلام باسمه

the Islamic State in the countryside of Suwayda [63] *in a barrack of the Nuṣayrī*[64]*# Damascus State # Daesh #al-Hilal_Persepolis*[65] *# Damascus #ISIS*[66]*',* clearly carries a pro-IS stance, but it still utilizes the Hashtag #Daesh to gain a broader audience. These examples show that an unsupervised method probably lacks the accuracy to conduct this specific research. The issue would in all likelihood also persist by including a set of words which express a positive or negative sentiment, similarly to the study of Mirani and Sasi (2016) on an English sample of tweets about IS. The word '*Caliphate*' (خلافة), which clearly carries a positive sentiment, is also utilised in expressing a negative stance towards IS in 40% of the tweets which contain this word in my sample. For example, those contents in the training set, which include the derogatory expression *Caliphate of Daesh*[67] *(1.88% of the tweets which contain the word 'Caliphate')* clearly express a negative Sentiment.

Furthermore, iSA is also an *aggregated* method, which combines manual coding with machine learning. Drawing from Grimmer and Brandon's (2013, p. 275-279) definition, iSA is an a*ggregated* method because it estimates the proportion of documents in each category. More specifically, the algorithm "learns" how to sort the contents which were not previously coded by referring to the training set and words utilising proportion in each category. I have already discussed the main reasons to implement this methodology in the previous part, and I will thus focus on one general reason and two specific reasons for implementing iSA in this chapter. The general reason is the accuracy of the methodology, which 'outperforms other commonly used techniques with individual classification as well as the only other alternative for aggregated sentiment analysis, known as ReadMe introduced by Hopkins and King' (Ceron and al., 2016, p. 7-8). The first specific reason is that this method has been already successfully utilised to estimate the Sentiment on IS in a large dataset of Tweets (*26.2 million*) (Ceron and al., 2018). The second specific reason refers to the research question, which focuses on the support for/opposition to IS and support for/opposition to its ideology. Examining the theoretical approach of the dissertation helps to explain why an aggregated method is particularly suited for the research. The study of ideological continuity draws from the theory of Van Dijk (1998; 2011) on ideology and Freeden's concept of building blocks (2013), which I combined to provide a theoretical framework to measure support for the ideological continuity between IS and other ideologies. I discussed the theories extensively in the introduction, but it is worth pointing out again that sharing one or more building blocks does not necessarily translate into support for an organisation or a party. For example, an American citizen might believe that the '*Income inequality is a central issue'* similarly to the platform of the Democratic party, but still consider this political

63 Suwayda is a region of the south of Syria.

64 Nuṣayrī indicates Alawi Shīʿa, who were founded by Ibn Nusayr and his followers and originally lived in the al-Nuṣayrīyah mountains of Syria. The term has acquired a pejorative meaning in current times, and it is often utilised to indicate the Syrian regime, as the Assad family mostly belong to this sect.

65 al-Hillal is a Saudi team based in Riyadh. Persepolis F.C. is an Iranian team based in Teheran which were playing in the AFC Champions League on the day of the Tweet. The user utilises this Hashtag to increase the reach of the Tweet.

66 The original Tweet is: RT <user> صور لرباط مجاهدي #الدولة_الإسلامية بقرى ريف السويداء على ثكنات النصيرية #ولاية_دمشق #داعش #الهلال_بيروزي #دمشق #ISIS <picture>

67 The expression in Arabic is: خلافة داعش

organisation as part of the problem and not of the solution, and therefore have a negative opinion on the party. Similarly, the first two building blocks of IS ideology express recurrent ideas in pro-IS discourses, but these ideas are also often shared by other groups (*e.g. Islamists, Wahabis*) which consider IS to be an enemy of the Islamic community. Together with the category *'Sentiment toward IS'*, I also coded those tweets which express support for each of the four building blocks of IS ideology by making a distinction between pro-IS and anti-IS, namely:

1. Enemies are hostile towards Islam and the Sunnī community
2. The fight between the Sunnīs and its enemies is of a religious nature
3. Jihād is an individual duty for all Muslims
4. The Caliphate represents the only example of rightful Islamic State

Each of these categories is complemented with a set of sub-categories, which I discussed in the *'coding guide'* section of the dissertation, where I explained the coding system in detail. One method to measure the support for this assumption would be to identify a set of stems which express support for these ideas. A similar methodology is that utilised by Ferrara and Badawy (2017), who identified 100 top stems in the Arabic discourse on IS and selected 34 to classify the recurrent themes in IS propaganda (e.*g. Kafir and Safawī for the stems which indicate a sectarian topic*). However, my objective is to distinguish between pro-IS and anti-IS tweets in the building blocks group, which often contain the same terms when discussing a specific topic. A dictionary-based method in distinguishing the two groups within those who share the building blocks' assumptions would not provide a clear distinction. Let us take the second building blocks, distinguishable from the first building block specifically for the use of a sectarian terminology. An excellent example is term '*Majūsī*' which is used in tweets coded in 70.5% of the tweets carrying a negative sentiment and 29.5% of tweets which were categorised as positive regarding the Sentiment towards the Islamic State. A more precise approach is then to rely on an aggregated method, which provides an estimation of the tweets that express a positive or negative stance towards IS for each of the categories based on the manual coding.

1.5. Preliminary results

As stated in the coding part, I first coded the 5,000 tweets in the category of *Sentiment towards IS* according to the expressed opinion about the terrorist organisation in three categories (*Positive, Neutral, Negative*). I coded 460 tweets in the off-topic category because they do not discuss IS or related topics to train my sample. For example, there are some tweets containing the root of the word terrorist (*includes:* إرهاب), but they do not refer to IS, such as the tweet '*Video: reactions to the targeting of the Saudi Arabia Embassy from the Iran Safawī Terrorism #Abha #Dammam # Buraidah #al-Jouf #Qassim #Jazan*[68]. The tweet defines the Iranian as

68 The original tweet is:
فيديو: ردود الأفعال حول استهداف السفارة #السعودية من إرهاب #إيران الصفوية <video>… #ابها #الدمام #بريدة #الجوف #القصيم #جازان

terrorists and has, therefore, not been included in the analysis of IS sentiment. Besides, there are tweets which contain one of the keywords (*see* appendix 1), but they do not refer to IS (e.g. *Khalīfa for the* family name of the ruling family of Bahrain al-*Khalīfa* 'الخليفة').

The total number of tweets in the training set coded as positive is 12.89% positive, 7,89% neutral, and 79.22% negative. I relied on a plurality of factors to verify the coding of the tweets in the right category. The first and most obvious is the meaning of the contents. The second is to look at the words utilised to refer to the Islamic State (*see figure 1.1.*). In my coding system, the terms *Daesh* (داعش) (*2,362 findings in the training set; 98.5% negative, 0.42% neutral, 1.07% positive*) and those tweets which include the root of the word *terroris-* (*includes:* إرهاب) (*839 findings in the training set, 99.4% negative, 0.1% neutral, 0.5% positive*) were almost always coded as carrying a negative Sentiment. More in general, I utilised the rule that the word '*Daesh*' prevails when other terms are included (*e.g. Islamic State*) for the coding system, except for the cases when it is evident that this term has been included only to exploit the hashtag. This is because '*Daesh'* carries a clearly derogatory meaning[69], which is incompatible with support for the terrorist organisation. Finally, I included in the negative sample also those tweets which employ the term *'Organisation of the State'* (تنظيم الدولة) (*881 findings in the training set; 99.43% negative, 0.45% neutral, 0.12% positive*), often utilised by the media to indicate the Islamic State because it signals a certain distance from the group. I made this choice because I have not distinguished between tweets and re-tweets in my analysis, so my implicit assumption is that those who re-tweet news from mainstream media about the Islamic State (*e.g. BBC; al-Jazeera*) express sympathy with the original tweet. It follows that I consider the act of sharing news from mainstream media to express a negative Sentiment towards IS.

For those tweets which contain the words *'Islamic State'* (دولة إسلامية), which is the official name of the organisation, I had to rely on a plurality of indications to identify the Sentiment. This is because a very large amount of tweets using these two words as a hashtag (*2,045 tweets*) clearly carry a negative Sentiment by utilising them together with words which express a negative Sentiment to gain visibility among a larger set of users (*75,2% of the total tweets which contain '#Islamic_State'*). The expression is often utilised by users and some mainstream media to provide news on the organisation, in the same way, I do so in my dissertation, often in brackets (*142 tweets*). More specifically, I coded as carrying a positive Sentiment towards IS those tweets which contain a link to official media of the terrorist organisation (*e.g. al-Furqan[70], Amaq[71], Isdarat[72], al-*

69 The term is the phonetic acronym based on the Arabic name of the Islamic State (Dawla-Eslamiya-fi-Iraq-wa-Shams). However, it also sounds like the Arabic verb دَعس, which means to tread underfoot or crush.

70 Al-Furqan was a media network of the Islamic State, which included a plurality of propaganda materials. It means something that differentiates between right and wrong.

71 Amaq has been the agency of the Islamic State. It is often utilised by the group to claim responsibility for its attack. Interestingly enough, the news-outlet often utilise a 'neutral-sounding' terminology to indicate an objective stance to the ongoing events. It means in Arabic 'Depths'.

72 Isdarat.tv is a Pro-IS website that hosts the group's videos. The platform was created following the Youtube ban to pro-IS contents.

Hayat[73]), or that were shared by users whose names clearly express a pro-IS stance because they contain a word like '*Caliphate*', '*IS*'. Another indication of positive sentiment towards IS is the use of slogans from the Islamic State organisation (*e.g. the Islamic State remains and expands*[74]) and the suspension of the account[75]. On the contrary, I considered a tweet with this term as carrying a negative sentiment and a link or a re-tweet of a media company (*e.g. al Jazeera, BBC*). This is because no IS supporter would likely share such links without criticising the media outlet. Another indication of negative sentiment among those users who utilise 'Islamic State' in an ironic way can be seen in the example of the tweet '*All you want to know about the #Islamic_State <picture> #Selfie'*[76] which might appear as neutral or even positive for the Islamic State, but it actually refers to the popular Saudi TV comedy programme "Selfie", which often joked about the terrorist organisation in its episodes (al-Turkmani, 2015). For those tweets which I could not include in the positive or negative category but, which nevertheless utilise the words *'Islamic State'*, I decided to code them as 'neutral'. This coding system has provided me with a very wide variety of Sentiment categories when looking at this specific term (*2,552 findings in the training set; 66.3% negative, 12.9% neutral, 20.80% positive)*. Similarly, those tweets which contain the word Caliph-, that refers to Caliphate (*includes*: خلاف) or Caliph (includes: خليف) do not necessarily translate into support for IS (*680 findings in the training set; 40% negative, 3.83% neutral, 56.17% positive*). Despite no-one outside recognising the claim for the Caliphate of the organisation except for those who support it, there are many users who utilise this term in an ironic way in the expression 'Caliphate of Daesh' (الداعش خلافة) (*48 findings in the training set; all negative*) or utilise this term in the hashtag (e.g. *#اخبار_الخلاف 65 findings in the training set; 55.45% negative, 12.30% neutral, 32.35% positive*) to gain a broader audience. An example of the first type of Tweet is '*today, the heroic forces are advancing in battle and they are making the most spectacular tournaments and proving that the time of Daesh's "caliphate" is over in Iraq*[77]'; an example of the second is '*Video and exclusive scenes will be broadcast by Saudi 24 channel about the arresting of Daesh terrorists <video> #State_Organization_ al-Qaeda_ Caliphate news*[78]'.

73 al-Hayat is the Media wing of the Islamic State, which was the main producer of media in the Islamic State propaganda.

74 The Arabic translation of the Islamic motto is: الدولة الإسلامية تمتد وباقية

75 My training set includes a link to the tweet, so I could verify if the account had been suspended in a later phase.

76 The original tweet is: paster.org/r/24/سيلفي #<picture> كل ماتريد معرفته عن #الدولة_الإسلامية

77 The original tweet is:

فيديو ومشاهد حصرية ستبثها قناة 24 سعودي عن القبض على ارهابيين داعش

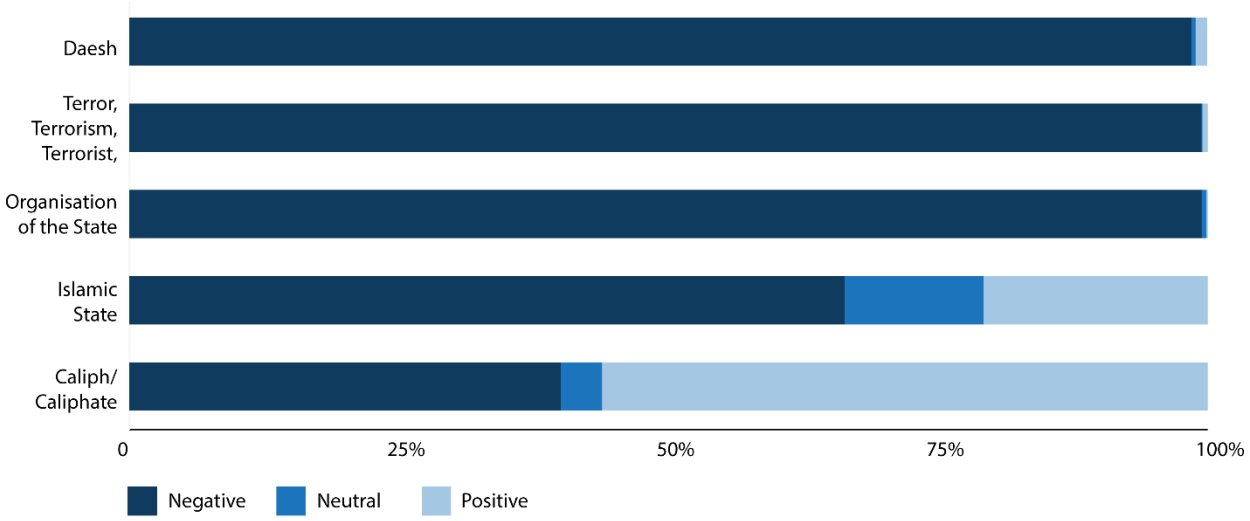
<video>… #تنظيم_الدولة #القاعده #اخبار_الخلافة

78 The original tweet is:

:RT <user>

هاشتاك اليوم يواكب تقدم القوات البطلة في المعارك وهم يسطرون أروع البطولات ويثبتون أن زمن خلافة داعش انتهى في العراق #هلاك_الخلافة

Figure 1.1.: Distribution of Sentiment towards the Islamic State by keywords



1.6. Test set results: Daily interactions and single users per day

The previous section of the chapter revolves around the training set, which is a random sample of 5,000 words from the total of 33.3% of all Tweets which discuss the Islamic State. In the next part, I will analyse in further detail the characteristics of the Test set, which is 33.3% of all Tweets that contain at least one of the words included in the query published between October 2014 and October 2017. When looking at the number of daily interactions, I have an average of 77,786 daily interactions[79] concerning the Islamic State in my three-year sample[80] (*see figure 1.2*). This result is consistent with previous studies on the same topic, with a small difference because of the selected keywords and the implemented methodology. Ceron, Curini and Iacus (2018, p. 16) report an average of about 160,000 daily interactions in the period between June 2014 and January 2015, which is roughly consistent with my average for the second half of this period (123,000). The difference can probably be explained with the selected keywords, which in the case of these authors include some terms broadly referred to terrorism that I did not include, and the filtering which I implemented before creating the test set[81]. For the period between February 2015 and April 2016, I have 57,916 million tweets, which is similar to the 67,834 million tweets reported by Siegel and Tucker (2017). Once taken into consideration the filtering and the differences in the query and the methodology, it is easy to see that there some reasons for the difference

79 In the chapter I report all the results for daily interactions, unique users a day and the difference between these two values multiplied by 3.

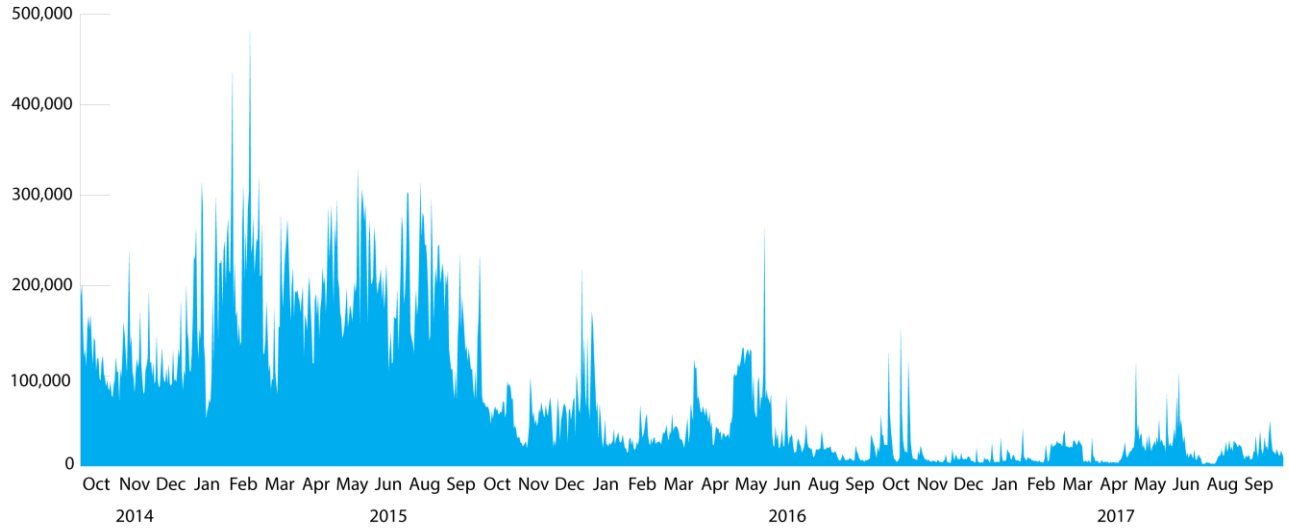
80 As I have mentioned before, I am reporting the number of tweets multiplied by three. This is because my sample from Brandwatch comprises 33.3% of all tweets about IS.

I had a technical issue with the days between the 23rd and the 25th of April, so the number of tweets and daily interactions for these days is the average for the previous and following three days.

81 My filtering of contents related to pornography reduces the total sample of 13.5%. This is roughly 15.000/16.000 daily interactions.

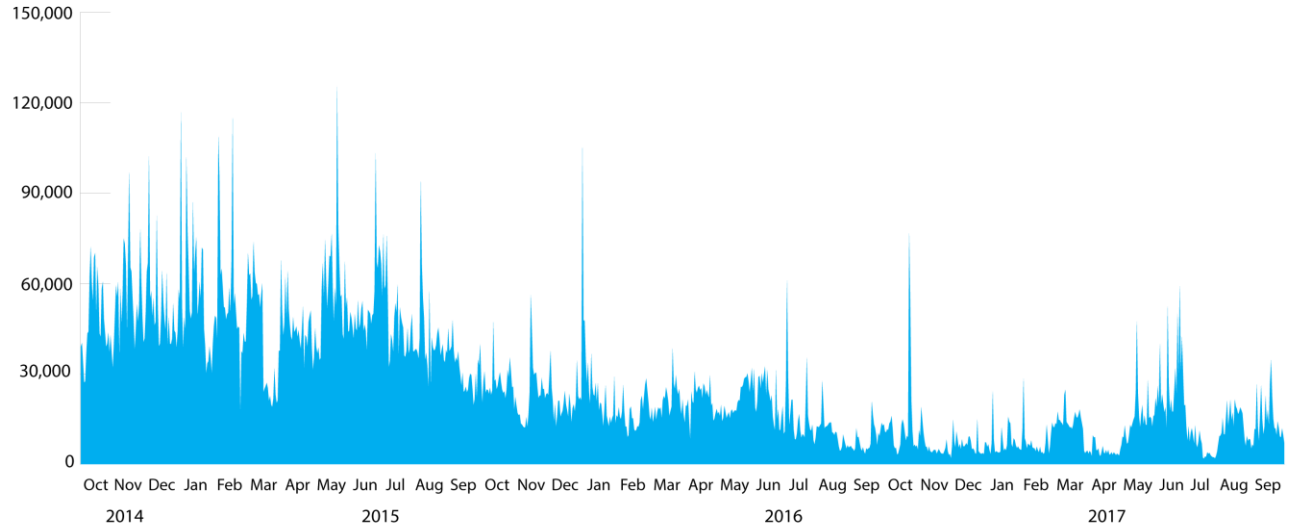
in the numbers. Furthermore, the authors include in their training set some words in the Latin alphabet, like Daesh, which are probably utilised by a plurality of non-Arabic-speaking users, that are not part of my query. The average number of single users per day in my test set is 26,355 a day (*see 4.*).

Figure 1.2.: The number of daily interactions



Another figure which is central to the chapter is that of single users per day. This number refers to the number of unique users who have posted a tweet on the Islamic State on a single day. This provides an indication of the analysed sample to identify those days or period when a smaller number of accounts have published a very large number of tweets.

Figure 1.3.: The number of single users per day



Taking these two results into consideration, an average user has published on average 2.95 contents about the Islamic State in the Arabic-speaking Twitter-sphere about IS.

1.7. Cross-Validation

I discussed the supervised learning method adopted in the research in the previous part. I carried out a K-fold Cross-Validation to test the effectiveness of the model on new uncoded data. The purpose of doing cross-validation is to verify whether my model got most of the patterns from the data correct and thus to ensure that the model does work also for other uncoded data (test set). It is possible that a model only works on the used training set, for example, because it makes predictions based on irrelevant information (*noise*). By repeating the test several times, I verify whether this is the case in my research. There are different ways of carrying out cross-validation. I decided to use a K-Fold Cross-Validation because this method is most suitable for the proposed research, which aims at estimating the proportion of results for categories (*e.g. Positive, negative, neutral, off-topic*) in each classifier (*e.g. Sentiment towards IS*). Furthermore, K-fold Cross-validation is widely used to estimate the prediction error (Kohavi, 1995; Fushiki, 2009). This form of cross-validation entails that the total data set is divided into a K number of sets (*usually 10 or 5*). For the classifier '*Sentiment towards IS'*, I divided into K mutually exclusive subsets (*the folds*) of approximately equal size. I utilized 9 out of 10 folders for the training set and one folder for the test set (*see figure 1.4.*). In each of the ten passages, I took a different folder as the test set. The procedure aims at evaluating how well the model performs with the test set. As stated before, my training set is made of a random sample of tweets extracted from the test set. In other terms, Cross-Validation 'mimics the use of training and test sets by repeatedly training the algorithm *K* times with a fraction 1/*K* of training examples left out for testing purposes' (Bengio, Grandvalet, 2004, p. 1092).

Figure 1.4.: A graphic representation of the 10 K-Fold Cross-Validation

I carried out a K-fold Cross-Validation analysis to measure the mean absolute error (MAE) in my test set. This refers to the average error for each of the (*5 or 10*) tests I carried out. As stated in the methodology section I utilised an aggregated methodology and therefore, my main aim was to estimate the absolute percentage of contents miss-classified in my sample for each category within the three classifiers (*Sentiment towards IS, First Building Block, Second Building block)*. This measure estimates the average percentage of contents which were classified wrongly for each classifier (*Sentiment towards IS, pro-IS and anti-IS in the first building block, pro-IS and IS in the second building block*). In statistical terms, MAE refers to the mean of the absolute values

of each prediction error on all instances of the test-set. The lower the value, the closer the model is to the actual output value. I implemented one 10 K-fold cross-validation for the Sentiment towards IS and a 5 K-fold validation[82] for the first two building blocks. The reason is that the building blocks have fewer coded tweets (*826 for the first building block, 617 for the second building block including the off-topic*) than the Sentiment and to have a 10 K-fold cross-validation would not train the model well enough. The results are the following:

Table 1.1. The Mean Absolute Error (MAE) for each of the Sentiment towards IS and the building blocks

Classifiers	**Mean Absolute Error (MAE)**
Sentiment towards IS	0.0146
First building block	0.0446
Second Building block	0.0678

The measured MAE indicates that the model provides a solid prediction of the uncoded contents. For the Sentiment towards IS, the value indicates the mean percentage of error in the analysed training set, which is 1.4%. I have a relatively higher MAE for the two building blocks, but I do not consider it to be particularly problematic for my research. This is because I consider the estimate regarding hostility to IS in the building blocks as an indication of the ideological continuity with the Islamic State, not a precise measure of the ideological continuity with IS ideology.

1.8. Pro-Islamic state discourse. Genuine support or effective propaganda?

The average positive Sentiment towards IS in the analysed sample is 15.59%. This percentage represents the ratio between the percentage of positive and negative tweets following the estimation through the iSA methodology. This value rises to 18.47% when considering the weighted average for the number of daily interactions, 22.89% when weighted for the number of unique users per day. Finally, it accounts for 15.23%

82 I carried out an analysis with 5 folders because I have a more limited number of contents in these two categories (363 for the first building block and 157 for the second building block). This provides a better estimate. Furthermore, I utilised these two categories to provide a general estimate of the ideological continuity with IS ideology. I will explain this point in the next part of the chapter.

for those days when a high activity is recorded (*300,000 daily interactions*), and it drops to 15.03% for the days where many users join the discourse (*100,000 single users per day*). At first sight, my figures might appear quite high when compared to other studies on support for the Islamic State in the Arab world performed outside the Arabic-speaking Twitter community. For example, the Arab Centre for Research and Policy Studies (ACRPS) inquired into the support for IS in seven Arab countries (*Tunisia, Egypt, Palestine, Jordan, Saudi Arabia, Lebanon, and Iraq*) and among Syrian refugees on November 2014[83]. Despite being arguably the most successful period for IS in terms of military victory, respondents who showed some degree of sympathy for the organisation made up only 11% of the total, compared with 36.37% for the same period in my sample (*October-November 2014*). I contend that there are many reasons for this difference. The first is that social media arguably allow users to express their opinions with more sincerity than polls or focus groups, especially in relation to sensitive topics like IS. Jamal and al. (2015) correctly point out that social media enable individuals to express their views in public in a relatively safe way. This is also because they allow users to choose a nickname and, therefore, to express opinions anonymously. Additionally, some researchers suggest that social media data are likely to be less affected by social desirability than polling data (DiGrazia and al., 2013). Furthermore, Twitter allows users to publish a potentially infinite number of daily interactions, so it is reasonable to assume that the most committed users are likely to be also the most prolific ones, without mentioning bots. Finally, it is important always to bear in mind that the tested tweets include only those contents produced by accounts whose users decided to share their opinion about IS for one reason or another.

When looking at the positive sentiment towards IS, my results are not that different compared to other studies on the Twitter-sphere about the Islamic State, with a slightly higher percentage of pro-IS feeling. The average percentage of pro-IS tweets in the analysis of Ceron, Curini and Iacus (2018), who utilised the same database and algorithm for the machine learning as my study in analysing the period between July 2014 and January 2015, is 25.1%, My percentage for the period between October 2014 and January 2015 is 34.38%. The difference of 9.28% can probably be explained by the different period of analysis, which does not include the months from June 2014 to September 2014, and some differences in the keywords of the query. For example, one of the terms which I included and which was not among the keywords of these authors is '*Caliphate*' which comprises tweets that mostly carry a positive sentiment. Similarly to the previous papers, I accounted for a higher percentage of pro-IS tweets between October 2014 and April 2015 (26.62%) compared to those of Bodine-Baron, Helmus, Magnuson, and Winkelman (2016) who found 19.31% of positive tweets in the period. This is likely because Brandwatch allows me to collect tweets which had been erased by Twitter. More in details, Brandwatch downloads in streaming the 33,3% of tweets which discusses about IS. This official

83 the Arab Centre for Research and Policy Studies (ACRPS) interviewed 600 respondents in seven Arab countries (*Tunisia, Egypt, Palestine, Jordan, Saudi Arabia, Lebanon and Iraq*) and 900 Syrian refugees in equal proportion between groups in Lebanon, Jordan and Turkey on a wide set of issues related to politics in the Arab world. The details on the research methodology and the full results are available here: Arab Center for Research and Policy Studies (2014) 'The Military Campaign against the Islamic State in Iraq and the Levant: Arab Public Opinion', November 2014. Available at: https://www.dohainstitute.org/en/lists/ACRPS-PDFDocumentLibrary/Arab_Public_Opinion_on_ISIL_and_the_Coalition_against_ISIL_the_Full_Report.pdf (Accessed: 24 June 2019).

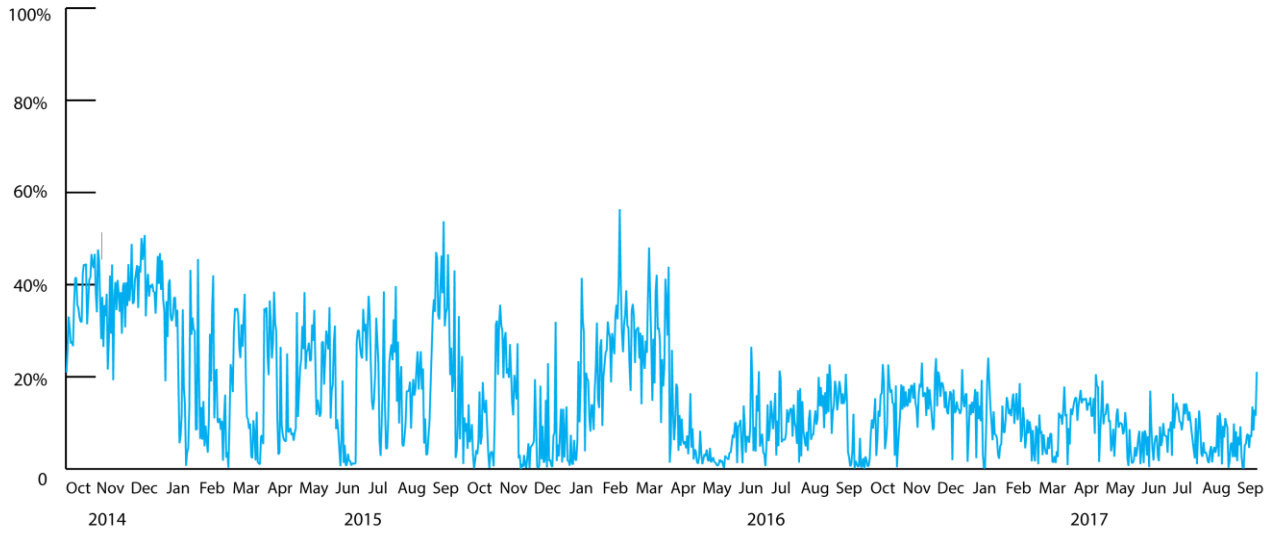
firehouse dealing with Twitter downloads contents in real-time, meaning that it includes those tweet which were shortly after censored by the platform or erased by the users. I believe this specific feature provides a more compelling indication of pro-IS tweets. Another reason for such difference is that I have included the word *'Caliph'* and the name of al-Baghdadi in my query, which carries a positive Sentiment towards IS in many of my tweets. Finally, I also observed a slightly higher percentage of positive tweets when comparing my analysis with that of the study of Siegel and Tucker (2017) for the period between February 2015 and April 2016. In their chapter, they measure 13.9% of positive sentiment towards the Islamic State compared to 17.58% of my sample in the same period. The difference of 3.68% is probably linked with the keywords of the database and the software Brandwatch. Differently to the two authors, my dataset includes only terms in the Arabic alphabet. Their sample also contains popular words transliterated from Arabic to the Latin alphabet (*e.g. Daesh, Daish, Da'ish*). Some of these words have probably been utilised also by a non-Arabic-speaking audience, *(e.g. Daesh*) to express a negative Sentiment towards the Islamic State. This element might also suggest that there is higher support for the terrorist organisation in the Arabic-speaking community. Furthermore, there are some differences in the set of Arabic words. I included two terms often utilised by pro-IS members: '*Caliph*' (خليفة) and '*Abū Bakr al-Baghdādī'* (أبو بكر البغدادي) which were not included in their sample.

There are some recurrent characteristics which provide indications about the composition of the pro-IS sample. The first is that the training set contains a plurality of tweets that are repeated in several accounts without any significant changes. For example, in my random sample of 5,000 tweets, I found as many as 14 times the following tweet (in exactly this formulation):'*before deletion: 15 movies on the #Islamic State which have terrorised the world <link> #The_Sons_and_Daughters_of_Saudi_Arabia_State_in_a_Good_Condition <picture>*[84]. Interestingly enough, a plurality of users with a very similar name repeated these tweets. This element is coherent with two recurrent arguments in the literature about the IS propaganda strategy on Twitter. The first is that the terrorist organisation has widely utilised bots (Moriarty, 2015). There are some records that the Caliphate has even created an App, the '*dawn of glad tidings'*, to post its propaganda tweets on personal users' accounts (Farwell, 2014, p. 52). As Klausen (2015, p. 2) correctly points out, the terrorist organisation utilises bots to 'give the illusion of authenticity, as a spontaneous activity of a generation accustomed to using cell phones for self-publication to generate the illusion of wide support'. Despite not accounting for the total number of bots, I have reasons to believe that part of the pro-IS contents, like that of the example, are bots which were created by IS propaganda machines. The second is that some pro-IS accounts have very similar names. It has been recorded that some IS and pro-IS users created multiple backup accounts (Berger and Morgan, 2015, p. 41) to overcome the problem of censorship. The reason to adopt a similar name is to be easily found by the previous followers once reappearing on Twitter. The tweet: *'#Islamic_State #IS follow my account*

84 The original tweet is:
نشط <link> فيلم ل(#الدولة_الإسلامية) ارعبت العالم15قبل الحذف <picture>
#ابناء_وبنات_السعوديه_فيهم_خير

number 26. Plz support my 26th acct—an image from my previous account. Image from my prev acct pic.Twitter.com/n70tipP6rY[85]' confirms the existence of many backup accounts in the pro-IS sample.

Figure 1.5.: Daily pattern for the positive sentiment towards IS



When looking at the time distribution of the support for the Islamic State, it is possible to spot a clearly decreasing, yet irregular, pattern for the analysed period. Support for IS seems to partially follow the same pattern for the daily interactions and users, which both decrease from mid-2016. This is even more evident when looking at the difference between the daily interactions and single users per day. This means that on average, an account publishes about 2.95 daily interactions.

85 The original tweet is:
RT <user>: #الدولة_الإسلامية
#IS

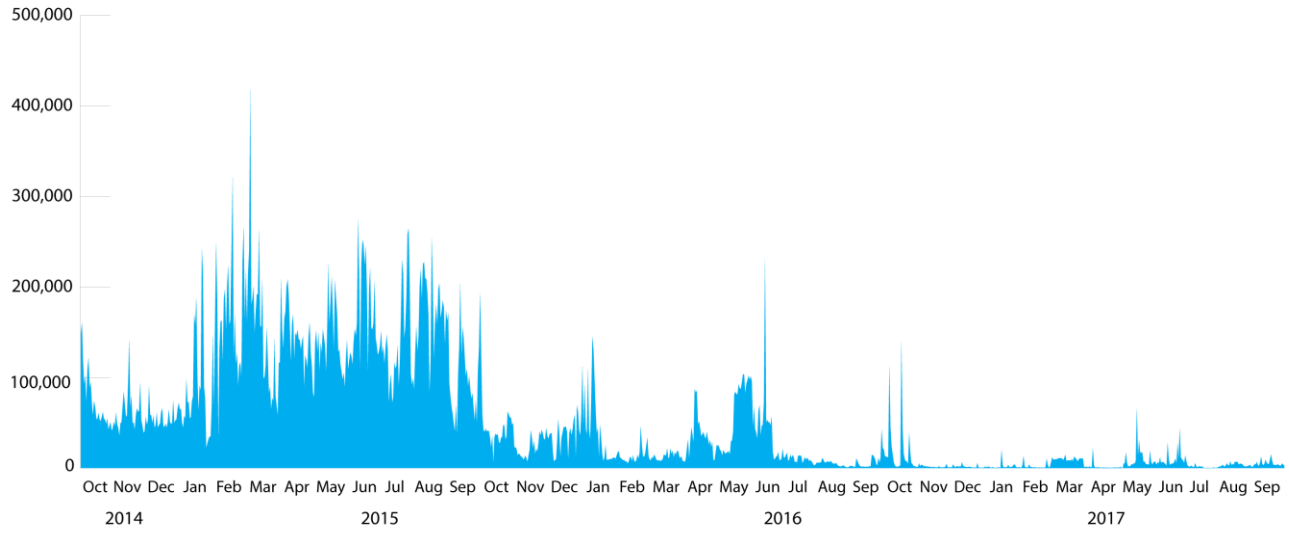
Plz support my 26th acct

Image from my prev acct pic. <picture>

الرجاء دعم حسابي رقم 26

صورة من حسابي السابق

Figure 1.6.: The difference between the number of daily interactions and single users per day



However, these graphics seem to contradict the finding that the pro-IS Sentiment increases when the percentage is weighted for daily interactions (18.47%) and single users per day (22.89%) in the total test set. To correctly interpret this finding, it is useful to look at the difference in the daily interactions for the three periods of peak, decline and defeat:

Peak: *69,937 difference between average daily interactions and single users per day (122,668 average daily interactions, 52,731 single users per day)*

Decline: *150,969 difference between average daily interactions and single users per day (200,779 average daily interactions, 49,180 single users per day)*

Defeat: *19,706 difference between average daily interactions and single users per day (42,645 average daily interactions, 16,680 single users per day)*

When weighting the support for the Islamic State and the difference between average daily interactions and single users per day in the three periods, we obtain the following figures:

Peak: *30.67% weighted average for the positive Sentiment towards IS compared to 34.38% for the average Sentiment in the same period.*

Decline: *17.92% weighted average for the positive Sentiment towards IS compared to 17.71% for the average Sentiment in the same period.*

Defeat: *13.20% weighted average for the positive Sentiment towards IS compared to 12.18% for the average Sentiment in the same period.*

When combining these findings with the overall decrease in support for IS in this period, it is possible to interpret better the characteristics of the pro-IS discourse on Twitter in the analysed period. The first is that the IS propaganda machine and its supporters seem to have been initially more active than anti-IS users on Twitter in the first period (*peak*). The difference between the average support for IS and that weighted for the difference suggests that they have produced more tweets than the anti-IS users. This is consistent with Bodine-Baron, Helmus, Magnuson, and Winkelman (2016, p. 3) who measure that an average pro-IS account produced 50 per cent more daily interactions than the anti-IS accounts in the period between October 2014 and April 2015. Furthermore, the findings confirm the analysis of Berger and Morgan (2015), who estimated the number of pro-IS Tweets to be approximately 46,000 in October-November 2014. When weighing it for the percentage of support for IS in the two months (*36.58% in October 2014; 35.74% in November 2014*) I have 37,355 pro-IS unique users (56,511 *pro-IS users in October 2014;* 47,373 *pro-IS in November 2014*), which is quite close to the 46,000 of the two authors, especially when considering that pro-IS tweets are more active than anti-IS users.

There are a variety of reasons for the Islamic State supporters to be very active and constant in tweeting in the early period. The first and the most obvious is that IS had no other ways to inform its supporters apart from social media. The second is that the terrorist organisation aimed at reaching possible sympathisers by spreading its messages as often and as far as possible. One of the adopted strategies was to hijack 'Twitter storms' incorporating high-trending hashtags in their own tweets, which include a link to Islamic State material hosted on an anonymous, unpoliced platform such as JustPaste.it' (Atwan, 2015, p. 10). There are many Tweets which clearly utilise this strategy in my training set. One very illustrative example is the tweet *'RT <user> Photo of a group of Islamic State mujahideen in the countryside of Suwayda in the barracks of Nuṣayrī. #Governatorate_of_Damascus #ISIS #al-Hilal_Persepolis #Damascus #ISIS <picture>*[86]*'*. The hashtag *#al-Hilal_ Persepolis* was designed for those who were interested in the quarter-finals between the Saudi and Persian teams in the AFC Champions League but IS supporters clearly exploited it for very different reasons. The third is that most of the pro-IS users were deeply involved in the conversation, while others joined the discussion only in concomitance with some specific events which gained a wide resonance. For example, a user mostly interested in football might decide to express his negative opinion about the Islamic State only when the terrorist organisation carries out a gross crime or a deadly terrorist attack.

These dynamics seem to have changed in the second period (*decline*) when the difference between the average (17.71%) and weighted average (17.92%) of pro-IS tweets disappeared. I cannot be sure whether this change is due to pro-IS accounts leaving the platform or users switching from a pro-IS to an anti-IS stand, but I believe that it was mostly due to pro-IS accounts abandoning Twitter. This is because the average number of single

86
The original Tweet is:

RT <user> : صور لرباط مجاهدي #الدولة_الإسلامية بقرى ريف السويداء على ثكنات النصيرية #ولاية_دمشق #داعش #الهلال_بيروزي #دمشق #ISIS <picture>

users per day decreased by 4,000 between February 2015 and July 2015 (*49,180 compared to 52,731 in the precedent period*) which indicate that fewer accounts were involved in the daily discussion. This might be a strong indication that the Twitter censorship closed many pro-IS accounts or that some pro-IS users might have decided to leave the platform. Moreover, the decrease in the number of unique users is on a parallel with a rise in daily interactions, which have increased from *122,668 to 200,779.* According to the previous discussion, this should have translated in higher support for IS. On the contrary, the support for the group also sharply decreased from 34.38% to 17.71%. In other words, it seems that the decline of the pro-IS sentiment was not mostly due to new users joining the conversation but linked with pro-IS users leaving the platform. We can also hypothesize that a wider percentage of these tweets was due to a set of pro-Saudi anti-IS accounts which greatly contributed to the anti-IS discourse on Twitter. I will discuss this issue in further detail in part regarding the anti-IS discourse.

The last period (*defeat)* provides an indication of both the resilience of the pro-IS network and the loss of interest from Arabic-speaking accounts on the issue. Fewer users *(16,680)* published fewer contents *(42,645 average daily interactions)* about the terrorist organisation. Support for IS in this period dropped to 12.18% with an increase to 13.20% for the average weighted for the difference between single users per day and daily interactions. This indicates that the issue became less relevant for the wider Arabic-speaking Twitter community, while a small core of supporters (3,000-5,000) did not abandon the platform and voiced their support especially on those days when more users voiced their opinions. This indicates how the group substantially lost its battle for the mind and heart of the wider Arabic-speaking community, but it maintained a certain degree of support. Finally, these figures explain the reasons for higher support for IS when weighting it for the average daily interactions. This is mostly because there is a wide disproportion between the number of contents published in the first two periods and the third. In other words, the fact that there is higher support for IS in the first part of my test set reflects this difference between the average support and that weighted for the interactions.

1.8.1. The main topics of the pro-IS discourse

The previous analysis suggests that the pro-IS tweets in my sample comprise a heterogeneous combination of IS-generated propaganda, real users who express support for the terrorist organisation, and bots. Drawing from the categories of Ingram (2014) on the propaganda of IS, I analysed the most recurrent topics. I coded each of the pro-IS tweets in my training set according to the most recurrent topics. The first is *'broadcasting military success*', which includes 47.91% of the total tweets in the training set. Most of these tweets have the objective of sharing and celebrating the war victories of the Islamic state. The first and most self-evident reason for IS to share its military power is to terrorise its '*enemies*', by showing that the group might be lower in numbers, but it might nevertheless be capable of defeating them on the ground. The second reason is to gain support among *'possible sympathisers'.* This is an essential goal for the Islamic State, which is competing with other Jihadist organisations for supremacy in the Jihadist field. To achieve this goal, IS and its supporters utilise

images and messages which carry a strong symbolic value for members of these ideological groups. The theme of victory is a recurrent topic in both the Jihadist and Islamist discourses. Halverson, Goodal and Corman (2011) call it the *myth of the battle of Badr*, which refers to a Quranic battle between a small group of Muslims and a much larger plurality of enemies at the very beginning of Islam. This myth 'serves as a powerful lesson for all Muslims to be firm in their faith through trials and adversity, even in the face of seemingly impossible odds or certain death' (2011, p. 58). Islamic State propaganda devotes much effort to framing its actions as blessed by God, and its day-to-day victories are often presented as signs of God's benevolence towards the group. One example is the tweet *'Glory be to Allah who has in this hand strength, pride and victory!. The lions of Islamic State rely on the glory of God. They won the battle against the Nuṣayrī in the airport of Deir Azor*[87]*'* More precisely the idea that God is with the Islamic State can be found in 10.85% of all Tweets coded in the pro-IS category. Furthermore, it is interesting to point out that not all tweets in the pro-IS sample implemented a sectarian terminology, but they also utilise more neutral terms in referring to enemies. In particular, those tweets which are published with the hashtag #Amaq_Agency, the Islamic State news agency, often utilise a neutral terminology. An example is the Tweet *'#Amaq_Agency. #Urgent. Destroying 3 tanks and disabling the fourth for forces of the Syrian regime during an attack by the Islamic State fighters in the proximity of the airport #al-Turf #Homs*[88]. This lexical choice aims at giving the illusion of objectivity to the general Twitter public.

The second most popular content among pro-IS tweets is that of '*marketing the Caliphate'* (30.55% *of the total tweets in the training set*). These are contents which mostly aim to inform the Arabic-speaking Twitter audience on the actions and achievements of the Islamic State (18.87%) and defending its religious legitimacy (11.68%). Their objective is to strengthen the morale of its *supporters* and counter the international media discourse about IS. There are several reasons for IS to share these materials. The first is that the terrorist organisation does not have access to mainstream media and therefore, it must rely only on social media to spread its propaganda inside and outside its core base. In many cases, IS propaganda contents contain links to materials published on Youtube, al-Hayat, al-Furqan or Isdarat and other platforms. An example is the tweet: '*website that combines deleted #Islamic State publications<isradat.tv> #Win_ Samsung Galaxy Note5 _with_Jarir_ # Tweet something that benefits you after your death <picture>*[89]. Another popular topic of the IS propaganda revolves around its activities within the territories it has controlled. The contents which share the state-like activities represent 19.78% of the total tweets coded in the pro-IS category. My aim is to demonstrate that IS is a legitimate state by providing information on its state-like activities in the controlled

87 The original tweet is:
سبحان من بيده القوة والعِزة والنصر أسود الدولة الإسلامية معتمدين على الله سبحانه يفتكون بالنصيرية #مطار_ديرالزور_العسكري

88 The original tweet is:
RT <user> وكالة أعماق: #عاجل تدمير 3 دبابات وإعطاب رابعة لقوات النظام السوري خلال هجوم لمقاتلي الدولة الإسلامية في محيط مطار #التيفور#حمص

89 The original tweet is:
موقع يجمع إصدارات #الدولة_الإسلامية المحذوفة [isdarat.tv] #اربح_نوت5_مع_جرير #غرد_بشي_ينفعك_بعد_موتك <picture>

territories. An example is the tweet '*Media office of the #Willayat_al_Jazeera presents: Charity and Zakat*[90] *office provides financial grants to the poor <link> #Islamic_State*[91]. To present the IS organisation as a proper state is a central element in the propaganda of the terrorist group, which links again to the claim of the Caliphate. Any credible statement of the Islamic State to be a Caliphate would be void without controlling a portion of the territory. More specifically, 12.57% of all tweets coded in the category of *'marketing the Caliphate'* describes the state-like functions performed by the Islamic State (*58.33% revolves around the provision of services, 41.67% focuses on the territorial control of the state).* This discourse targets both *'supporters'* and *'possible sympathisers'* and it aims at convincing them that the Islamic State is powerful and that it is fulfilling its promise of creating a state based on the Islamic law. In this respect, it is central for IS to refute the argumentations of its '*opposers/enemies'* that the group is actually against the principle of Islam. An example of a tweet which defends the '*religious legitimacy'* of the alleged Caliphate is the tweet: *'those who observe well the current events in the world are very aware of the promise of the Prophet, peace be upon him, succession to the platform of the prophecy and its meaning. #Islamic_Caliphate*[92]. The third most recurrent topic of IS propaganda is that of '*attracting an audience'*. This includes all those tweets which express generic support to IS as an organisation (*16.19% of the total tweets in the training set*). When looking at those contents in detail, it is clear that some are generated by the IS propaganda machine while others are probably published from committed users. I do not have enough evidence to distinguish between these two groups, but I noticed that IS propaganda tweets often have a repetitive scheme (*hashtag with the name of the region, name of the media office, content, link, hashtags including 'Islamic State' or 'Caliphate'*). Two examples of tweets probably published by the IS propaganda machine are *'RT <user> #Wilayah_alkhayr #Media_Office present #"From_Darkness_to_Light". to Download <picture> #Islamic_State <link>*[93]*'* or *'RT <user> #Global_Campaign_ to_Support_for_The_Islamic_state*[94]*'.*The last example shows another feature of the IS propaganda, which is to illustrate that the organisation is highly popular in the Arabic-speaking Twitter community. IS-propaganda linked accounts often ask supporters to share public statements of sympathy for the organisation to increase their reach beyond its '*supporters'* to *'possible sympathisers'*. IS does not differ

90 Zakat is the religious obligation for Muslims to donate part of their wealth. This is based on possession, and it is customary the 2.5% of a Muslim total saving above a certain threshold.

91 The original Tweet is:

ال المكتب الإعلامي لـ #ولاية_الجزيرة يقدم ديوان الزكاة والصدقات يمنح الفقراء والمساكين منحة مالية
الدولة_الإسلامية# 7 <link> …

92 The original tweet is:

من يتمعن جيدا في الأحداث الحالية في العالم سيدرك جيدا وعد الرسول صلى الله عليه و سلم "خلافة على منهاج النبوة " و معناها
#الخلافة_الإسلامية

93 The original tweet is:

RT <user> ولاية_الخير #المكتب_الإعلامي يقدم #جديد #من_الظلمات_إلي_النور
<link>… #الدولة_الإسلامية <picture>

94 The original tweet is:

RT <user>: الحملة_العالمية_لنصرة_الدولة_الإسلامية#

from other political organisations, which aim at demonstrating to be popular on social media to gain new followers. This strategy is commonly called 'bandwagon effect'. The 'bandwagon effect' is a very well-studied mechanism in social psychology (Goidel and Shields, 1994) which has also been applied to Social Media studies, including the Twitter communication strategy of IS (Galloway, 2016). This term 'denotes a phenomenon of public opinion impinging upon itself: In their political preferences and positions people tend to join what they perceive to be existing or expected majorities or dominant positions in society' (Schmitt-Beck, 2015). The second reason to obtain public statements of support from supporters is to defend the claim that the IS is fighting for the entire Muslim community by showing that the Arab Sunnīs back the organisation. This type of argument can be found in 15.84% of the total pro-IS contents. An example is the tweet *'#Announcement. The joy of Sunnī is now flooded in Street 100 in #Ramadi. They shake hands and hug their sons in the Islamic State and offer drink and food to them*[95]*'*. Demonstrating wide popular support in the community also aims at reinforcing the IS claims to be a legitimate Caliphate. Such a statement would be void without a large constituency which recognises this political and religious authority.The last category of tweets, which does not draw from the Ingram (2014) categorisation, but was nevertheless recurrent in my sample, is that of '*victimisation'.* The topic has been identified in a study of Heck (2017) as one of the three recurrent themes in Dabiq, and it refers to the idea that Muslims are 'victims' and therefore have the right to defend themselves. These tweets comprise 5.70% of the total. An example is the tweet *'they sent De Mistura to Damascus to stop any fighting between the rebels and Assad, especially in Aleppo. All of this within the scheme drawn by the Crusaders alliance to fight the Islamic State'*[96]. These tweets often refer to conspiracy theories suggesting that major international powers, from Iran to the United States, are conspiring against Islam in general and the Islamic State in particular, which is a long-standing theme in Jihadism (Brachman, 2009, p. 82) This argument is functional to the definition of Jihād of IS in a global perspective and to stress once again that all those who do not belong to the group should be defined as enemies. Schwartz, and al. (2009, p. 541) who analyse terrorism from an identity theory perspective, correctly observe that 'terrorism requires having divided people into two categories: those whose interests are to be advanced through terrorist activities ("*us*") and those against whom the terrorist activities are to be directed ("*them*"). In the Jihadist propaganda, this type of argument has been often complemented with reference to a religious-coloured discourse which links to an apocalyptic prediction of a war between Muslims and their enemies which will precede the end of the days, as I explained in the introduction. This propaganda strategy also links to a recurrent characteristic in terrorist organisations, which is to present their fight within the framework of '*us*' versus '*them*'. This concept is well summarised in a quote from Post (1990, p. 25), who describes this recurrent discourse of the terrorist

95 The original tweet is:

#عاجل
فرحة تغمر أهل السنة الآن في شارع 100 #الرمادي ومصافحة وعناق لأبنائهم في #الدولة_الإسلامية وتقديم الطعام والشراب لهم

96 The original tweet is:

<user> :RT أرسلوا ديمستورا إلى الشام ليوقف أي قتال بين المعارضة وبشار خاصة في حلب.
هذا كله ضمن المخطط الذي رسمه التحالف الصليبي

لقتال الدولة الإسلامية

organisations as follows: *'They', the establishment, are the source of all evil in vivid contrast to 'us', the freedom fighters, consumed by righteous rage. And, if 'they' are the source of 'our' problems, it follows ineluctably in the special psycho-logic of the terrorist, that 'they' must be destroyed.*

.

1.9. 'IS is wrong, but…': A study of ideological continuity towards IS

The previous part of the chapter has presented the main themes of Islamic State propaganda. However, I define the Arabic-speaking Twitter-sphere regarding the Islamic State as a field where different discourses compete for gaining support among users. In particular, I draw from the observations that IS shares some elements of continuity with other ideologies, and that the organisation entered the Twitter-sphere in 2014 when many other discourses already existed, and that it has adapted these messages to appeal specific audiences. More specifically, I define Islamism and Salafism as the two ideologies which have the strongest degree of ideological proximity with IS and its members as the main targets of IS propaganda. Once again, it is worth pointing out that I do not consider sharing some ideological elements to translate in support for the organisation in most cases. To provide an estimation of the tweets which express a certain degree of ideological continuity with IS ideology, I have looked at two central elements of IS ideology, namely '*enemies are hostile towards Islam and the Sunnī community'* and '*the fight between the Sunnīs and its enemies is of a religious nature'.* I have discussed in detail the reason for this choice in my introduction, but I state that these are the two elements which are likely to be shared outside IS support group. Within these two categories, I coded each tweet in two ways. For the first building block, I first accounted for the definition of the targets of hostility, which are *'Islam or Sunnī Muslims'*(*64.58% of all tweets coded in the First Building Block*) and '*IS as Defensor of Muslims'* (*35.42% of all tweets coded in the First Building Block*). For the second building block, I included the three identified enemies, which are *'IS as apostate'* (29.93%), '*Shīʿa*' (41.40%), and '*infidels*' (28.97%). Second, I distinguished each building block in the pro-IS or anti-IS categories to estimate the percentage of tweets which express ideological continuity (*42.40% pro-IS and 57.60% anti-IS in the first building block: 61.24% pro-IS and 38.76% anti-IS in the second building block*). To appreciate the difference between these two groups, let us consider an example of anti-IS and pro-IS tweets from the first building block and the second building block.

These examples show that some pro-IS and anti-IS contents share three recurrent elements of ideological continuity: the first is the idea that Iran and its allies are hostile to the Sunnī community. This assumption draws from an anti-Iranian hostility in part of the Arab Sunnī world which is strictly linked to the current geopolitical rivalry between Iran and Saudi Arabia (Nasr, 2006; Salloukh, 2013, p. 35-49). This hostility was reinforced in 2003, when violence erupted in Iraq (Haddad, 2011, p. 143-199) and is widely shared also in the Salafi and, to a lesser extent, in the Islamist camp. Another element of continuity is that both pro-IS and anti-IS tweets often utilise a sectarian terminology to define Iran and its allies. The book *'The New Sectarianism'* by Abdo (2017) provides a glimpse on the sectarian discourse from the Salafi Twitter, by showing that many influential Salafis who have politically opposed to the Islamic State utilise this type of derogatory terminology. This author correctly points out that 'the terms Salafists use to describe the Shīʿa are almost invariably sectarian

in nature, describing these foes as infidels – that is, non-Muslims' (Abdo, 2017, p .69). Over the last years, the sectarian discourse has overcome the Twitter-sphere and has entered the political debate. Haddad (2014, p. 161) reports that in the Iraqi contests of 2012-2013 'the line separating anti-Shīʿa from anti-Iranian sentiment became thinner than ever'. Some users have gone even further to argue that IS has been created by Iran (*9.77% of all coded tweets*) to destabilise neighbouring countries or divide the Sunnī Ummah. Finally, the discourse of Salafists, Islamists and the Islamic State appeal to the same constituency in my sample, which is the Arabic-speaking Sunnī community. IS proclamation of the Caliphate has been translated into a claim for the political and religious leadership of the entire Sunnī community, which is an open challenge to some of the states of the region, in particular, Saudi Arabia. This country has often utilised the title of 'Custodian of the two holy mosques' as one of their primary titles. 'Custodian of the two holy mosques' refers officially to the responsibility of guarding and maintaining the two holiest sites of Islam: the al-Haram mosque in Mecca and the Prophets' mosque in Medina. However, the title carries a broader meaning for the entire Arab-Sunnī community, which is the indication of a certain degree of symbolic religious authority for Saudi Arabia among other Sunnī-majority states. This symbolic authority has been utilised by Saudi Arabia to strengthen its regional leadership.

Drawing from these three observations, I estimate the percentage of tweets which express an ideological continuity with IS to be 4.66% *(% of Tweets coded in the first building block in the anti-IS group <57.60%> weighted for the proportion of Tweets coded in the category of Support for the first building block in the Training Set <368 tweets> divided for all tweets when excluding off-topic<4,543>*). Within this group, I estimated a sub-set of interactions which show a higher degree of ideological proximity, namely those who support the idea that the hostility towards the Islamic State is based on religious motivations. As I explained in the previous part, this is a key element of IS ideology. I estimate the percentage of this second group to be 1.34% *(% of Tweets coded in the second building block in the anti-IS group weighted for the proportion of Tweets coded in the category of Support for the first building block <38.76%> in the Training Set <158 tweets> divided for all tweets when excluding off-topic <4,543>*). When looking at the time evolution of the anti-IS sample, they provide a very similar pattern in the analysed period. These elements indicate that the percentage of those who support the idea of hostility against Muslims is often accompanied by a steady share of sectarian discourses.

Figure 1.7.: The evolution of the daily pattern for the anti-IS Tweets within the First Building block

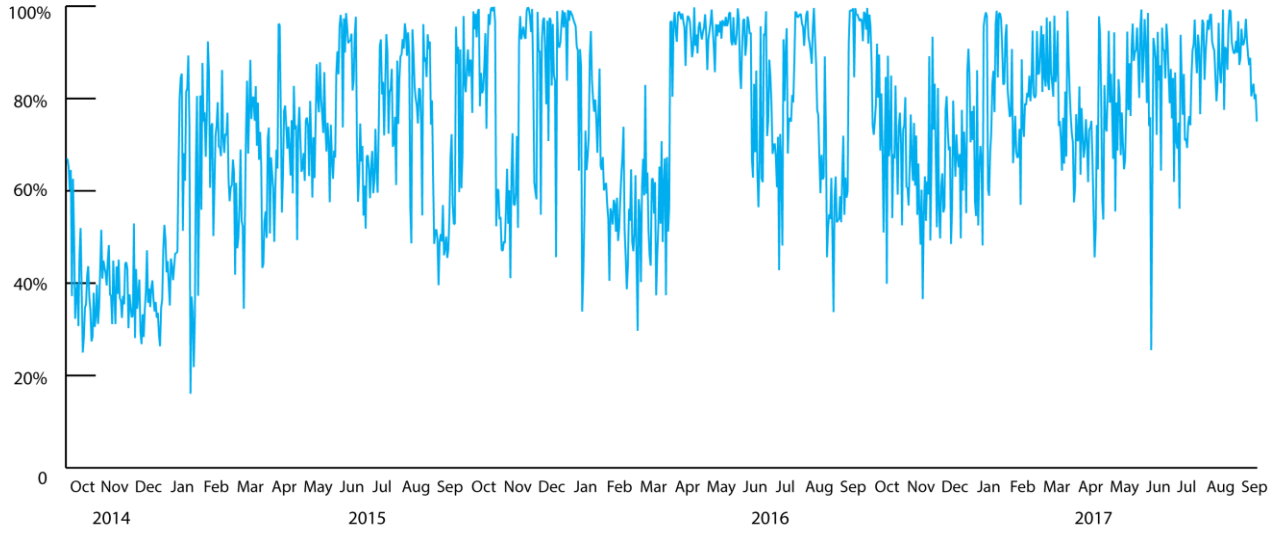
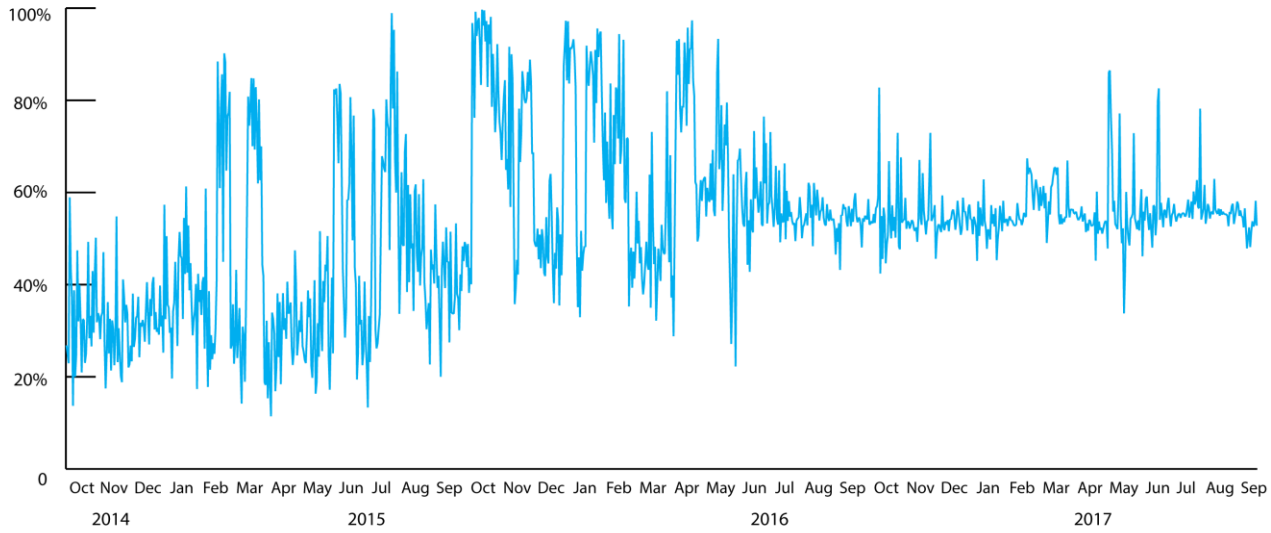


Figure 1.8.: The evolution of the daily pattern for the anti-IS Tweets within the Second Building block



Finally, I account for two additional building blocks defining IS ideology, which are: '*Jihād is an individual duty for all Muslims'* (*41.2% of the total pro-IS tweets in the training set*) and '*the Caliphate represents the only example of rightful Islamic State'* (*14.87% of the total pro-IS tweets in the training set*). For these two building blocks, I did not distinguish between the pro-IS and anti-IS for the fact that all contents which contain

these two ideas are pro-IS because of the implemented query[97]. Furthermore, the third building block is the core idea which defines Jihadism (*third building block*), while the fourth is shared only by those who support IS in the analysed period (*fourth building block).*In particular, I claim that believing that Jihād is an individual duty is the element that distinguishes Jihadists from mainstream Arab Sunnī Muslims. Jihadists argue that every Muslim should engage in Jihād when the Sunnī community is in danger. I have discussed this element in detail in the introduction, but it is worth recalling that the idea of Jihād as an individual duty for all Sunnī Muslims is the main theological innovation of al-Qāʿida, and it does represent the watershed between Jihadism on one side and Islamism and Salafism on the other. In other words, al-Qāʿida defines *jihād* not 'just as a tactic or strategy', but 'as a theological imperative, binding on all Muslims' (Gregg, 2010, p. 300) and Jihadist groups can be broadly defined as all those who agree with this statement, including IS. When defining the target of the Islamic State Jihād in the pro-IS tweets, some contents do not refer to them with a particular religious connotation (27.12%), while others identify them as Apostate (11.74%), Shīʿa (46.55%) or Infidels (14.57%).

The idea that the Caliphate is the only rightful expression of the Islamic State is another element which defines a full ideological commitment to the dogma of this terrorist organisation in my sample. Despite many Salafis and some Islamists agreeing on the idea that the Caliphate is the best example of government, these groups define the creation of the Caliphate more as an abstract aspiration than a concrete reality. For example, the transnational Salafi non-violent group Hizb al-Tahrir calls for the unification of all Muslim countries into a single Caliphate, but it does not actively engage in the creation of this new political order (Karagiannis and Mc Cauley, 2006). al-Qāʿida has also aspired to create a Caliphate, but it was rather ambiguous on the topic (McCants, 2015, p. 129). al-Qāʿida leaders have often argued that the time to proclaim a Caliphate has yet to come. In this sense, the leadership and supporters of this terrorist organisation have strongly criticised the IS proclamation of the Caliphate as illegitimate. On the contrary, the Islamic State propaganda devotes much effort to presenting the alleged Caliphate as legitimate state authority. The two main themes which IS has utilised in this discourse regard advertising the provision of welfare services (35.22%) and the territorial control (64.78%).

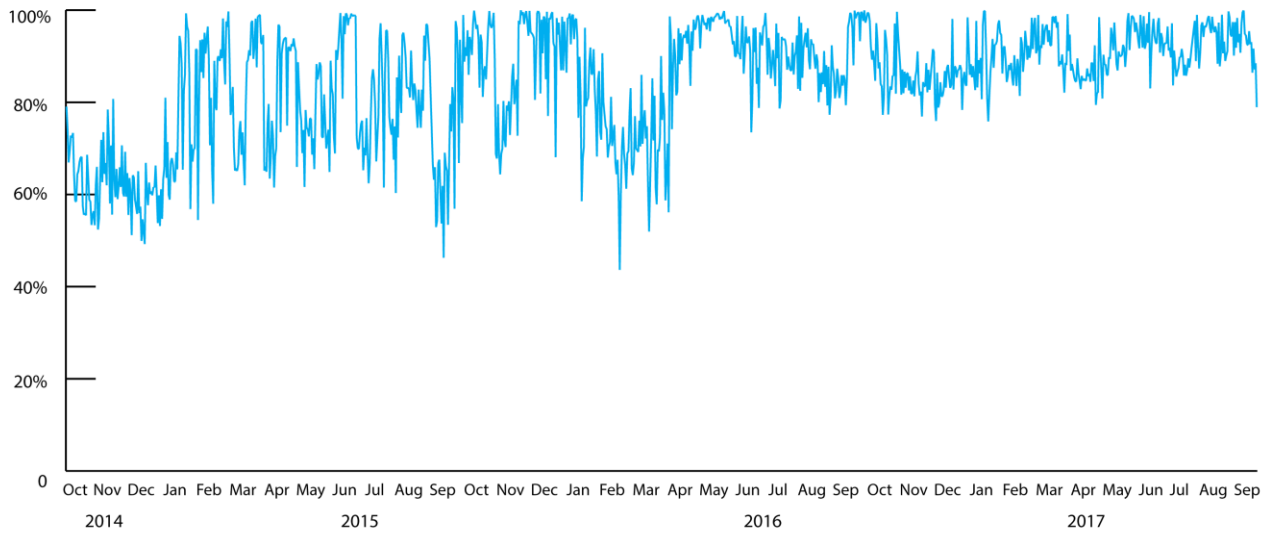
1.10. Those who oppose. The main characteristics of the anti-IS discourse

The average percentage for the negative Sentiment toward the Islamic State is 84.41% of the total tweets *(the ratio between % of positive tweets over the sum of % of positive and negative tweets*). This value decreases to 81.53% when considering the weighted average, and it accounts for 81.71% on those days when a high activity is recorded (*more than 300,000 daily interactions*). As explained in the section on the positive Sentiment towards IS, the percentage is not that different from those of other authors who have studied this topic, with a slightly lower average percentage for the anti-IS tweets because of the difference in the query. When looking

97 There are also other jihadist groups which share the third building block with IS, but they are not included in my theoretical approach because all my keywords revolve around IS.

at time distribution of the tweets, it is evident that there has been an increase in the period, as can be seen in this graph (*see figure 1.9.*):

Figure 1.9.: The evolution of the daily pattern for negative Sentiment towards IS



1.10.1. The main topics of the anti-IS discourse

Unlike the pro-IS tweets, the anti-IS sample is comprised of a plurality of accounts which differ in their ideological orientation but share a negative opinion on IS. The only available study which looks at the anti-IS discourse on Twitter is that of Bodine-Baron, Helmus, Magnuson, and Winkelman (2016, p. 12), that highlights how the Sunnī community 'is highly fractured in comparison with other meta-communities, and resonant themes are very different within the various Arabic-speaking Sunnī sub-communities and appear to align with different Middle East nation-states'. These authors, who prevalently focus on the network analysis of these online community, identify seven communities which broadly overlap with the regional states (*Gulf Security Council, Saudi Arabia, Egypt, Tunisia, Yemen, Libya, Jordan).* They also add a Shīʿa community which contrasts the Islamic State by referring to 'Islamic-historical terms, and by linking it with Saudi Arabia' (Bodine-Baron and al., 2016, p. 16). This study confirms an observation in coding the anti-IS tweets, which is that there is no single unified strategy for a large sample of users but a plurality of argumentations against IS. Obviously, I was unable to determine the ideological stance of each user, but some observations can be made by looking at the recurrent themes implemented in opposing the Islamic State.

I identified five recurrent themes to determine the main topics of the anti-IS discourse: '*information*', '*victory and arrest*', '*crimes and atrocities*', *'hostility'*, and '*religious illegitimacy'*. The most popular topic is that of *'information'*, which comprises 35.17% of the entire anti-Tweet sample. This group includes both those tweets which share information about the Islamic State from mainstream media and those which furnish

interpretations of current events. Some of these interpretations refer to news from mainstream media, while others refer to conspiracy theories, especially about Iran. As mentioned before, a large percentage of users in the anti-IS discourse argue that IS has been created by Iran[98] to destabilise other states or to divide the Sunnī community (*11.46% of all tweets coded in the topic category of 'information'*). In some cases, this concept is expressed by users with specific hashtags, like '#Daesh_is_a_product_of_Iran_and_Russia' (#داعش_صناعة_ايران_وروسيا) at the end of their tweets. An example of this type of tweet is *'Sheikh Nabil al-Awadhi exposes the terrorism of Daesh with pieces of evidence from the Quran … <link> #Daesh_is_a_product of Iran and Russia*[99]'. while an example for the second type is '*does the (Islamic) state organisation participate in the Safawī plan with or without knowledge? <link>*[100]*'*. A smaller percentage of users also refer to the creation of IS by accusing Saudi Arabia (*0.71% of all tweets coded in the topic category of 'information'*), the US or Israel (*1.51% of all tweets coded in the topic category of 'information'*) There is a set of tweets that accuses the West and Iran together of being behind IS (*1.35% of all tweets coded in the topic category of 'information'*).

The topic of '*victories and arrests*', which is the second most popular, comprises 34.80% of the total anti-IS tweets. These tweets express the idea that the Islamic State is losing ground because of the actions of its enemies. These contents comprise both the victories against IS and the arrests of its members. An example of the first category is the tweet: 'RT *<user> fast progress of the #joint_forces and the collapse of the terrorist defences #Daesh in the centre of #Ramadi area <picture>*[101]. One example of a tweet which links the reduction of IS capability to cause harm to major arrests is the following: *'<video> a statement of the Ministry of Interior on the arrest of terrorists from #Daesh in #Riyadh and #Dammam #Supporters #Jabhat_al_Nusra*[102]. When looking more specifically at the tweets included in this category, it seems that they comprise a plurality of contents from a wide range of sources. The first source is that of retweets from mainstream media or other users who highlight the weakening, military losses or arrests of IS. For my dissertation, I consider these tweets to be an endorsement for the shared contents. The second is tweets which clearly celebrate the defeats of IS. Ordinary Arabic-speaking users are fearful of losing their lives and often cheer for the success of counter-

98 Some tweets include the idea that Iran has cooperated with Russia in the creation of the Islamic State. I have not accounted for this idea separately from that of Iran being behind IS because Russia has worked with Iran in the Arab region and so users do not see a clear distinction between these two states.

99 The original tweet is:
داعش_صناعة_ايران_وروسيا <video> الشيخ نبيل العوضي يفضح إرهاب داعش بالدليل من القرآن

100 The original tweet is:
وهل تنظيم الدولة يشارك في المخطط الصفوي بعلم او بدون علم !؟
#العراق <link>

101 The original tweet is:
<user> RT: تقدم سريع #للقوات_المشتركة وانهيار دفاعات ارهابيي #داعش في محاور #الرمادي <picture>

102 The original tweet is:
<video> بيان وزارة الداخلية السعودية بشأن القبض على عناصر ارهابية من #داعش بـ #الرياض و #الدمام #المناصرون #جبهة_النصرة

terrorism operations. It is worth mentioning once again that Arabic-speaking Sunnīs are considered a legitimate target by IS, because it considers those who do not belong to the organisation as also being outside the Muslim community (Maggiolini and Plebani, 2015). Attacks which have probably included casualties among the Sunnīs have been very high in the last years. According to the Global Terrorism Index of 2015, around 43% of all victims of terrorist attacks were in Iraq, Syria, Yemen and Pakistan.A considerable percentage of tweets (12.01%) accuses IS for its '*crimes and atrocities*'. The cruel actions of IS were widely condemned by a large section of the global public opinion, including the Arabic-speaking one. In particular, there are some indications in my sample that the crimes against other Arab Sunnīs have increased the negative Sentiment towards IS on Twitter. The average percentage of negative Sentiment on the day after an attack involving mostly Sunnī victims is 0.58% higher than the average figure for negative sentiment in the entire sample. This is confirmed by the research of Tucker and Siege (2017, p. 12) on the same topic, which analyses a shorter time period without looking specifically at the attack against Sunnīs, and which shows that the highest percentage of anti-IS Tweets were registered in the aftermath of the assassination of the Jordan pilot. The finding is also consistent with a common theme of social psychology, that of in-group solidarity (e.g. Markovsky, Lawler, 1994) which underlines that people normally feel a higher degree of solidarity with those with whom they feel they have an affinity. I will discuss this issue in further detail in the second chapter.

Finally, there are some tweets which express a '*generic hostility'* about the organisation that cannot be categorised in the previous group. These contents make up 10.78% of the total tweets and a small percentage of tweets (7.24%) which point at the religious illegitimacy of IS. An example is this tweet: '*Daesh terrorists take its name from Islam and terrorism from the West. #Daesh_and_Iran_against_the_Saudi*[103]*'*. This typology of argument draws from common critiques from a plurality of Muslim scholars who have published many declarations about the incompatibility between Islam and the Islamic State ideology[104]. A very compelling example can be seen in the publication of al-Yaqoubi (2016) *'Refuting IS'*, that provides a list of reasons for defining the group as anti-Islamic, from the atrocities committed to the proclamation of the Caliphate, from the excommunication (*takfīr*) of Muslim masses to the seeking of an alliance with non-Muslim powers. However, I was able to find a reasonable number of users who share religious lessons from leading Islamic scholars who criticise the Islamic State.

Together with the study of the most recurrent topics, I assessed a vast network of pro-Saudi Tweets which have had a wide impact on the overall anti-IS discourse. To assess the percentage of pro-Saudi tweets, I coded all those tweets which express support for Saudi Arabia for political or religious reasons. The percentage of these tweets is 25.48% in the total anti-IS sample. There are many possible reasons for this very large percentage. The first is the composition of the Arabic-speaking Twitter-sphere, where the users from Saudi

103 The original tweet is:

داعش الارهابيين اخذوا من الاسلام اسمه ومن الغرب ارهابه #داعش_وايران_علنا_ضد_السعودية

104 A comprehensive list of condemnations from Muslim institutions or associations of the IS:
Islamic Networks Group (ING) (2015) 'A comprehensive List of Condemnations from Muslim institutions or Associations of the IS'. Available at: https://ing.org/global-condemnations-of-isis-isil/ (Accessed: 24 June 2019).

Arabia are overrepresented in comparison to the Arab population. The Arab Social Media (2017) reports that 29% of the Arabic-speaking Twitter users are from Saudi Arabia (*7.94% of the total Arab Total population*) and an additional 20% (*5.39% of the total Arab Population*) are from the five states of the Persian Gulf (*United Arab Emirates, Qatar, Bahrein, Oman, Kuwait*). The second is that the issue of IS has been central for part of the pro-Saudi users, following the proclamation of the Caliphate. IS' announcement of the Caliphate in June 2014 was in open defiance to the symbolic leadership which Saudi Arabia gained after the collapse of the Ottoman Empire. The al-Saud dynasty has often utilised the title of 'Custodian of the two holy mosques' as one of their primary titles, as stated in the previous part. Finally, I was able to clearly notice that, in many cases, the same tweet was repeated many times with different accounts. I did not carry out a specific analysis on this issue, but this element might indicate that this country has extensively utilised bots. The question might be better researched in the future.

1.11. Conclusions

My chapter aims to provide three main contributions. The first is to offer a measurement of the sentiment towards IS for a longer time-period than similar studies, which include the period of decline of the Islamic State. The second is to implement a methodology for measuring the ideological continuity on Twitter by relying on the building block theory, which can be potentially used also by other studies. The third is to provide a systematic study of the most recurrent topics in both the pro-IS and the anti-IS in the Arabic-speaking Twitter-sphere with regard to IS. My conclusion focuses on summarizing some of the findings regarding these three aims of my analysis, and on introducing some lines of research which will be analysed in further detail in the next chapter.

Starting from the first contribution of my chapter, which is to assess the *Sentiment towards IS* for a three-year period, I observed that the pro-IS Sentiment sharply declined in the three-year period. When looking at the data in more detail, I saw a relatively high percentage of pro-IS tweets for the months between October 2014 and January 2015 (34.38%), a slight decline from February 2015 to July 2015 (17.71%), and a sharp decrease in the pro-IS Sentiment from September 2015 to September 2017 (12.18%). Drawing from the previous analysis which shows that *'broadcasting military success'* was the most common topic in the pro-IS sample, it is highly possible that the IS propaganda machine and its supporters had a hard time in justifying the terrorist organisation's defeats. The analysis will be carried out with a statistic methodology in the next chapter.

With regard to the sentiment towards IS, I was also here able to observe an overall decrease in the sample starting from January 2015. This decrease does not correspond with the average number of single users per day and interactions in the Twitter-sphere about IS in the three-year period, which decreased only from autumn 2015. I cannot prove that this is mostly due to new users joining the conversation, old users changing ideas or pro-IS users leaving the platform because my methodology does not allow me to identify the ideological preferences of each account. However, there are some good reasons for believing that it was mostly because of pro-IS users leaving the platform due to the steadily declining number of single users per day which I

observed in the period of the peak and that of the decline which goes along with an increase in the interactions. In other words, the decline does not seem to be linked mostly with new anti-IS users joining the platform, but with pro-IS accounts no longer being present in the conversation. This is consistent with the fact that Twitter implemented an effective censorship of contents related to terrorism, which has targeted an increasing number of pro-IS accounts from March 2015. The platform does not provide the total numbers of censored tweets, but there are some reports that the number has reached a few thousand in the analysed period[105].

Finally, my analysis shows that the pro-IS discourse did not disappear from Twitter in the last period, but it still comprised 12.18% of the total tweet in the 'defeat' period. This is a very small percentage, especially when considering that of a heavily reduced sample of interactions in the last part of the test set (*16,944 average daily interactions when considering only the year 2017*). This element indicates that the propaganda of the group has proved to be resilient to Twitter censorship and its military losses. It further indicates that there is still a network of pro-IS users, yet very much reduced, on Twitter and that the appeal of the group has not completely faded away in the analysed period and probably still at the time of writing (*June 2019*). This is particularly worrying when considering that it is enough to have a very small group of committed terrorists to carry out deadly attacks, as the recent story of IS has shown.

When looking at the category of *ideological continuity*, my analysis shows that there is a limited, nevertheless still existing, the percentage of users who express a certain degree of proximity to IS ideology. This finding links to the risk that the terrorist groups might still find a support base in the future for their ideas by exploiting the sense of grievance for the alleged enemies of the Sunnī community. This element also points to the fact that there might be a potentially supportive base which can be exploited by new terrorist organisations in the future. This also correlates to the importance of not just limiting the action against pro-IS Twitter discourse to censorship, but also implementing an effective counter-narrative for addressing its narrative (Schmid, 2011). This counter-narrative might be more effective if not focusing exclusively on delegitimising the organisation, but also on addressing the assumption that there is an ongoing war against Sunnīs and Islam. This element might not be limited to the Twitter-sphere, but also to the general policies against radicalisation, as those groups which share these types of conviction might provide the breeding ground for terrorist organisations to emerge. Finally, I believe that to agree with the first or the second building block could be interpreted as a very early sign of alarm, which might (*while in most-cases does not*) lead to a process of radicalisation.

When looking at the anti-IS discourse, it seems clear that the topics of those who have opposed this organisation in the Arabic-speaking world slightly differ from those implemented in the West. It follows that any effective counter-narrative strategy should be tailored to the context. For example, the Arabic-speaking

105 As stated before, Twitter does not provide a number of the banned pro-IS tweets, but the total number of accounts which were banned because they have shared contents related to the terrorism worldwide. The number is 1.2 million from August 2015 to December 2017:

Twitter (2018) 'Twitter Transparency Report'. Available at: https://blog.Twitter.com/official/en_us/topics/company/2018/Twitter-transparency-report-12.html (Accessed: 28 June 2019).

discourse of those who have opposed IS on Twitter does not seem to attribute as much centrality to the category of *crimes* as in the West and also the discourse about the *religious legitimacy* of the group seems to have been mostly limited to the intellectual debate. Another finding is that of the ambiguous role of the pro-Saudi network. On the one hand, this constitutes the main group which has contributed to the anti-IS discourse (*12.40% of all tweets coded in the anti-IS group*), on the other they are among those who have rendered the sectarian discourse more acceptable on social media, mostly when referring to the Shīʿa. These elements point to a tension between the need to engage this country for implementing an effective counter-terrorism strategy in the Arabic-speaking community, and the risk of relying too much on this state in addressing the root-causes for the current Jihadist movement.

Chapter Two: The Determinants of Support for the Islamic State

'Do not think the war that we are waging is the Islamic State's war alone. Rather, it is the Muslims' war altogether. It is the war of every Muslim in every place, and the Islamic State is merely the spearhead in this war. It is but the war of the people of faith against the people of disbelief' (Abu Bakr al-Baghdadi cited in Saul, 2015)

In October 2014 the black banners of the Caliphate were marching towards Kobane/Ayn al-Arab. The siege of the city became the decisive battle for the supremacy of the North of Syria, as the Kurdish forces engaged in a fierce battle to stop IS expansion. In Iraq, IS fighters were in control of most the northern area of the country, including the region of Sinjar, one of the most multi-faith areas of the country. The terrorist group was committed to carrying out a systematic eradication of any non-Muslim presence. Yazidis[106], Christians[107] and Shabak[108], who had lived in this area for centuries, were either forced to flee, or were captured, killed or enslaved. The images of the exodus from their homes, their tales of arbitrary killing and detention, and reports of the slave markets for Yazidi girls (The Guardian, 2015) were sparking outrage in the international community. Everything had changed in September 2017. The yellow banners of the US-supported Kurdish forces and their allies were almost entirely in control of the unofficial capital of the alleged Caliphate: Raqqa (Aljazeera, 2017). The following conquest of the city marked the failure of IS' state-like project, and the beginning of a new political phase characterised by the end of territorial control for the Jihadist organisation and its engagement in clandestine guerrilla warfare. In Iraq, the region of Sinjar was already in the full control of the Iraqi government, and some of the survivors from IS' attempted genocide (United Nations, 2016; European Parliament, 2016) were slowly returning home. Analysts were discussing the end of IS' territorial control and the images and video of Raqqa's liberation from IS after more than four years of its brutal regime.

106 Yazidism is an ethno-religious group. Historically, members of this community have lived in Syria, Iraq and Turkey. Their religious beliefs combine some elements of monotheism with some elements of pre-Islamic religion. IS considered this group to be polytheist and Satanist, because of its theological views. According to this religious community, the world was created by one God, who entrusted it to seven holy beings. The prominent being among these seven is Melek Taus (the peacock angel). Although the Yazidi religious worldview cannot be fully disclosed to non-Yazidis, one of the stories reported about Melek Taus, is that he refused to bow to Adam. The same behaviour is attributed to Iblis, the fallen angel of Islamic tradition, who is often identified with Satan. The presence of these seven beings and the story of Melek Taus has led some Muslim scholars to consider them polytheist and Satanists. IS goes along with this interpretation, and thus arguing that they could be enslaved.

107 Christians of Iraq belong to different denominations, both Catholic and Orthodox. Despite some theological differences, they all believe in the main principles of Christianity, as stated in the Gospel. They are mostly located in the Sinjar and Baghdad area.

108 Shabakism is the name attributed to the beliefs and practices of the Shabak people of Iraq. They include their beliefs within the wider group of Shiism, but some elements of their beliefs are closer to Sufis (e.g. the Quran has a deeper meaning than its literal interpretation).

The following chapter looks at this long-time period (*October 2014 - September 2017*), when many changes occurred for IS political development and the composition of the Arabic-speaking Twitter-sphere about IS. More specifically, the chapter aims at analysing the determinants of support for the terrorist organisation during the three-year period. The study relies on the same dataset of 32 million and 700 thousand tweets about the Islamic State of the previous chapter. Drawing from this dataset, I extracted 28 million and 418 thousand tweets (*33.3% of all tweets which discuss IS*) to estimate the percentage of support for/opposition to the Islamic State and its ideology on a daily basis by utilising a machine learning methodology that relies on the iSA algorithm. To assess the impact of events in the real world and the composition of the Arabic-speaking Twitter-sphere about IS, I coded fourteen determinants for each day of the analysis. These determinants can be broadly divided into three groups. The first refers to military events (*major military victories of IS* (*same day*)*; major military victories of IS* (*following day*)*; major military losses of IS* (*same day*); and *major military losses of IS* (*following day*). The second looks at the impact of major terrorist attacks and crimes in connection to the targets of the attack (*attacks and crimes against Sunnī targets* (*same day*)*; attacks and crimes against Sunnī targets* (*following day*)*; attacks and crimes against Shīʿa targets* (*same day*)*; attacks and crimes against Shīʿa targets* (*following day*)*; attacks and crimes against non-Muslim targets* (*same day*)*; attacks and crimes against non-Muslim targets* (*following day*). The third refers to changes in the Arabic-speaking Twitter-sphere about the Islamic State in terms of the composition of the sample (*daily interactions; single users per day; censorship; lagged positive*). I coded four of these determinants as continuous (*daily interactions; single users per day; censorship; lagged positive*) and ten of these determinants as categorical determinants (*censorship; attacks and crimes against Sunnī targets* (*same day*)*; attacks and crimes against Sunnī targets* (*following day*)*; attacks and crimes against Shīʿa targets* (*same day*)*; attacks and crimes against Shīʿa targets* (*following day*)*; attacks and crimes against non-Muslim targets* (*same day*)*; attacks and crimes against non-Muslim targets* (*following day*)*; major military victories of IS* (*same day*)*; major military victories of IS* (*following day*)*; major military losses of IS* (*same day*); and *major military losses of IS* (*following day*). To assess the effect of each determinant, I have carried a linear regression to measure their impact on sentiments about the Islamic State for the entire period and each phase of IS political development (*peak, decline, defeat*). The chapter is organised as follows: the first part provides a historical analysis from the rise to the defeat of IS by highlighting the main elements that characterised its political history to identify the five main phases of its political development. The second provides a literature review on the topic. The third introduces the interpretative framework of the chapter. The fourth explains in detail each of the determinants by discussing the reasons for expecting each of them to have an impact on the community and the expected influence for each of the audiences (*'supporters'; possible sympathisers'; 'opposers/enemies'*). The fifth discusses the findings in relation to the listed hypotheses in the dissertation and the reasons for the differences and similarities in the influence of determinants on the positive sentiment towards IS from a phase to another.

2.1. From peak to defeat: IS actions and the Arabic-speaking Twitter-sphere

The present chapter looks at the political development of the Islamic State by dividing its political evolution into five phases (*origin, rise, peak, decline, defeat*) and tests the discourse about IS on Twitter in those of *'peak', 'decline'*, and *'defeat'*. To understand better the characteristics of each phase and the turning points from one phase to another, I provide a brief explanation of the IS political development to look at the cause of IS rise to power and political crisis, as well as the main features of IS policy for each phase.

IS puts down ideological roots in the general political phenomenon of Jihadism, which dates back to the war between the Soviet Union and Afghanistan in the '80s, which later became al-Qāʿida in the '90s (Declich, 2017). It was in the late '90s that some ideologists of this organisation started to discuss the idea of establishing a limited territorial control over a specific area to establish a Caliphate (Fishman, 2016). The project was put on paper by a senior member of al-Qāʿida, Sayf al-Adl, who sketched a plan to reach this goal by 2016 (Fishman 2016, p. 52-56). Within this context, the official origin of the organisation which became IS should be traced back to the Sunnī and Islamist militancy in the north of Iraq before the American interventions, as noted by Mabon and Royle (2017, p. 101), 'irredentism, ethnic and sectarian tensions, social cleavages and political suspicions had long existed within Iraq's borders. These tendencies were further exacerbated by the dramatic decrease in economic conditions of the country, hit by a severe budget crisis'. Former Iraqi President Saddam Hussein tried to cope with the difficult situation by promoting a new state ideology, called "return to faith" (*Hamla al-'Imaniyya*) 'to strengthen its power legitimacy in spite of economic crisis and low national morale, by evoking Islamic values under the country's duress' (Mabon and Royle, 2017, p. 102). This new political environment favoured the emergence of Islamist and Salafi interpretations of Islam in the Sunnī community of Iraq (Weiss and Hassan, 2014, p. 44). In the early 2000s al-Qāʿida set foot in Iraq, when the Jihadi group of Jund al-Islam established its rule in a limited area of the Kurdish Autonomous Region, where Jihadist fighters imposed a Taliban-style underground rule to the local population (Weiss and Hassan, 2015, p. 36). Following the American intervention in Iraq of 2003, the emergence of a new cultural, religious and political environment and the effects of the long economic crisis[109] were among the main causes for the emergence of an insurgent group in the Sunnī part of Iraq. The emergence of armed groups in the Sunnī area of Iraq was further intensified because of some controversial choices made by the Coalition Provisional Authority (CPA) in the aftermath of the Iraqi war in 2003. In particular, the CPA declared the formerly ruling Ba'ath party illegal by banning all members and dissolving the army. As noted by Tripp (2007, p. 282), this decision 'put some 300,000-armed young men out of work at a stroke, stopped the pensions of tens of thousands of ex-officers and purged the slowly recovering government ministries of roughly 30,000 people'. Some of them joined the ranks of the Sunnī insurgency, which emerged as 'a melting pot of disaffected former soldiers, tribal members, Islamists – both local and foreign – Baathists' (Mabon and Royle, 2017, p. 106).

109 the severity of the Iraqi economic crisis can be seen simply by comparing the GDP in 1999 (179.9 billion Dollars) to that of 2004 (36.63 Billion Dollars). It is important to state that no data are available between 1990-2003, as these figures were kept secret by the Saddam regime. (*Source: World Bank*)

The origin phase of IS can be placed in the late part of 2004, when the al-Qāʿida branch in Iraq started acting as a semi-autonomous group under al-Zarqāwī leadership. He was the al-Qāʿida Emir in Iraq but, in reality, he turned into the semi-autonomous leader for the local Jihadist insurgents. In the years between 2005 and 2006, al-Zarqāwī engaged in a fierce debate with the transnational leadership of al-Qāʿida. The main divisive issue was that al-Zarqāwī prioritised the fight against the near enemies, namely Shīʿī, while Bin Laden and al-Ẓawāhirī believed that the main battle was that against the Western states (Ẓawāhirī, 2013)[110] and despised the genocidal method of al-Zarqāwī in Iraq. As Weiss and Hassan (2015, p. 52), correctly point out, 'the al-Zarqāwī prescription was to prompt a civil war between Sunnis and Shīʿa by attacking the latter in their "religious, political, and military depth". This plan had been already drawn in the previous year by one of the most influential ideologists of Jihadism, Abu Bakr al-Naji, who wrote the Management of Savagery' in 2004, in which he argues that Jihadist 'must exhaust their enemies through protracted violence, destroy established social and political hierarchies with brutal attacks on military and civilian targets, and thereby create "areas of savagery" that will allow them to build "Islamic" political systems' (Fishman, 2016, p. 57). The killing of Zarqāwī in 2006 and the Petraeus-led surge in 2007-2008, which benefitted from Sunnī disenchantment with the *de-facto* al-Qāʿida leadership of the local insurgency, marked the starting point for a progressive decline of al-Qāʿida in Iraq. The Jihadi group, now renamed ISI (Islamic State of Iraq), faced a long period of crisis under the leadership of Abū Ayyūb al-Maṣrī (2006-2010). During the first year of the leadership of Abu Bakr al-Baghdādī, the future Caliph of the organisation focused on strengthening the organisation by including several former leading figures of the Saddam period (Weiss and Hassan, 2014, p. 140), The outbreak of the Syrian war in 2011-2012, as well as the change in the regional order which followed the Arab spring (Trentin, 2017) offered ISI an opportunity to re-emerge from its ashes.

The phase of rising for ISI started in September 2013, when the terrorist group joined the fighting against al-Assad (Zelin, 2013)[111]. The rise of the terrorist organisation emerged in a context of fragmentation and competition between local powers for regional hegemony, as the US increasingly disengaged from the region and some states tried to benefit from the power vacuum (Trentin, 2017). During the entire political history of IS, the main rivalry has counterposed three main factions, with small changes over time: Iran and its allies (Syria, Iraq, and some militias like the Houthi and Hezbollah), Saudi Arabia and its allies (most of gulf states

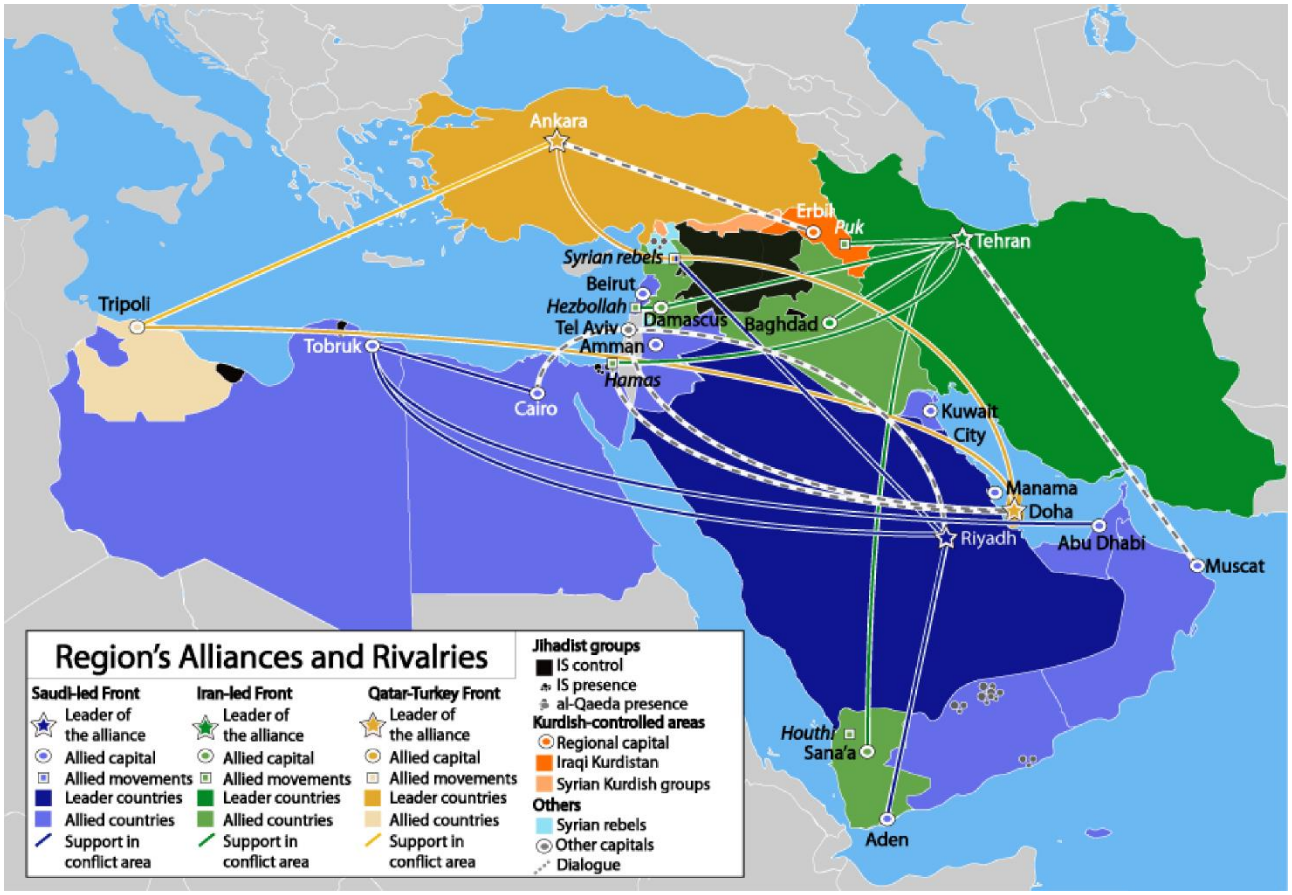
110 To understand the discussion between the al-Qāʿida leadership and al-Zarqāwī, it is useful to refer to a letter which al-Zawahiri sent to al-Zarqāwī on the 9th of June 2005. In this letter, it is possible to read some critiques of al-Qāʿida leadership regarding the policy of al-Zarqāwī in Iraq, in particular, its attacks against Shīʿa civilians. Namely, this sentence clearly states that for the global leadership, the struggle against Shīʿa came after the global war against the West.
The sectarian and chauvinistic factor, it is secondary in importance to outside aggression and is much weaker.
'أما العنصر الطائفي والتعصبي فهو تال في الأهمية للغزو الخارجي، وأضعف منه بكثير، وفي رأيي القاصر الذي أراه'

Translation available at: Zawairi A. (2013) 'Letter to al-Zarqawi', *United States Military Academy*. Available at: https://ctc.usma.edu/app/uploads/2013/10/Zawahiris-Letter-to-Zarqawi-Translation.pdf (Accessed: 1 July 2019).

111 Zelin, A. (2013) 'Al-Qaeda in Syria: A Closer Look at ISIS (Part I)', *The Washington Institute*, 10 September. Available at: https://www.washingtoninstitute.org/policy-analysis/view/al-qaeda-in-syria-a-closer-look-at-isis-part-i (Accessed: 1 August 2019).

and Egypt), and Turkey and Qatar. These political powers have refrained from direct confrontation, but they have been involved to a different degree in the conflicts of Iraq, Syria, Yemen and Libya. As Trentin (2017, p. 193-195) correctly points out, this contraposition has acquired an ideological connotation, which is that of sponsoring types of political Islam as a political model for the state of the region. Namely, Saudi Arabia and Gulf Countries have been the main sponsors of Salafi-inspired conservatism: Qatar and Turkey promoted the Islamism of the Muslim Brotherhood, while Iran has tried to co-opt Shīʿa groups across the region by promoting its symbolical leadership outside its natural territory. In this context of proxy war, there were some social groups which felt excluded from power-sharing, such as Sunni in Iraq and Syria, Houthi in Yemen and the population of the east of Libya. IS benefited from the marginalisation of some of these groups, namely Sunni in Iraq and Syria, to build up its power base.

Figure 2.1. The main regional alliances and rivalries at IS peak (Mid-2015)



IS gradually gained influence in rebel-held Syrian cities, towns and villages. In a few months, the terrorist organisation was present in an area spanning from Aleppo in the west to the border areas within Iraq in the east, which includes oilfields and trading networks. The change in IS territorial distribution is well resumed in the change of the terrorist organisation's name, which adopted the official denomination of ISIS (Islamic State

of Iraq and Sham[112]). In this first phase of its political development, IS' conquer strategy consisted of four phases: joining the revolutionary council in coalition with other opposition groups in rebel-held areas, taking full control of cities and villages by eliminating other opposers, killing all citizens who could pose a threat to their rule because of their religious or ideological affiliation, and distributing their properties to loyal members (Reuter, 2015). In February 2014, ISIS officially broke its ties with al-Qāʿida (Sly, 2014). In the early week of June 2014, political conditions allowed ISIS to cross from Syria to Iraq, conquering large portions of territories with little resistance (Salman and Rasheed, 2014). In the last week of June 2014, the group took control of Mosul, the largest city of northern Iraq. In the controlled area of Syria and Iraq, ISIS took charge of all state functions and implemented a totalitarian system that demanded all citizens' absolute loyalty (Callimachi, 2018). IS also tried to secure the loyalty of its members, including a consistent number of foreign fighters, by distributing a large share of the income from its businesses (*e.g. smuggling and rackets*) to its supporters.

The state project of the Islamic State reached its *'peak'* in the period from July 2014 to January 2015. The turning point for the group was the proclamation of the Caliphate on the 30th of June 2014 (Weaver, 2014). This statement carried a high political and symbolical meaning. From a political point of view, it translated in the group claim to carry a religious authority over all Sunnī Muslims, and it put the Caliph steady at the top of the group's hierarchy. From a symbolical point of view, the proclamation of the Caliphate served to emphasize the link between the current IS state project and the historical rule of Mohammad, the four Rāshidūn Caliphs[113] and the Abbasid dynasty[114]. In this respect, Weiss and Hassan (2014, p. 198) stress that the credential for the Caliphate, the Islamic State, argues in its propaganda that all conditions were met for the proclamation of this political and religious institution by stating that the group had controlled a portion of territory in the Arab land and that al Baghdadi was a descendant of the Prophet Mohammad, which are two preconditions set by many Islamic scholars for claiming legitimacy to rule over Muslims. Another important decision of the terrorist group had been to remove the local terms 'Sham' and 'Iraq' in its name and rename itself Islamic State (IS) to emphasise the global project of the terrorist organisation. In the controlled territories, IS implemented a system of para-state governance to provide services and security to citizens (Lister, 2015, p. 60). In August 2014, the group further expanded in Syria and northern Iraq. Fishman (2016) correctly notes that 'at its grandest moment, the Islamic State governed approximately six million people in Iraq and Syria, spread across a territory roughly the size of Great Britain'. The rapid expansion of the Islamic State convinced the United States to carry out airstrikes, together with its allies, to halt the terrorist organisation. On the ground, the fight against the Islamic

112 Sham is the historical region which broadly includes Syria, Lebanon, Jordan, Israel and Palestine, with also some parts of the south of Turkey.

113 The term Rāshidūn which means "Rightly Guided" indicates the first four Caliphs of Islam. Their 25 years of rule is characterised by a rapid military expansion. They are also indicated by most of the Sunni tradition as a good example of governance.

114 The Abbassid was the third dynasty to succeed the Islamic prophet Muhammad. Some of their rulers are regarded as a positive example of governance by some Islamists and jihadists.

State was conducted by a heterogeneous coalition of the US-supported Kurdish Peshmergas[115], the Syrian Democratic Forces[116], the loyalists of Bashār al-Assad[117] the Shīʿa militias[118], often supported by Iran, and some anti-Assad armed Syrian rebels[119]. Until January 2015, IS continued to increase its overall territorial control in spite of enemy attacks, by reaching the city of Kobane/Ayn al-Arab in the North of Syria (Butler and Holmes, 2014) and taking control of the Anbar region in Iraq (Washington Post, 2014). Outside its controlled territories, IS-inspired terrorists carry out deadly operations in the Arab and non-Arab cities. One of the most shocking terrorist operations was that carried out by Amedy Coulibaly (Callimachi, and Higgins, 2015) who killed four people and took several hostages in a kosher supermarket in Paris on the 9th of October 2014 (Topping, 2015). His female accomplice, Hayat Boumeddiene, moved to Islamic State-controlled territory after the attack (Gardner, 2015). In this phase, IS also committed widespread crimes in its controlled territories, including the killing of many Iraqi Sunnīs from the Abu Nimr tribe in Anbar province on the 29th of October 2014 (Chulov, 2014a). The crimes of IS attracted wide attention in the global media and were widely discussed in the Arabic-speaking Twitter-sphere. In my test-set, which only includes part of this phase (*from October 2014 to January 2015*), I registered the highest number of users (*52,731 single users for a day*) and the second-highest number of daily interactions in my test-set (*122,668 average daily interactions*) in this phase. The average positive sentiment towards IS in my Twitter sample was 34.38%.

115 Peshmerga forces (*translation: 'those who face death'*) are the military force of the autonomous region of Kurdistan in Iraq. They have been highly involved in the fight against the Islamic State by reclaiming possession of some areas of Iraq, mostly those north of Mosul. After the attempted Kurdish referendum for the independence of Kurdistan (September 2017), they lost all the territory they reclaimed from IS outside the Kurdish region (mostly Sinjar and Kirkuk) to the Iraqi government and allied militias. At the time of writing, they are located only in the autonomous region of Kurdistan.

116 The Syrian Democratic Forces (SDF) is an alliance of various militias in the northeast of Syria that was created to fight the Islamic State. It is composed mostly of Kurdish militias from the People Protections Units (PYD) which are made up of fighters ideologically linked to the Democratic Union Party, a Kurdish confederalist party which aims at creating an autonomous region of all the Kurdish majority regions in Turkey, Iraq and Iran. The SDF also includes some Arab and Assyrian/Syriac and other smaller forces (Turkmen, Armenian and Chechen). They were active in the anti-IS campaign in Syria, with air cover from the United States. At the time of writing, they control Syrian territory east of the Euphrates and some portions of the Western bank of this river, mostly the area of Raqqa and its surroundings.

117 The loyalist forces in Syria are composed of the Syrian army and a great variety of armed paramilitary groups. There is a plurality of these militias, but the biggest is the National Defence Forces, which is made up of a large network of fighters supporting the Syrian President Bashār al-Assad. These armed forces have very different ideological orientations, but they are united by a certain degree of sympathy for the Syrian government.

118 Shīʿa militias, composed of a variety of paramilitary forces that are active in Iraq and Syria. The most important is the Popular Mobilisation Forces (in Arabic: الحشد الشعبي; transliteration: *al-Hashd ash-Shaʿabi*), which is an umbrella organisation that includes a large variety of Iraq armed organisations. Some of them are clearly pro-Iran, while others are more linked to the national network of the Iraqi ayatollah, ʿAlī al-Husaynī al-Sīstānī, and the religious authority and political leader Muqtada al-Sadr, who are less pro-Iranian than other groups of the Popular Mobilisation Forces. There are also Shīʿa militias that are active in Syria, composed of Shīʿa volunteers from Iraq, Afghanistan, Iran and Pakistan. These groups have been fighting both the Syrian rebels and the Islamic State. These groups were decisive in fighting the terrorist groups in both Iraq and Syria.

119 There is a great variety of groups that have fought against the Assad loyalist forces. These armed groups have very different ideological orientations, from al-Qaeda-inspired jihadism to secularism and nationalism. All these groups were in principle hostile to the Islamic State and fought some battles against the terrorist organisation, but their actions were mostly directed against Assad and his allies.

The decline phase of IS started in February 2015, when the Kurds regained control of Kobane/Ayn al-Arab and the surrounding area (Barnard and Shoumali, 2015), and it concluded at the end of July 2015, when IS lost the strategically important city of Hasakah in Syria (Newsweek, 2015). The main difference between this phase (*decline*) and the following one (*defeat*) is that the terrorist organisation was still obtaining some military victories, such as conquering Sirte (AnsaMED, 2015), Tadmur/Palmyra (Shaheen, 2015) and shortly Ramadi (Ashley and Alkhshali, 2015), but IS territory clearly started to shrink in both in Iraq and Syria. For example, IS lost the key city of Tikrit in April 2015 (Cockburn, 2015), which is one of the largest cities of northern Iraq and it embodies a strong symbolic value as the birthplace of Saddam Hussein. Although IS was losing ground, the group was still able to carry out terrorist operations and committed mass crimes in both the Arab world and other countries. Two examples are the attacks in the Bardo Museum in Tunis (Amara and Argoubi, 2015) and that against a Shīʿa mosque in al-Qaṭīf (Saudi Arabia) (BBC, 2015a). The capability of IS to carry out attacks was the most important propaganda priority at that period, (Weiss and Hassan 2015, p. 266). The military events which involved IS and its terrorist operations were widely discussed in the international media and the Arabic-speaking Twitter. In my sample, I found that the phase of decline is that which is characterised by the highest average daily interactions (*200,779*) and the second-highest number of single users for a day (*49,872*). The average positive sentiment towards IS in my Twitter sample was 17.71%.

The defeat phase for IS is characterised by the defeat of the Islamic State, which was no longer able to obtain any significant military victories and progressively lost all its territories. As stated by Jones and al (2017), the defeat of IS deeply affected the Islamic State's image of success in attracting recruits, while the terrorist organisation continued to conduct and incite external attacks. On of the ultimate defeats of IS took placed in July 2015 when the terrorist group lost the strategically important city of Hasakah (Newsweek, 2015). Following the defeat of Hasakah, the terrorist organisation was subsequently defeated in Falluja in Iraq (Salim, 2016) Manbij (BBC, 2016) and Dabiq in Syria (Withnall, 2016), and Sirte in Libya (Wintour, 2016). In 2017 IS was driven out of Mosul in Iraq (BBC, 2017), which was the biggest city controlled by the Islamic State and the place where the Caliphate was officially proclaimed. The final defeat of IS occurred in October 2017, when the alleged Caliphate lost Raqqa (Martinez and Winsor, 2017): its unofficial capital. At the time of writing (2019), the group has lost its territorial control in both Iran and Syria. Despite gradually losing all of its controlled areas, IS was still capable of organising major attacks in several parts of the world in this period. Two examples are the terrorist operation in the Brussels airport (Dearden, 2016) and the attack in the Shīʿa shrine of Sayyidah Zaynab in Syria (The Guardian, 2016). Another sign of IS defeat is that the users involved in the Twitter discussions about its political actions and their published contents in the Arabic-speaking Twitter-sphere have gradually decreased. The average daily interactions have been 42,645, while the number of single users per day in the period has been 16,680. Twitter censorship of pro-IS contents has been in place also in this period. The average positive sentiment towards IS in my Twitter sample was 12.18%. In 2019 IS lost any territorial control both in Syria and Iraq.

2.2. Sentiment towards IS and its determinants: A literature review

The previous historical introduction shows that IS' political trajectory has gone through different phases and that the terrorist group engaged both in military and terrorist operations in the three years of the study. It also indicates that there were wide changes in the positive sentiment towards IS through the three tested phases (*peak, decline, defeat*). In the next part, I shall account for these changes by looking at the impact of a selected set of determinants (*daily interactions; single users per day; censorship; lagged positive; censorship; attacks and crimes against Sunnī' targets* (*same day*)*; attacks and crimes against Sunnī' targets* (*following day*)*; attacks and crimes against Shīʿa targets* (*same day*)*; attacks and crimes against Shīʿa targets* (*following day*)*; attacks and crimes non-Muslims targets* (*same day*)*; attacks and crimes non-Muslims targets* (*following day*)*; major military victories of IS* (*same day*)*; major military victories of IS* (*following day*)*; major military losses of IS* (*same day*)*; major military losses of IS* (*following day*) on the daily positive sentiment towards IS in the entire period and in each of the three tested phases (*peak, decline, defeat*). My aim is to address the following research question: *'How did the tested determinants influence the support for the Islamic State in the Arabic-speaking Twitter-sphere?'*. To provide an answer to the research question, I relied on a sentiment analysis which provides the day-to-day percentage of positive tweets about IS and statistical analysis of the aforementioned determinants. More specifically, I shall first look at the literature of studies which have combined sentiment and statistical analysis; second, I shall discuss the reasons for selecting these nine specific determinants and the expected impact on the sentiment towards IS, and third I shall provide the findings for each of the determinants in the three-year period (*from 1st of October 2014 to 30th of September 2017*), and in the three tested phases.

The research draws from a plurality of studies on the impact of exogenous and endogenous events on sentiment analysis for Twitter. Asur and Huberman (2010) showed how Twitter sentiment about a movie predicts its box-office revenue better than market-based predictors. Ristea and al. (2018) studied the case of hockey events in Vancouver to claim that there is a relationship between crime patterns and the location of Twitter messages. Bollen and al. (2011) found a relationship between sentiment and the stock market, while Gergoula and al. (2015) showed that the discussion about bitcoins influences their price. Tsytsarau, Palpanas and Castellanos (2014) looked at the correlation of important news and the overall sentiment of users in different databases. Hannak and al. (2012) conducted a study on a very large sample of Tweets to analyse the impact of weather on aggregated sentiment. The study of the exogenous and endogenous events on sentiment analysis has also been utilised in several political science publications. An example is the analysis of electoral behaviours in Italy and France by Ceron, and al. (2014) in which the authors compare the share of votes for the local parties in the polls with the amount predicted by sentiment analysis. They utilised ordinary least square (OLS) regression to assess the predictive skill of their estimation of the vote for a candidate vis-à-vis a set of endogenous and exogenous determinants in comparison to the actual electoral results. Among other findings, they reported that a higher percentage of abstention decreases the predictive skills of a social media analysis

in providing accurate electoral results while an increase in the number of tweets increases the accuracy of this measure (Ceron and al., 2014, p. 352).

When looking at the Arabic-speaking Twitter-sphere, the combination of sentiment and statistical analysis has been utilised in other studies. Jamal and al. (2015) analysed the anti-American and anti-Iranian discourse on Arabic Twitter by differentiating between political and religious-motivated hostility and highlighted how specific key events had had an impact on negative and positive sentiments. Zeitzoff (2011) developed an hourly dyadic conflict intensity score by drawing from Twitter and other social media sources during the Gaza Conflict (2008–2009) to measure changes in Israel's and Hamas's military response dynamics. Siegel and al. (2017) looked at the influence of Saudi clerics in the sectarian discourse in relation to some key events in advance of Houthi in Yemen, concluding that the pro-Saudi network has played a central role in spreading this type of contents in relations to some specific events of the war. Finally, Ceron and al. (2018) studied sentiments towards IS in the period between October 2014 and January 2015 by testing a set of determinants to investigate the afflux of foreign fighters. They found a link between sentiment for IS and the inflow of foreign fighters to IS-controlled territory, but they also highlighted that other factors had a role in increasing the number of foreign fighters, mostly revolving around the 'transactions cost' of making this choice (e.g. *living in a country near ISIS' borders*) and the importance of an already existing active Islamic terrorist group. Finally, they found a negative impact of the percentage of Shīʿa Muslims within a country on the numbers of foreign fighters.

Although some studies concentrate on the period that has followed terrorist attacks on Twitter, these analyses have mostly concentrated on elements which might have been affected by IS terrorist attacks, other than the positive sentiment towards IS. An example is the study by Magdy and al. (2015) that provided Twitter analysis of 8,36 million tweets in the two days following the Paris attack to analyse the link between IS actions and the discourse about Islam in many different languages. In conducting an analysis of the influence for each determinant on the positive sentiment towards IS, my research aims at contributing to the studies about IS sentiment in Twitter discourse by filling this specific gap. The only study that looks at the relations between determinants and sentiment is that by Ceron and al. (2018) who investigated a wide range of determinants that in some cases overlap with those included in my study (e.g. *military victories and defeats*[120]) but for a shorter period (*June 2014-January 2015*) and with a different selection of determinants. For example, instead of looking at '*the targets of attacks and crimes'*, the authors tested the impact of *'beheadings of Westerners'* and '*beheadings of non-Westerners'.* The aim of this chapter is, therefore, to contribute to the study on the determinants for IS Twitter sentiment in two ways. The first is by contributing to the currently limited literature on the determinants of IS support. The second is by providing a study of a three-year period that includes different phases of its political development. In this respect, the study offers the longest period for a study on the sentiment towards IS. This element is particularly important because it is very likely that the determinants

120 Despite utilising the same category of *'military victories'* and *'military defeats'*, the authors included a wider range of attacks and defeats than those of my sample.

have resonated differently in each phase of IS political development. The second is by testing a plurality of determinants that have not yet been accounted for in the previous studies (*e.g. major military victories, e.g. terrorist attacks*) on overall sentiment towards IS. I believe some of these determinants can provide very insightful information on the issue of the discussion about IS in the Arabic-speaking Twitter-sphere.

2.3. Determinants impact on IS sentiment: a general overview

The interpretative framework for sentiment analysis and statistical analysis revolves around a tripartition of '*macro-phases of IS expansion/retreat'*, *'determinants'*, '*targeted audiences*', and *'expected impact for the targeted audience'*. For the '*macro-phases of IS expansion/retreat'*, I followed the afore-mentioned division of the test-set (October 2014 - October 2017) into three main phases, which are: '*peak*', '*defeat*', and '*decline*'. I defined the phase of '*peak*' (October 2014 - January 2015) as that which was characterised by an expansion of IS in northern Syria and Iraq; the phase of '*decline*' (February 2015 - July 2015) as that when IS was mostly losing ground, but was nevertheless still obtaining some limited victories; the phase of '*defeat*' (August 2015 - October 2017) is that of the ultimate losses of the Islamic State, when territories were gradually fully retaken by its enemies. The '*determinants*' can also be divided into three groups. The first refers to '*IS military fate',* including 1) IS' major military victories 2) IS' major military losses respectively for 1) the day of the attack and 2) the day which followed the attack. The second corresponds to *'targets selection in IS' major terrorist attacks and crimes'* which accounts for 1) IS attacks and crimes against Sunnī targets 2) IS attacks and crimes against Shīʿa targets, and 3) IS attacks and crimes against non-Muslims targets respectively for 1) the day of the attack and 2) the day which followed the attack. The third group speaks to the '*Twitter-related data'*, which has changed due to 1) the impact of censorship, 2) the increase or decrease of single users for a day 3) the increase or decrease of daily interactions, and 4) lagged positive.

To define the hypothesis on the expected impact of each determinant in the entire period and for each phase, I relied on an interpretative framework drawing from the division between the three audiences which I have already discussed in the previous chapter: *'supporters'* or those who express support for the Islamic State on Twitter, '*possible sympathisers'* - or those users who share one or more of the building blocks of IS ideology while still opposing the terrorist group, *'opposers/enemies'* - those who express hostility towards the Islamic state. Drawing from this tripartition, I accounted for the expected impact of the determinants within each of the three audiences separately to define the total impact of the determinants on the positive discourse about IS. Furthermore, I accounted for two time periods to assess the impact for five of the determinants (*attacks and crimes against Sunnī' targets; attacks and crimes against Shīʿa targets; attacks and crimes non-Muslims targets; major military victories of IS; major military losses of IS*). More specifically, I accounted for both the same day and the following day to check whether it was possible to observe the expected effect on one of the two days. Drawing from the observation that it is difficult to assess when exactly the effect can be observed due to social dynamics, I formulated my hypothesis for both time periods. It is worth pointing out that my

methodology does not allow to detect whether a difference in the impact of the determinants is due to users changing their opinions or to new users from each audiences joining or not joining the conversation, but I considered the second interpretation to be more convincing. This is because the topic of IS has been highly divisive in the Arab world and I, therefore, did not expect many users to change their opinion in the tested period or in relation to specific events. Moreover, it is worth recalling that I accounted for a dichotomic interpretation of the sentiment, as an increase of the positive means a decrease of the negative sentiment towards IS, as I explained in the previous chapter. I utilised this interpretative framework in formulating the expected impact of the determinants on the positive sentiment about IS, and I shall provide some more elements in favour of this interpretation in the next part of the chapter. I accounted for each determinant as having *a 'non-significant impact'* or '*significant impact'* on the three targeted audiences. I stated the determinant had a *'non-significant impact'* when I did expect some influence on the sentiment towards IS, though still not statistically relevant. I expected a determinant to have had a '*significant impact'* when its influence on the sentiment towards IS was statistically relevant. Finally, I formulated in my hypothesis whether the expected impact points to an *'increase'* or a *'decrease'* of the positive sentiment towards IS.

The following chapter revolves around the expected influence of the determinants on the Sentiment towards IS. I will explain in further detail for each of the determinants, but I anticipate the expected results in the following table.

Table 2.1: Expected results for each of the determinants

Name of the determinants	Entire Period	Peak	Decline	Defeat
Lagged positive	↗	↗	↗	↗
Single users per day	↗	↘	↗	↗
Daily interactions	↘	↗	↘	↘
Censorship	↘			
Attacks and Crimes against Shī'a targets (same day/following day)	↘		↘	↘
Attacks and Crimes against Sunnī targets (same day/following day)	↘	↘	↘	↘
Attacks and crimes against not-Muslim targets (same day/following day)	↗	↗	↘	↘
Major military victories (same day/following day)	↗	↗	↘	
Major military defeats (same day/following day)	↘	↘	↘	↘

↗ Not-significant increase of positive sentiment towards IS ↗ Significant increase of positive sentiment towards IS

↘ Not-significant decrease of positive sentiment towards IS ↘ Significant decrease of positive sentiment towards IS

2.3.1. Determinants of sentiment towards IS: Military fate

The first group of determinants which I selected are those regarding '*IS' military fate',* which refer to major military victories and defeats of the terrorist organisation (*e.g. IS conquers Tadmur/Palmyra, IS' loss of Mosul*) (BBC, 2015b; Graham, 2017). For my sample, I selected all IS' gains and losses of cities with a population higher than 20,000 and that of the village of Dabiq, which carried high symbolic value for IS[121] on both the day of the victories or defeats[122]. I chose these two determinants because I expected that IS military fate would play an important role in the perception of the terrorist organisation in the Arabic-speaking Twitter. This is because the Islamic State has not just been a terrorist group, but it has also acted as a state-like organisation in controlling territory and providing services to the local population (Cronin, 2015). IS has often engaged in regular military operations, including the occupation of cities and clashes with other armed groups. Moreover, I found in the previous chapter that the pro-IS Twitter discourse contains a large share of contents about its military operations. These are both IS-generated content, such as that published by the Amaq agency (*15.72% of all pro-IS tweets in the training set*), and supporters' network. More specifically, the topic constitutes a large percentage of the tweets that I coded in the '*broadcasting military victories'* category in the training set (*47.91% of the total pro-IS tweets*). The centrality of this topic of victory for IS has been further confirmed by other studies, including those by Fernandez (2015), Ingram (2014; 2016), and that of Flannery (2015), who points out that the Islamic State propaganda photographs and videos frequently depict training camps, parades, weapons looted from enemies, and martyrdom operations. In my training set, I have also found that the topic of victory often recurs in the anti-IS tweets as well. I included these contents in the topic category of '*victory and arrest*' (*34.80% of all tweets coded in the anti-IS category*), which is the second most recurrent subject in the anti-IS discourse. Although this category also includes content revolving around major anti-terrorism operations, a wide share of these tweets discussed the military losses of the Islamic State. Another confirmation of its centrality in the discourse is that the number of daily interactions is 2.57 times higher on the day following an IS major victories than the average (*200,691 against 77,786*), and it is 2.02 times higher for single users per day (53,*385 against 26,355*).

A limited difference in the Twitter-related data can also be observed in the aftermath of IS major defeats, which is 1.09 higher for daily interactions (*85,548 against 77,786*), and 1.01 higher for single users per day (*26,799 against 26,355*).Drawing from the observation that major IS military victories and defeats were relevant topics in both the pro-IS and the anti-IS network, and might have had an impact on sentiment towards IS, it is central to discuss the expected impact of the determinants *'IS' major military victories'* and *'IS' major military losses'* in the discourse about the Islamic State. In doing so, I assume that both determinants had the same impact on

121 IS identifies the city of Dabiq as the battlefield between the forces of true Muslims and their enemies at the end of times (cfr McCants, 2015).

122 As stated in the coding guide and methodological part, I adopted this criterion with some degree of flexibility. Namely, whenever the news was published in the evening, I considered the same day as the following day and the following day as two days after the news.

the same day and the following day. This is because the selected victories and losses were major events in the war against IS. To discuss this topic, it is useful to recall the concept of psychological warfare, which is well summarised in a famous quote from the former head of the American secret service (Office of Strategic Services - OSS), William Donovan:

'The coordination and use of all means, including moral and physical, (…) to destroy the will of the enemy to achieve victory (…) and to create, maintain, or increase the will to the victory of our own people and allies and to acquire, maintain, or to increase the support, assistance, and sympathy of neutrals' (Donovan in Kermit, 1976, p. 99).

Donovan's definition speaks to the main reasons for a political organisation to broadcast '*major military victories'* vis-à-vis the plurality of audiences and the expected impact of this propaganda on Twitter users. Drawing from Schmid's (2005) account of 'Terrorism as psychological warfare', I argue that *'major military victories'* on Twitter differs for each of the three targeted audiences. Among '*opposers/enemies'*, *'major military victories'* have likely 'produced terror among many of those who are close to the victims, who believe that they might be the next target of the terrorists or those who, for other reasons, identify with the victim' (Schmid, 2005, p. 138). Drawing from Schmid's (2005) assumption, I expected that only a limited group of users who would be worried about being negatively affected by the Islamic State victories would decide to tweet. My assumption relies on the idea of *'proximity'* as defined by Kwon and all. (2017, p. 870), who 'elaborate the notion (…) along three axes—geography, time, and social closeness—by borrowing Trope and Libermann's (2010) discussion of "psychological distance" (p. 440)' which is a key concept in their construal-level theory (CLT). In other words, my expectation is that only those users who felt psychologically threatened by the IS victory would be inclined to tweet in response to a military victory. Taking into consideration that the Islamic State, even at its peak period, controlled a rather geographically limited territory in the Arab world (only parts of Syria, Iraq and a small portion of Libya), I expected this group to be particularly limited. In this respect, I expected a possibly limited decrease in the sentiment toward IS in the overall sentiment, which is made up of *opposers/enemies'* and '*possible sympathisers*'. However, I did expect that *'major military victories'* would greatly boost the morale of supporters, by determining an overall increase in positive sentiment towards IS in this group. This element was confirmed by a research of Bacelò and Labzina (2018), who claimed that IS terrorist attacks broadened their base of support. This is because IS portrays its victories as a sign of God's benevolence towards the group, which is a common *topos* of Islamist extremism (Halverson and al., 2011) and it aims at convincing users that IS is conducting a holy battle against its enemies. Finally, as correctly pointed out by Gartenstein-Ross, Barr and Moreng (2016, p. 5), IS propaganda on victory mostly aims at 'projecting an image of strength and concealing weaknesses'. In other words, IS utilises Twitter to increase the morale of its '*supporters*', who might have been more vocal in expressing a positive opinion of IS by interpreting victory as a sign of God's benevolence.

Taking into consideration that the majority of my tweets comprises users opposed to the Islamic State, I expected an IS victory to have a *'-significant impact'* in the increase of positive sentiment for IS in my test-

set. To better understand this hypothesis, it is worth mentioning that most of the victories were located in the peak period, which IS mostly characterised by the presence of supporters, with the exception of retaking Ramadi and conquering Palmyra, which happened in the *'decline period'*. For the aforementioned reasons, I expected that the pattern would differ in the *'peak'* phase, when the percentage of *'supporters'* was twice as high as that of the entire test set. For the phase of *'decline',* it is worth mentioning that it includes a higher number of days (*181*) than that of *'peak'* (*123*). Furthermore, in these periods the anti-IS tweets widely exceeded the number of pro-IS tweets (average for the two periods 13.21 pro-IS Sentiment) also when taking into consideration the weighted average. Therefore, I expected a 'significant' impact on the Increase of the positive sentiment in the peak period, while I expected a *'non-significant'* impact on the decrease of positive sentiment towards IS for the phases of *'decline'*. This is because of the higher impact of *'opponents'* and *'possible sympathisers'* on the overall users' sentiment towards IS. For the phase of *'defeat', it is noteworthy* that there was no major IS victory.

Similarly to IS' victories, I argue that also *'IS major military losses* (*same day, following day*)*' were* likely to resonate differently with different audiences. Among *'opposers/enemies'*, I expected that *'major military losses'* to have an increased effect on the negative sentiment for reasons that are similar but opposite to those listed in the previous part about IS' major victories. In other words, I argue that anti-IS tweets aim at countering the claim of the Islamic State that their Jihād is carried out in the name of God. In a religious framework, God gives victory to those who follow His path, which some of the *'opposers/enemies'* identify as those fighting against the Islamic State. Ordinary Arab Sunnīs were and are obviously scared to lose their lives at the hands of IS and are comforted by its military losses. Regarding '*possible sympathisers*', they might have seen IS defeats as a clash between two groups which they both identify as enemies. For 'supporters', I draw from the observation that 'the Islamic State obviously attempts to avoid associating its 'brand' with serious military losses' (Lakomy, 2018, p. 5). It follows that I expect that they might have avoided to comments expect that *'IS major military losses'* for not projecting an image of a weak organisation. military losses. It follows that I expect that pro-IS users have likely not commented *'IS major military losses'* for not projecting an image of a weak organisation.

Taking all these elements into consideration, I expected *'IS major military losses* (*same day, following day*)*'* to have a *'significant impact'* on the decrease of the positive sentiment towards IS in my test-set. This is because *'opposers/enemies'* represents the main audience in the test set over the three-year period. However, I believe the impact of *'opposers/enemies'* to have been partially balanced by an active *'supporters'* network, especially in the *'peak'* phase. With regard to the three phases, I, therefore, expected *a 'non-significant impact'* in the decrease of positive sentiment towards IS in the *'peak'* phase. On the contrary, I did expect *'IS major military losses'* to have a *'significant impact'* in the decrease of the positive sentiment towards IS in the *'decline'* and the *'defeat'* phase. This is both because the percentage of *'supporters'* is widely lower in these two phases and the network of *'opponents/enemies'* is more vocal in its opposition to the Islamic State in two phases when *'IS major military losses'* outnumbered *'IS major military victories'*.

Figure 2.2. Positive Sentiment towards IS and key military events (Peak)

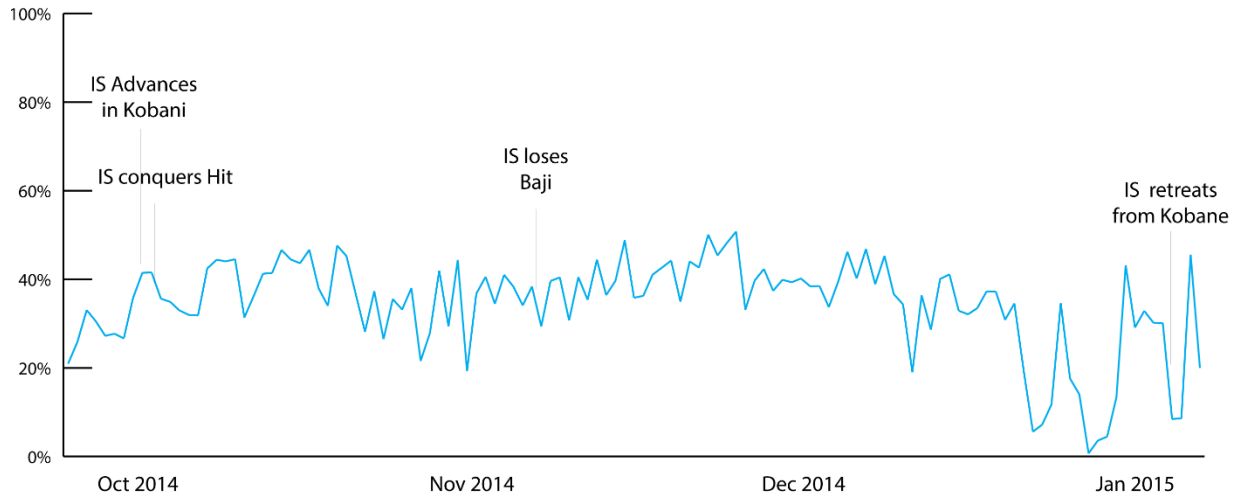


Figure 2.3. Positive sentiment towards IS and key military events (Decline)

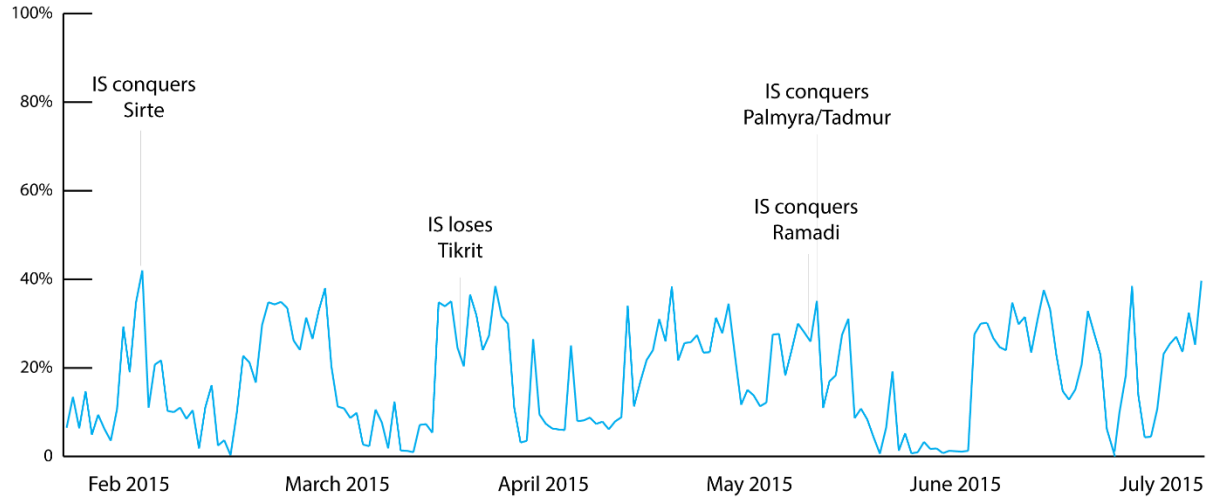
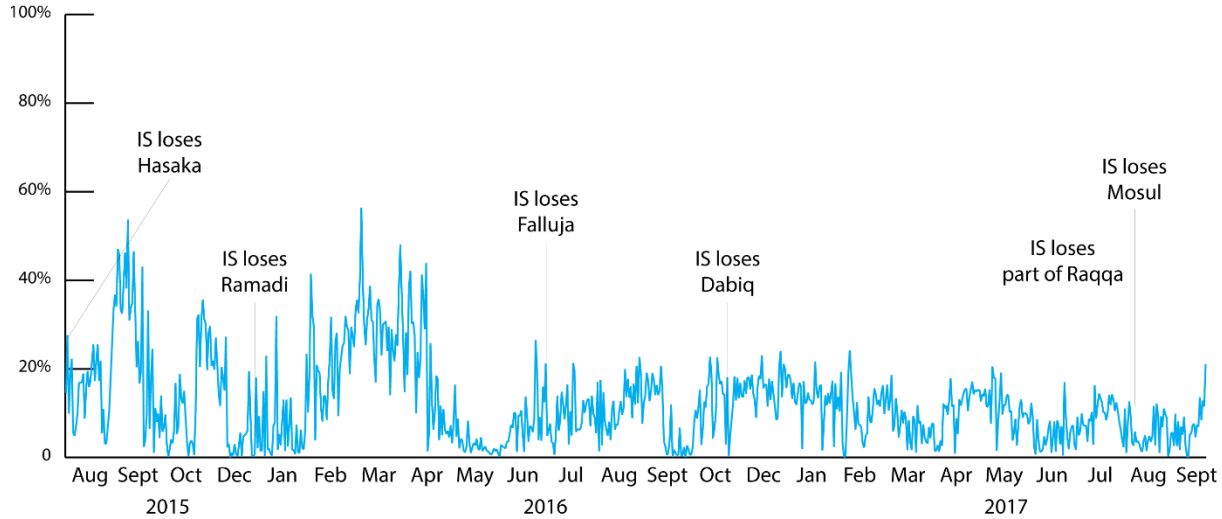


Figure 2.4. Positive sentiment towards IS and key military event (Defeat)



2.3.2. Determinants of sentiment towards IS: Target selection in IS' major terrorist attacks and crimes

The second set of determinants revolves around *'target selection in IS' major terrorist attacks and crimes',* which refers to the difference in targets of IS-inspired or IS-conducted attacks against civilians in the three-year period of my study. As stated in the introduction, I relied on the Global Terrorism Database of the University of Maryland to select these events. This database includes around 4,800 lethal and non-lethal terrorist attacks and crimes organised by the Islamic State in the tested period (Global Terrorism Database, 2019[123]). Most of these operations took place in the conflict areas (*Libya, Iraq, Syria, Yemen*), but terrorist attacks were also carried out in North America, Europe, and central Africa. Within this large group of terrorist attacks and crimes, I isolated 183 major terrorist attacks and crimes that caused more than 20 civilian victims[124] and a few events which carried a high symbolic value. I decided to adopt this threshold to select a limited number of exogenous events because I have seen that nearly every day there was an IS attack against civilians, so it would be virtually impossible to test my determinants with the inclusion of all terrorist attacks and crimes[125]. In the analysed period, I found that IS carried out 100 terrorist operations and crimes against Sunnīs, which included the mass killing of civilians in IS-controlled territories, such as executions of political dissidents, of fleeing refugees, or of political leaders. 53 major terrorist attacks and crimes targeted Shīʿa, mostly in mosques and markets of the Shīʿa-majority neighbourhoods. Finally, the alleged Caliphate organised 38 major terrorist operations against non-Muslims, both in Muslim-majority and non-Muslim majority countries. I have coded each of the attacks and crimes for the main targets of the operation (*Sunnī, Shīʿa, non-Muslims*) for the day of the attack and the following day[126].

To estimate the impact of IS-inspired attacks, it is important to analyse the communicative value for the Islamic State to engage in terrorist attacks. To better understand this framework, it is useful to recall once again the

123 'Information on more than 180,000 Terrorist Attacks'

Global Terrorism Database 2019). Available at: https://www.start.umd.edu/gtd/. (Accessed 17 July 2019).

I have excluded attacks in Nigeria because they were perpetrated by Boko Haram. Although this organisation is formally part of the Islamic State, I consider the Nigerian context to be characterised mostly by local dynamics.

124 I have included in this group also two attacks and crimes that caused less than 20 victims, but which nevertheless received wide coverage in the media. The first is the beheading of the Syrian archaeologist Khaled al-Assād ((BBC, 2015c), the second is that of Allan Henning (BBC, 2015d); the third is the attack at a social centre in San Bernardino. California (Botelho and Ellis, 2015) the fourth is the killing of the Jordanian pilot Mu'adh al-Kasasbeh (Chulov and Malik, 2015).

It is worth pointing out that there were some days when more than one terrorist attack occurred (*e.g. the attacks on tourists in Sousse, the killing of a Frenchman in a factory, and the IS attack on a Shīʿa mosque in Kuwait on the 26th of June 2015*) (Amara, 2015; BBC, 2015e; Aljazeera, 2015a).

125 The threshold of more than 20 civilians is arbitrary, as each event might resonate differently for a plurality of reasons in the Twitter-sphere. However, I consider it valuable to provide an indication for attacks that have received wide resonance in the Arabic-speaking Twitter community.

126 As stated in the coding guide and methodological part, I adopted this criteria with some degree of flexibility. Namely, whenever an attack occurred in the evening, I considered the same day as the following day and the following day as two days after the news.

quote from Harmon and Bowdish (2018, p. 248) who describe terrorism as 'a purposeful activity' that 'aims at psychological impact, and uses the power of ideas, and force, to project and targets'. In other words, the communicative aim of terrorism is to produce a psychological impact on a plurality of audiences (*supporters, possible sympathisers, opposers/enemies*) to obtain specific political goals (Schmid and De Graaf, 1982; Tugwell, 1986). To summarize the many aims of IS in broadcasting military attacks for each of the listed audiences, I draw from the study by Marone (2013, p. 250-297), which discusses in detail the reasons why terrorists perform suicide attacks, by re-adapting it to my theoretical standpoint. I argue that the expected political goals for a terrorist organisation, such as IS, in broadcasting *'terrorist attacks and crimes'* are: *'consolidating the support for the organisation'* and *'outbidding other terrorist groups'* in targeting '*supporters*', '*gaining attention'*, and *'acquiring support'* in targeting '*possible sympathisers'*, *'intimidation'* and *'conditioning'* in targeting *'opposers/enemies'*. I utilised these categories to discuss the expected impact for the analysed determinants.

When looking at the reasons for IS to broadcast terrorist attacks and crimes among *'supporters'*, the first is *'consolidating the support for the organisation'*. As Stoppino (2001, p. 292) correctly points out, 'violent acts which carry a great symbolic value concerning legitimacy have the highest weight in promoting group conscience among all of those who are in the same disadvantaged situation or share resentment'[127]. In other words, terrorist attacks aim at increasing the morale of supporters and their commitment to pursuing their political battle. For example, suicide attacks carry the political message that IS supporters are ready to sacrifice their lives for their cause. The second is '*outbidding other terrorist groups'*. To understand this aim, it is worth pointing out that IS found itself in a political environment in which there were also other terrorist organisations characterised by a similar ideology. The increase of the frequency and complexity of terrorist attacks and crimes aims at consolidating popular and financial support for a terrorist organisation *vis-à-vis* competing organisations (Bloom, 2005) by demonstrating the group's ability to deliver what it proclaims (Neumann and Smith, 2005, p. 579). Regarding the Islamic State, terrorist attacks and crimes have likely served in gaining or consolidating its supremacy in the wider Jihadist galaxy, showing that IS is the most effective group in fighting the enemies of Islam.

The first reason for the Islamic State to share terrorist attacks and crimes on Twitter when targeting '*possible sympathisers'* is *'gaining attention'*. Stoppino (2011, p. 89-90) correctly points out that violence is a catalyst of attention from a communicative point of view. Terrorist organisations know it well, and, in agreement with Weimann (2005) , they clearly organise their attacks to obtain high resonance in the media (*e.g. places of the attacks, targeted victims, video claims of responsibility*). In the case of the Arabic-speaking Twitter-sphere, I argue that it is essential for IS that users discuss them, whether in a positive or negative way. It is worth mentioning that IS does not have access to mainstream media, and it must, therefore, rely on both *'supporters'*

127 The original quote is 'Sono gli atti violenti dotati di grande carica simbolica di affermazione della legittimità ad avere i maggior peso per promuovere una coscienza di gruppo tra tutti quelli che si trovano in una medesima situazione di svantaggio o che nutrono uno stesso risentimento'.

and, paradoxically, *'opposers/enemies'* in gaining public resonance for its actions. Moreover, IS likely expects that an increase in attention to its actions would convince some users, whether a small or a big percentage, to support the organisation. This element links to the second aim of terrorist communication regarding *'possible sympathisers'*, which is *'acquiring support'*. From IS' point of view, to engage in attacks and crimes is aimed at showing that the organisation is actively fighting in the name of the entire Islamic community against traitors and enemies. As Sagerman (2017, p. 38) accurately denotes, 'martial identity is always activated in a salient belligerent out-group and against all potential enemies'. In other words, terrorist attacks and crimes aim to trigger the dynamic of 'us' vs 'them' among '*possible sympathisers'*. The message of IS in carrying out attacks and perpetrating crimes is that everyone must take a side in the conflict between Islam and its enemies.

When looking at *'opposers/enemies'*, the first objective of IS in publicising '*terrorist attacks and crimes'* is *'intimidation'*. In other words, terrorism aims at generating fear among all possible targets of its attacks. Schmid (2011, p. 43) rightly observes that 'terrorists (…) target unarmed civilians and non-combatants deliberately to produce shock'. In other words, terrorist acts are aimed at generating fear among those who IS indicates as enemies by showing that anyone can be a victim of an attack. From a psychological point of view, terrorism plays on the fear that there is no possibility to escape indiscriminate violence (Marone, 2008, p. 233-236), to influence the actions of individuals. The second aim is that of *'conditioning',* which is to produce a stronger effect on society. Neumann and Smith (2005, p. 579) summarize this objective by stating that 'the strategy of terrorism primarily aims at overturning the most basic expectations of order and societal interaction, leaving the individual confused, fearful and alienated'. In other words, terrorists aim at changing the everyday life of people who belong to the same group of victims through fear. It might be that these elements of IS propaganda have resulted in a higher share of anti-IS content.

Drawing from the previous explanation, it is useful to investigate the aims of IS in targeting members of different communities (*Sunnī, Shīʿa, non-Muslims*) and explore how IS terrorist operations and crimes might have resonated in the three analysed audiences (*supporters, possible sympathisers, opposers/enemies*). Along with my interpretative framework, I argue that IS tried to achieve different goals *vis-à-vis* different audiences in targeting Sunnī or non-Sunnīs. My starting point is to look at this issue by referring to the literature on social identity theory that focuses on *in-group* and *out-group* dynamics. To discuss the literature on the topic is beyond the scope of this chapter, but it is worthwhile pointing out some key studies in this tradition of *in-group/out-group* dynamics. For example, Tajfel and Turner (1979) show that the mere act of categorizing people into groups is enough to lead to in-group favouritism and out-group derogation. Markovsky, Lawler (1994) discuss group solidarity in terms of two network properties: the relative directness of ties among actors and the homogeneity of those ties. Chang and al. (2014) show that people tend to give positive attributes to members of their community and, in some cases, attribute bad traits to members of others. This division between a good 'us' and a bad 'them' is widely exploited by terrorist organisations. In line with Schwartz (2009, p. 540) it emerges that terrorist propaganda requires 'having divided people into two categories: those whose interests are to be advanced through terrorist activities ("us") and those against whom the terrorist

activities are to be directed ("them")'. In other words, terrorist propaganda exploits pre-existing hostility by presenting their attacks against out-groups as legitimate to defend the entire community. I will discuss the exploitation of-pre-existing hostility in further detail in the next chapter, but it is worth anticipating that there is a pre-existing hostility to out-group members in the Arabic-speaking Twitter-sphere. I have some indications that confirm that hostility towards out-groups exists in the Arabic-speaking Twitter-sphere beyond the pro-IS network. The first I drew from my test set, where I have found that 16.08% of the tweets contain a certain degree of hostility towards Shīʿa or non-Muslims both in pro-IS and anti-IS tweets. The second is based on the results for the entire test-set, where I have found that hostility exists outside pro-IS supporters, as 73.27% of all tweets coded in second building blocks ('*The fight between the Sunnīs and their enemies is of a religious nature'*) include derogatory terms for non-Muslims and Shīʿi.

However, to interpret the terrorist attacks as exploiting hostility to out-groups and strengthening in-group solidarity provides only a partial explanation of IS' objectives in carrying out terrorist attacks and crimes. In-group/out-group dynamics alone do not explain the reasons for IS to attack mostly Sunnī civilians (*95 attacks against Sunnī and 88 against non-Sunnī*). This is particularly important when taking into consideration that support from the constituency that they claim to defend is detrimental for the success of a terrorist group (Cronin, 2009, p. 222). The division between *in-group* and *out-group* is particularly problematic in my study for four specific reasons. The first is that Shīʿa might not be seen as an *out-group* from the perspective of an average Sunnī user. Shīʿī define themselves as Muslim, and many fellow Sunnīs consider them members of the Muslim community. The second is that IS believes most Sunnīs to be outside Islam. This is because IS considers itself to be the legitimate Caliphate, which deems the entire Sunnī Muslim community and all the other schools of thought and political organisations to be outside Islam. They, therefore, consider all Sunnī to be legitimate targets because they are not seen as members of their community (Maggiolini and Plebani, 2015). The third is that my dissertation draws from the *'imagined community'* framework (Anderson, 2016), which defines the membership of an individual in a community as a subjective decision. In short, I argue that individuals can decide to solidarize with members of a group they consider to be part of their own imagined community', but they can also choose to put themselves outside a group. In short, one might feel part of the Sunnī community, identify oneself simply as a Muslim, or even refuse these labels altogether. In the case of IS and its supporters, the imagined Muslim community is that of all users who follow IS, which excludes all of those who are nominally Muslims. The fourth is that the previous model does not consider that one of the key objectives in carrying out terrorist attacks is to gain global attention. In the context of my study, IS has probably utilised terrorist attacks and crimes to increase its daily interactions among *'opposers/enemies'*. This is because IS does not have access to mainstream media, and it has tried to exploit them (Farwell, 2014; Semati and Szpunar, 2018) to gain access to a large audience. In the Twitter context, the aim of IS was also to generate wide discussion in the aftermath of attacks to gain a global reach for its message.

Drawing from the previous expositions on selected attacks and targets, I argue that '*IS terrorist attacks and crimes against non-Muslim targets* (*same day, following day*)*'* in the Arabic-speaking Twitter-sphere

resonated differently in the three audiences. When looking at *'opponents/enemies'*, I expected that it would have a small impact on the decrease of the positive sentiment towards IS. The starting point of my assumption is that these attacks did not target most of the members of the Arabic-speaking Twitter-sphere, except for Christians. Drawing from the idea of proximity (Kwon and all., 2017, p. 870), which I have explained in my discussion of the *'major victories of IS',* I expect that '*IS terrorist attacks and crimes against non-Muslim targets* (*same day, following day*)*'* did not *'condition'* the everyday lives of people in the Arab world, except for Christians and the Arab diaspora. I, therefore, did expect the limited decrease, mostly because of the participation of non-Muslim Arabs in the discussion about IS and a sense of solidarity from Sunnī Arabic-speaking users with victims of IS attacks, as most Arabs are likely to abhor IS crimes. Regarding the impact on *'possible sympathisers'*, I did not expect *any* impact on the decrease of the sentiment towards IS within the group, because while IS might have been successful in *'gaining attention'* for its attacks and crimes in this group and others, it is likely to have failed in *'acquiring support'.* I considered IS to be successful in increasing Twitter attention by carrying attacks and crimes against non-Muslim targets because I accounted for an increase of the daily interactions in the discussion (*80,944 against 77,786*) and single users per day (*30,082 against 26,355*). I did not consider the terrorist organisation to be successful in *'acquiring support'* because I accounted for changes of opinion in my sample to be unlikely, as I will discuss in further detail in the next part. Finally, I expected *that 'IS terrorist attacks and crimes against non-Muslim targets* (*same day, following day*)*'* would increase the positive sentiment towards IS among *'supporters'* because these operations *'consolidate the support for the organisation'*, by showing that IS is acting on behalf of the entire Islamic community against its enemies. Moreover, attacks in major cities aimed at *'outbidding other terrorist groups'* by demonstrating IS' capability to carry out a plurality of attacks.

When stating the overall impact of *'IS terrorist attacks and crimes against non-Muslim targets* (*same day, following day*)' it is worth stressing once again that the composition of the three groups differs in the entire test set and in the three phases (*peak, decline, defeat*). It follows that I expected that *'IS terrorist attacks and crimes against non-Muslim targets* (*same day, following day*)*'* to have a *'non-significant impact'* in the increase of the positive sentiment towards IS. This is because of the predominance of the '*opponents/enemies*' in the entire sample, which might have shown their opposition to IS. However, I did expect some differences in the influence of this determinant in the three analysed phases. During the phase of *'peak'*, I expected *'IS terrorist attacks and crimes against non-Muslim targets* (*same day, following day*)*'* to have a *'significant impact'* on the increase of the positive sentiment towards IS because of the higher participation of *'supporters'* in the discourse about the Islamic State, who might have been quite vocal in expressing their approval for the terrorist group. On the contrary, I expected a *'non-significant impact'* in the decrease of the positive sentiment towards IS in the phases of *'decline'* and *'defeat'* because of the higher share of contents published by *'opponents/enemies'* in comparison to *'supporters'*.

I expected the impact of *'IS terrorist attacks and crimes against Shīʿa targets* (*same day, following day*)*'* to be different from those against *'non-Muslims'*. This expectation is based on the fact that while IS considers

members of this religious denomination to be outside the Islamic community, Shīʿī see themselves as Muslims along with many Sunnīs. Furthermore, I estimated that 12.06% of all users in my test set are Arabic-speaking Shīʿī, as discussed in the previous parts of the thesis. Drawing from these two observations, I expected a large share of members of the Arabic-speaking Twitter-sphere to see attacks against Shīʿī as targeting members of their own *'in-group'* and strongly oppose them. It follows that I considered *'IS terrorist attacks and crimes against Shīʿa targets* (*same day, following day*)*'* to have had an impact on the decrease of the positive sentiment toward IS among *'opponents/enemies'*. I expected anti-IS users to react more vocally to attacks against Shīʿa than against non-Muslim targets, both because there is a larger share of Shīʿī in the Arabic-speaking Twitter-sphere than non-Muslims and Arab Sunnī users considering attacks against Shīʿī to be targeting the whole Islamic community because they do consider them as Muslims. When looking at the aforementioned category of *'intimidation'* and *'conditioning',* it is worth pointing out that a very large majority of *'IS attacks and crimes against Shīʿa targets* (*same day, following day*)*'* occurred in the Arab world, where most of the Arabic-speaking Sunnīs live. It follows that members of this group feared to lose their lives in IS-inspired attacks (*intimidation*), and, therefore, they largely suffered from the psychological effects of terrorism (*conditioning*). It follows that attacks against Shīʿa had no significant impact among *'possible sympathisers',* who are all Sunni and therefore not particularly interested in commenting on the attacks against members of this religious community. Interestingly enough, I did not observe an increase in the number of interactions (*70,670 against 77,786*) and unique users for a day (*25,221 against 26,355*) when considering the day which followed an attack against Shīʿa targets. It, therefore, seems that IS failed in *'gaining attention'* for its terrorist operations and crimes, except in the case of large attacks such as that in a Shīʿa mosque in Kuwait (BBC, 2015a) (*246,573 daily interactions, and 103,155 unique users for a day*) and al-Qaṭīf (Saudi Arabia) (Aljazeera, 2015b) (*294,681 daily interactions, 125,235 unique users for a day*). Moreover, I stated in the previous part that I consider the topic of IS to be highly divisive and, therefore, I expect that only a very small number of *'possible sympathisers'* changed their mind about IS. In other words, I do not think IS was successful in *'acquiring support'* in this group, which shares part of its ideology with the terrorist organisation. Finally, I argue that *'IS attacks and crimes against Shīʿa targets'* responded enthusiastically to the attacks of the terrorist organisation against a member of this religious community, and this would reflect on the increase of the positive sentiment towards IS within this audience. I do consider that these attacks served to *'consolidate the support for the organisation'* among *'supporters',* by showing that the Islamic State was acting on behalf of the entire Islamic community against its enemies. Moreover, attacks in major cities likely contributed to *'outbidding other terrorist groups*' by showing the capability of the IS in carrying out successful operations against members of the Shīʿa community.

Drawing from the observation that *'opponents/enemies'* comprise the largest group in the test set, I consider that *'IS terrorist attacks and crimes against Shīʿa targets* (*same day, following day*)*'* had a *'non-significant impact'* in the decrease of the positive sentiment towards IS in the entire period. Moreover, I did not expect any major differences in the impact of this determinant on the positive sentiment towards IS for the three phases of the analysis. This is because there were no attacks against Shīʿa targets in the *'peak'* phase, when

most of the tweets of '*supporters*' were published. For the other phases (*decline, defeat*), I expected *'IS terrorist attacks and crimes against Shīʿa targets* (*same day, following day*)*'* to have a *'non-significant impact'* in the decrease of the positive sentiment towards IS because of the predominance of contents published by *'opponents/enemies'* in these two phases.

Finally, I observed that *'IS terrorist attacks and crimes against Sunnī targets* (*same day, following day*)*'* were widely condemned in the Arabic-speaking Twitter-sphere, which resulted in a decrease of the positive sentiment towards IS in the *'opponents/enemies'* and *'possible sympathisers'.* The reason is that these attacks widely resonated in the Arabic-speaking Twitter-sphere where users are mostly Arab Sunnīs who are scared of losing their lives. In other words, I expected the Sunnī community to be the group in which IS attacks were the most successful in *'intimidating'* and *'conditioning'* the everyday life of millions of people. Furthermore, these terrorist operations determined a widespread condemnation. It is worth stressing that attacks against Sunnī were widely condemned also in the most radical Islamist and Salafi circles, and even the plurality of Jihadist groups disagreed with indiscriminate attacks against Sunnī civilians. For example, Hegghammer (2006, p. 27) stresses that even 'global Jihadists agreed (…) that Western armies and Iraqi security forces constitute legitimate targets and that Iraqi Sunnī civilians should not be targeted' in the first phase of the Iraqi war. It follows that I consider it very unlikely that IS were successful in *'acquiring support'* in the Arabic-speaking Twitter-sphere when carrying out attacks against Sunnī. When looking at *'supporters',* my hypothesis is that IS was very aware of paying the price in attacking Sunnī in terms of reputation, but it nevertheless aimed at gaining recognition in the *'supporters'* community by distinguishing its actions from those of other terrorist groups. In this respect, I expected attacks against Sunnī to have a *'significant impact'* in the increase of the positive sentiment towards IS among *'supporters'*. This is because attacks against members of this community served to *'outbid other terrorist groups*' by distinguishing IS from other terrorist organisation in the targets' selection. It also served to *'consolidate the support for the organisation',* by showing the capacity of the group to attack members of this community in several places.

Taking into consideration the previous exposition, I expected *'significant impact'* in the decrease of the positive sentiment towards IS. More in detail, I expected *'IS terrorist attacks and crimes against Sunnī targets'* to have a *'non-significant impact'* on the decrease of the positive sentiment towards IS in the *'peak'* phase, where the outrage of *'opponents/enemies'* and *'possible sympathisers'* was balanced by the high-presence of *'supporters'* in the test set. I expected a *'significant impact'* in the decrease of the sentiment towards IS in the *'decline'* and *'defeat'* phase when the impact of *'supporters'* was less prominent than in the first phase.

2.3.3. Determinants of sentiment towards IS: Twitter-related data

The last set of determinants that I am testing revolves around Twitter-originated data. Unlike the previous determinants, those are grouped in the *'Twitter-related data'* category because they do not directly link with specific actions of IS, but rather to a specific Twitter decision (*censorship*), user behaviours (*single users for a day, daily interactions*), and the positive sentiment per day which precedes the tested one (*lagged positive*).

In addressing the impact of these determinants, I, therefore, did not draw from the aims of IS in targeting the three analysed audiences, as in the two previous parts, but I concentrated my analysis exclusively on the expected impact that the *'single users for a day'*, *'daily interactions'*, the presence or absence of *'censorship'*, and *'lagged positive'* might have had for these three audiences to formulate the tested hypotheses. In the next part, I shall present all four determinants in detail and discuss their expected influence on sentiment towards IS. I carried out an additional check to verify the impact on these two specific determinants on the model and other determinants in appendix 2.

The first determinant I selected is that of '*censorship*'. Twitter was widely utilised in the first phase of IS expansion, but this platform became gradually more effective in closing pro-IS accounts to reduce the reach of its discourse[128]. The ban became particularly effective from mid-2015 when it is reported that Twitter closed thousands of pro-IS accounts (Broomfield, 2016). Although the platform did not publish the exact number of pro-IS accounts that were closed per day in the analysed period, I have used the conventional date of the 1st of March 2015 as a turning point for the implementation of effective censorship by Twitter. I chose this date because international media report that in that period, there was widespread censorship that targeted pro-IS accounts (Ross, Meek and Ferran, 2015). This was later confirmed by the company, which announced in April that it had implemented new filters to ban pro-IS accounts in the previous weeks (Hern, 2015). I conducted some additional checks on the date in appendix 2, where I assessed different dates for censorship.

Drawing from the discussion in chapter one, I argue that Twitter's ban of pro-IS accounts might have been one of the factors that influenced the decreasing number of *'single users per day'* and *'daily interactions'* that I observed in the Arabic-speaking Twitter-sphere about the Islamic State. Drawing from the tripartition of the audiences (*supporters, possible sympathisers, opposers/enemies*), I expect that *'censorship'* decreased in positive sentiment towards IS among *'supporters'* for three reasons. The first, and most obvious, is that Twitter closed many pro-IS accounts. The second is that the organisation gradually decreased its effort to spread its message by utilising this platform. The third is that the ban on pro-IS accounts probably convinced pro-IS users and IS propaganda to abandon the platform gradually from 2015 onwards. In analysing IS communication in 2015-2016, Shehabat, Mitew and Alzoubi (2017, p. 33) point out that 'IS supporters who have long used other mainstream social media platforms, such as Twitter, have been increasingly joining Telegram'. While it is not possible to establish the exact number of pro-IS accounts with my methodology, I argue that the observed decrease in both the number of *'single users per day'* and the percentage of pro-IS sentiment in the three-year period provides an indication of a demographic change in my test-set. Drawing from the assumption that it is very unlikely that many users changed their mind about the Islamic State, I argue that the observed decrease in the pro-IS sentiment was influenced by the censorship of pro-IS users. I have an indication of this finding when observing the sharp decrease in pro-IS tweets in my sample since February and the increasing fluctuation of pro-IS sentiment in that period (*see figure 1.5.*), which might be linked to Twitter

128 Twitter banned many pro-IS accounts in the entire period because most pro-IS users violated the terms of the platform but not always in an effective way.

censorship. Drawing from the previous discussion, my tested hypothesis is that censorship had an influence on *'supporters'*, while I considered censorship to have no impact on sentiment towards IS for *'possibly sympathisers'* and *'opposers/enemies',* which were not targeted by *'censorship'*. I, therefore, consider that, overall, censorship had a *'significant impact'* in the entire sample and in each period[129].

In analysing the expected impact for the determinant of *'single users for a day'*, I draw from the discussion of chapter one, which shows that there was a decrease in the number of *'single users per day'* in my sample (*figure 1.3.*). More in detail, there was quite a stable number of *'single users per day'* in the *'peak'* and *'decline'* phase (*52,731 single users per day for the peak phase compared to 49,872 single users per day in the decline phase*), while the positive sentiment towards IS sharply decreased in comparing the two phases (*34.38% in the peak phase and 17.71% in the decline phase*). The only phase in which I noticed a decline in both single users per day and positive sentiment towards IS was that of *'defeat'*, when the total number of '*single users per day'* was reduced by two-thirds from the previous phase (*16,680 single users for a day*) and positive sentiment towards IS decreased by a third (*12.18%*). Another finding discussed in the previous chapter is that the average positive sentiment towards IS for the days on which many users joined the discourse (*more than 100,000 single users for a day*) was quite similar (*15.03%*) to that for the average days (*15.59%*). Finally, as discussed in the previous part, I argue that the presence of censorship in the second phase of my test-set, along with a very similar number of users for the '*peak*' and '*decline*' phases, might indicate that pro-IS users were replaced by anti-IS users instead of users changing their opinion on IS. In this respect, I expect that the impact of *'single users for a day'* had a *'non-significant impact'* in all the three phases, but in two very different ways. In the first phase (*peak*), the *'single users for a day'* had a *'non-significant impact'* in the decrease of the positive sentiment towards IS, because censorship had not yet hit pro-IS accounts and, therefore, I consider that to explain the increase of *'single users for a day'*. I complemented this finding by testing the impact of the determinant *'censorship'* on *'single users per day'* (*appendix 2*). This is because there was a slightly higher percentage of *'anti-IS'* users who might have decided to join the conversation following specific events. On the contrary, I expected that for the '*decline*' and '*defeat*' phases, there would be a *'non-significant impact'* on the increase for positive sentiment towards IS. My expectation draws from the previous studies on IS supports often having several backup accounts (Berger and Morgan, 2015, p. 41). I expect that some of them tried to join the discourse again about IS in the Arabic-speaking Twitter-sphere and were registered in my test as *'single users per day'*. However, as I discussed in the previous part, I do not expect a *'significant impact'* of the determinants on the sentiment towards IS because I do not expect all *'single users per day'* to be IS *'supporters'* as some might have simply just joined Twitter or decided to share their opinion about IS in some occasions. In this respect, I identified an active network of pro-Saudi accounts which might have balanced the return of pro-IS accounts. Drawing from the observation that there was a divergent pattern in the three phases,

129 For the determinant of censorship, it does not make sense to look at the three phases (peak, decline, defeat) as I considered the period before February 2015 to have no censorship and the following one to have an impact on the test-set.

I consider this determinant to have had a *'non-significant impact'* on the increase of the positive sentiment towards IS in the entire period.

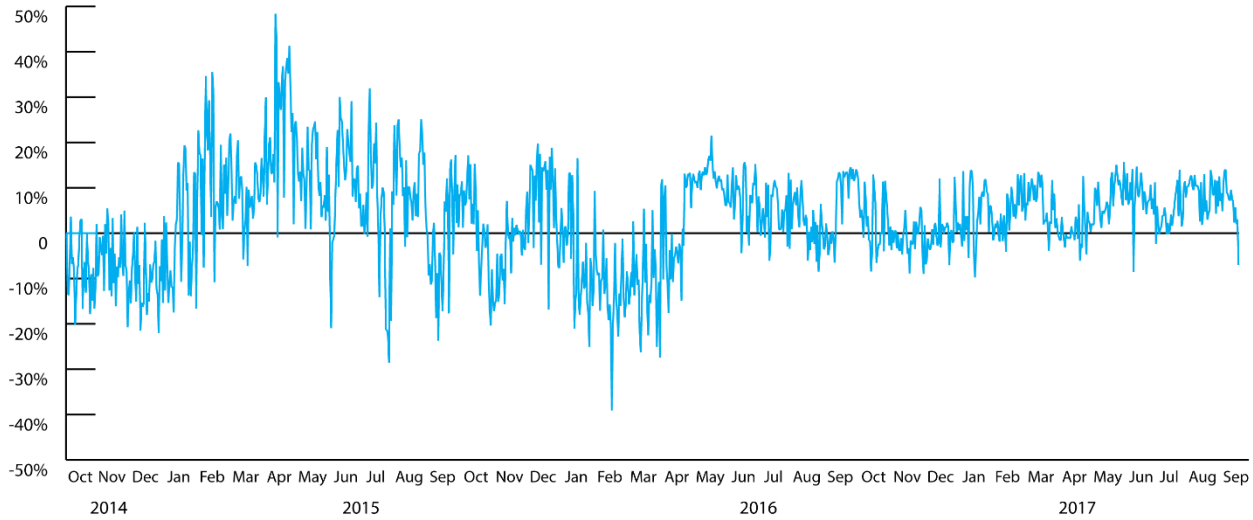
When looking at the number of *'daily interactions'*, I draw from the discussion in chapter one on the relations between the increase in the number of *'daily interactions'* and that of positive sentiment towards IS which shows an overall decrease in the three-year period, but with a different pattern for each phase. Unlike *'single users for a day'*, I noticed an increase in *'daily interactions'* when comparing the '*peak*' and the '*decline*' phases (*122,668 average daily interactions for the 'peak' phase compared to 200,779 daily interactions for the 'decline' phase*) but a decrease in pro-IS sentiment (*34.38% in the 'peak' phase and 17.71% in the 'decline' phase*). Similarly to *'single users for a day'*, the following phase was characterised by a less-sharp decrease of both support for IS (*12.18%*) and daily interactions (*42,645*). These findings suggest that there was a limited number of very active anti-IS accounts in the period between February 2015 and July 2015, which was also characterised by censorship of pro-IS accounts. More in detail, I expect that IS *'supporters'* were probably the most active in the *'peak'* phase, but that afterwards, censorship prevented them from publishing many tweets before their accounts were closed. More in detail, I expect that there was *'non-significant impact'* in the increase of the positive sentiment towards IS in the *'peak'* phase. This is because pro-IS tweets are lower than anti-IS tweets in absolute numbers, but the pro-IS users were more active in publishing tweets when compared to the anti-IS network in this phase, as I explained in chapter one (Helmus, Magnuson, and Winkelman 2016, p. 3). On the contrary, I expect that there had been a *'non-significant impact'* in the decrease of positive sentiment towards IS for the phase *of 'decline'* and *'defeat'*. This is because it was virtually impossible for IS *'supporters'* to publish many contents in a context of censorship, except for February 2015 and, therefore, any increase in *'daily interactions'* was probably linked to the participation of anti-IS users in the discourse. The previous observations point to the expected findings for *'daily interactions'* in the entire period, which is that an increase in *'daily interactions'* would have a *'non-significant impact'* on the decrease in pro-IS sentiment.

The determinant *'lagged positive'* is the value of positive sentiment towards IS on the day which precedes the tested one. For example, if the positive Sentiment towards IS is 30% on the 1st of January 2015 and 25% on the 2nd of January 2015, the tested *'lagged positive'* value for the 1st of January would be 25%. The determinant aims at testing for the data's temporal structure of the positive sentiment towards IS. I first observed that the positive sentiment towards IS follows a clear decreasing pattern, but it is also possible to spot a wide daily variation in the positive sentiment towards IS (*see figure 2.4.*). To correctly interpret the daily variance of the pro-IS Sentiment, I first calculated the average difference for the percentage of pro-IS tweets in each day and the average pro-IS sentiment in the entre test set (15.59%), which is ±5.02% in absolute terms. Second, I looked at the difference between the positive Sentiment towards IS for each day and the average positive Sentiment towards IS in the three phases (*peak: 34.38%, decline: 17.71% and defeat 12.18%*). The absolute difference widely changes in the three phases, and it is ± 3.91% in the peak phase, ± 5.18% in the decline phase, and ± 3.69% in the defeat phase from the average value. The figures give an indication that there was a

relatively high daily fluctuation for the daily positive sentiment towards IS. Furthermore, it indicates that for the overall pro-IS Sentiment, the wider variation was the highest in the *'decline'* and *'defeat'* phase in proportion to the overall positive sentiment towards IS. This figure also provides me with a preliminary indication that the percentage for the Sentiment towards IS for a day has an influence on that of the following day in the period of analysis. In other words, the pro-IS Sentiment was quite variant on a daily base. To better grasp the implications of this finding, it is useful to think of a hypothetical case where there is no variance from one day to another (e.*g. 30% positive sentiment towards IS for all days*). In this case, the determinant *'lagged positive'* would be 0 and, therefore, non-significant.

To provide a correct interpretation for this finding, I also looked at the demographic composition of the sample on a daily base. I noticed that the difference between the daily number of *'single users per day'* and the average number of *'single users per day'* in the three phases (*peak: 52,731, decline: 49,872, defeat: 16,680*) is quite high (*peak: +26,389, decline: + 23,530, defeat: -9,662*). This finding indicates that there was probably a core group of users who discussed IS for each of the phases, but also a significant group of *'single users per day'* who joined in the conversation on specific occasions. Drawing from the assumption that probably only a very limited number of users y changed their opinion about IS overnight, I expect that these limited daily changes have been mostly determined by changes in the demography of the sample. In other words, my interpretation is that the main determinants of change in the Sentiment might have been a limited number of users joining the conversation about IS only on specific occasions (*e.g. terrorist attacks against a member of their own group*) and pro-IS *'supporters'* being banned from the platform. Furthermore, I believe that an increase in the daily variation of pro-IS Sentiment when compared to the average value might also reflect a general attempt of IS supporters to join the conversation with their back-up accounts following censorship (Berger and Morgan, 2015, p. 41). These users might have tried to share their contents, but the Twitter ban might have occurred within a day. I have indirect confirmation of this hypothesis when calculating the percentage difference in the number of '*single users for a day'* on a daily base. This is 22.23% in the pre-censorship period and 26.43% in the post-censorship period. Despite not providing ultimate proof for my hypothesis, these figures seem to confirm that the variance was linked, up to a certain extent, to pro-IS users joining the discourse about IS and being banned shortly after following the censorship. Taking into consideration the previous discussion on the high variance of the positive sentiment towards IS, I state that the determinant *'lagged positive'* had a *'significant impact'* in all the three *'phases',* with a less prominent effect in the *'peak'* phase. It follows that I expected that the *'lagged positive'* to have a *'significant impact'* in the increase of the Sentiment towards IS.

Figure 2.5.: Daily variation of the positive sentiment towards IS



2.7. Methodology

In the previous explanation, I have discussed the tested determinants, the expected findings and, for some of the determinants, the reasons for IS in broadcasting its actions in the Arabic-speaking Twitter-sphere. For the test-set, I relied on the sentiment analysis of daily positive sentiment for IS, which I carried out for the previous chapter. I have discussed in detail my methodology, but it is worth recalling how I obtained the results for the Sentiment towards IS. I rely on a database of 32 million and 700 thousand tweets, which represents 33.3% of all tweets about IS in the period between October 2014 and October 2017. I filtered the entire dataset by excluding contents which revolve around pornography. This filtering reduced the sample to 28 million and 418 thousand tweets (*33.3% of all tweets which discuss IS in the tested period*). From the filtered test-set, I extracted 5,000 tweets which I manually coded to create the training set. I trained the entire test-set by relying on the manually coded training set to carry a probabilistic estimation for the sentiment about IS. To test whether the selected determinants had a significant influence on the positive sentiment towards IS I included all of them in a model to test their impact for the entire period for each of the three phases (*peak, decline, defeat*). I compared the results between OLS and Fractional Logit, given that my DV ranges between 0 and 1, and I have verified that there is no significant difference (*appendix 2*).

To carry the statistical analysis, I utilised the Stata software. I considered a determinant to have had a *'significant impact'* when the p-value is inferior to 0.10. For the *'non-significant impact'* I accounted for those determinants which had no or a limited impact on the positive sentiment towards IS. For the discussion about the findings, I drew from the previous explanation in formulating my hypotheses. For the entire tested-period, I first controlled for the *'IS military fate'* determinants, which include *'IS major military victories* (*same day*)*', 'IS major military victories* (*following day*)*','IS major military losses* (*same day*)*' and 'IS major military losses* (*following day*)*'*. I expected *'major military victories* (*same day, following day*)*'* to have a *'significant impact'*

on the increase of the positive sentiment towards IS and *'major military losses* (*same day, following day*)*'* to have a *'significant impact'* on the decrease of the positive sentiment towards IS. Second, I controlled for the three determinants of *'targets selection in IS' major terrorist attacks and crimes'*, which includes *'attacks and crimes against Shīʿa targets* (*same day, following day*)*', 'Attacks and crimes against non-Muslim targets* (*same day, following day*)*'* and *'attacks and crimes against Sunnī targets* (*same day, following day*)*'*. I expected *'attacks and crimes against Shīʿa targets* (*same day, following day*)*'* to have a *'non-significant impact'* in the decrease of the positive sentiment towards IS. I expected *'Attacks and crimes against non-Muslim targets* (*same day, following day*)*' to* have a *'significant impact'* on the increase of the positive sentiment towards IS. I expected *'attacks and crimes against Sunnī targets* (*same day, following day*)*'* to have a *'significant impact'* on the decrease of positive sentiment towards IS. Third, I controlled for the *'Twitter-related data'*, which includes *'censorship', 'single users per day'*, *'daily interactions', and 'lagged positive'.* I expected that *'censorship'* has had a *'significant impact'* on the decrease of the positive sentiment towards IS. I expect *'single users per day'* to have *'non-significant impact'* on the increase of the positive sentiment towards IS. I expected *'daily interactions' to* have a *'non-significant impact'* on the decrease of the positive sentiment towards IS. I expected *'lagged positive'* to have a *'significant impact'* on the increase of the positive sentiment towards IS.

For the *'peak'* phase, I do expect that *'IS major military victories (same day, following day)'* have had a *'significant impact'* in the increase of the positive sentiment towards IS and *'major military losses (same day, following day)'* have had a *'non-significant impact'* in the decrease of the positive sentiment towards IS. Furthermore, I do not expect any effect of *'attacks and crimes against Shīʿa targets (same day, following day)'*, which did not occur in this period. For *'IS Attacks and crimes against non-Muslim targets (same day, following day)',* I do expect a *'significant impact'* in the increase of the positive sentiment towards IS. For *'IS attacks and crimes Sunnī targets (same day, following day)'*, I do expect a *'non-significant impact'* in the decrease of the positive sentiment towards IS. For the determinant of *'censorship'*, I expect a *'significant impact'* on the decrease of the positive sentiment towards IS. For the determinant of *'single users per day',* I do not expect any significant impact on the positive sentiment towards IS[130]. For the determinant *'daily interactions'*, I expect a *'non-significant impact'* on the increase of the positive sentiment towards IS. For *'lagged positive'*, I expect a *'significant impact'* on the increase of the positive sentiment towards IS.

For the *'defeat'* and the '*decline'* phase, I did not expect any impact *'IS major military victories* (*same day, following day*)*'*, as there was no victory of IS in that period. For *'IS major military losses* (*same day, following day*)*',* I expected a *'significant impact'* in the decrease of the positive sentiment towards IS. For *'IS Attacks and crimes against non-Muslim targets* (*same day, following day*)*'* and *'IS attacks and crimes against Shīʿa targets* (*same day, following day*)*'* I expected a 'non-significant impact' in the decrease of the positive sentiment towards IS. For *'IS attacks and crimes Sunnī targets* (*same day, following day*)*'*, I expected a *'significant impact'* in the decrease of the positive sentiment towards IS. For the determinant of *'censorship'*, I did not account for any impact on the decrease of the positive sentiment towards IS. For the determinant of

131 I do not take into account censorship for this period because censorship have been in place only one month.

'single users per day', I expected a *'non-significant impact'* in the increase in the positive sentiment towards IS. For *'daily interactions'* I expected it would have a *'non-significant impact'* on the decrease of the positive sentiment towards IS. For *'lagged positive'*, I expected a *'significant impact'* on the increase of the positive sentiment towards IS.

2.5. Findings for the entire period

Table 2.2: OLS results for the entire period of analysis

DETERMINANTS	(1) Positive
Lagged Positive	0.725794***
	(0.026887)
Single users per day	0.000010
	(0.000028)
Daily Interactions	-0.000000
	(0.000007)
Censorship	-4.303165***
	(1.084409)
Attacks and crimes against Shīʿa targets (same day)	0.385916
	(0.888368)
Attacks and crimes against Shīʿa targets (following day)	1.540531
	(0.979599)
Attacks and crimes against Sunni targets (same day)	0.713247
	(0.844397)
Attacks and crimes against Sunni targets (following day)	-0.116069
	(0.790175)
Attacks and crimes against non-Muslim targets (same day)	-1.518132
	(1.169169)
Attacks and crimes against non-Muslim targets (following day)	2.637018**
	(1.122046)
Major military victories (same day)	-5.533462
	(5.528832)
Major military victories (following day)	6.726776**
	(2.689354)
Major military victories losses (same day)	-1.698278
	(2.077401)
Major military victories losses (following day)	-3.096155
	(2.802288)
Constant	7.589091***
	(1.337045)
R-squared	0.638801

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The previous analysis (*Table 2.2.*) shows that significant determinants for my test set have been found in the entire period, which are '*censorship*', '*lagged positive' 'attacks and crimes against non-Muslim targets* (*following day*)*'*, and '*major military victories* (*following day*)*'*. More in detail, the OLS regression confirms my expectation that the determinant of *'censorship'* had a *'significant impact'* on the decrease of the positive Sentiment towards IS for an average value of 4.28%. Drawing from the previous explanation, the finding confirms that the Twitter censorship of the IS supporters accounts had an influence in a decrease of the positive sentiment. The other determinant which had a *'significant impact'* is that of *'lagged positive'* which determined an increase of the positive sentiment towards IS, illustrating that for an increase of 1% in the percentage of positive Tweets on the day before the tested one, there is an increase of 0.72% for the positive Sentiment towards IS. Drawing from the previous analysis, I argue that the significant impact of the *'lagged positive'* links to a high daily variance in the Positive Sentiment towards IS. In other words, the percentage of positive Tweets widely differed from one day to another. For *'major military victories* (*following day*)*'* and *'attacks and crimes against non-Muslim targets* (*following day*)*'*, I observed a *'significant impact'*. This is respectively an increase of 6.72% and 2.63% of the positive sentiment towards IS. These figures point to three observations. The first is that it took around one day for *'supporters'* to react to the IS expansion and terrorist operations against non-Muslims by stating their support for the organisation, which is highly likely when taking into consideration the viral Twitter dynamics. The second is that *'IS military victories'* galvanised IS supporters who probably over-reacted to the news. In other words, the IS victory projected an image of strength for the group, which led to an increase of the positive sentiment towards IS. The third is that users reacted differently to different targets of the attacks. In other words, the results seem to confirm the 'in-group' and 'out-group' in the sentiment towards IS, as I will discuss in the next part.

Interestingly enough, none of the other determinants had a significant impact on the increase or decrease of the positive sentiment towards IS. Contrary to my expectations, the determinant '*major military losses* (*same day, following day*)*', 'attacks and Crimes against Shīʿa Targets* (*same day, following day*)*'*, and *'attacks and Crimes against Sunnī Targets* (*same day*)*'* had a *'non-significant impact'* on the sentiment towards IS. In the case of *'attacks and Crimes against Shīʿa Targets'*, and *'attacks and Crimes against Sunnī Targets'* the impact of the determinant is very limited, but nevertheless, two elements can be observed. The first is that a difference can be observed in the impact of attacks against Shīʿa targets (*+0,38% on the same day, + 1,54% on the following day*) which is higher than that against Sunni (*+ 0,71% on the same day, - 0,11% on the following day*). The second is that attacks against Sunni seem to have produced higher resentment towards IS on the following day, which confirms that this type of attack is widely condemned in the community. For '*major military losses',* the determinant had a *'non-significant'* impact on the decrease of the positive sentiment towards IS (*-1.69% on the same day, -3.09% on the following day*), which can be easily explained by relying on the prevalence of *'opponents/enemies'* and *'possible sympathisers'* in the sample. These users probably expressed their negative opinions about IS when the group was losing ground. For all the other determinants, the finding confirms my hypothesis with a partial exception of *'daily interactions'*, which had a *'non-significant'* impact in the decrease of the positive sentiment towards IS (*0.00*). *'Single users per day'* had a

'non-significant' impact in the increase of the positive impact towards IS (*0.10 for an increase of 10,000 single users per day*), while *'daily interactions'* had no impact at all on the positive sentiment towards IS.

There might be two ways of explaining the aforementioned results; the first is that there simply was no significant effect on the positive sentiment towards IS for all the variables which appeared as non-significant; the second is that these determinants had a different impact for different phases and therefore there are different patterns for each phase which result in an overall *'non-significant'* impact. This explanation draws from the afore-mentioned observation that IS political development in the analysed period passed through a plurality of phases because of the internal (*e.g. censorship*) and external conditions (*e.g. military retreat of IS*). To investigate further this issue, I have divided my test set into three phases: (*peak*, *decline*, *defeat*). I will discuss the findings at the end of the chapter.

2.5.1. Findings for the peak phase

Table 2.3: OLS results for the peak phase of analysis

DETERMINANTS	(1) Positive
Lagged Positive	0.361130***
	(0.102247)
Single users per day	0.000151*
	(0.000082)
Daily Interactions	-0.000147***
	(0.000026)
Censorship	-
Attacks and crimes against Shīʿa targets (same day)	-
Attacks and crimes against Shīʿa targets (following day)	-
Attacks and crimes against Sunni targets (same day)	1.990491
	(2.709572)
Attacks and crimes against Sunni targets (following day)	-3.072756
	(3.068940)
Attacks and crimes against non-Muslim targets (same day)	-0.616442
	(2.326476)
Attacks and crimes against non-Muslim targets (following day)	2.886924
	(1.903919)
Major military victories (same day)	6.153330**
	(2.587607)
Major military victories (following day)	1.625565
	(1.949111)
Major military losses (same day)	-2.078601
	(6.351767)
Major military losses (following day)	5.537751
	(7.893710)
Constant	31.672627***

	(5.476439)
R-squared	0.554423

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The *'peak phase'* (*October 2014 - January 2015*) was characterised by decisive victories of IS and the absence of effective censorship from Twitter. This phase shows a very different impact of the determinants when compared to the entire period. The *'lagged positive'* still has a *'significant impact'* on the positive sentiment towards IS, while censorship cannot clearly be tested because it was not in place in this phase. The *'significant impact'* and positive influence of '*lagged positive'* on the '*positive sentiment towards IS'* confirms that there has been a high daily variation from a day to another, but this variation (0.36%) is less prominent than in that of the entire test-set (0.72%). This finding, which is also evident by looking at the daily value for the positive sentiment towards IS (*figure 1.5.*) does not widely differ from that of Ceron and al (2018), who found that the '*sentiment deviation lag'* in their sample is non-significant in the period between June 2014 and January 2015 (0.09%). I argue that my results are similar to those of the afore-mentioned authors because I have also found a lower variance (±3.15%) in the first three months when compared to the last one (January 2015: ±6.15%). It is thus highly likely that Ceron and al. (2018) found a similar pattern to that of my first three months for the period which has not been included in the analysis (*June 2014 - September 2014*). This element also points to a possible interpretation for my results, which links to the absence of effective *'censorship'* of pro-IS accounts in the entire period of my sample and that of Ceron and al. (2018). It is highly possible that the lower degree of variance which I found for the first phase when compared to the following months, links to the ban of pro-IS accounts. In a nutshell, my interpretation is that the absence of effective censorship has determined that IS *'supporters'* accounts have maintained their presence in the discourse about IS relatively constant for the analysed period. Starting from winter 2015, it is possible to observe an increase in the daily variance of the positive sentiment towards IS. IS probably tried to join the Twitter discourse again by utilising backup accounts and were banned in different phases (Berger and Morgan, 2015, p. 41).

When looking at the other determinants, the findings confirm that '*major military victories* (*same day*)*'* had a *'significant impact'* on the increase in the positive Sentiment towards IS (+6.15%). Drawing from my previous explanation, the presence of a *'major military victories* (*same day*)*'* had boosted the enthusiasm of the Islamic State *'supporters'* in a phase when there was no censorship and they could freely share their positive stance towards IS in the absence of effective censorship. The determinant probably had a significant impact because, contrary to my expectation, *'opponents/enemies' and 'possible sympathisers'* were not less active in balancing the spread of pro-IS contents from *'supporters'* than I expected. This dynamic is further confirmed when looking at the determinant *'single users per day'*, which had *'significant determinant'* in the increase of positive sentiment towards IS. More specifically, I found that a *'significant impact'* in the increase of 10,000 users (*average for the period 49,872 for a day*) provides a 1.51% increase for the Positive Sentiment towards IS. My explanation is that there was a very active network of IS *'supporters'* in comparison to that of

'opponents' and *'possible sympathisers'*. In other words, there has been an increasing network of pro-IS users in the sample who were capable of delivering a constant flow of pro-IS contents in the entire phase. This is linked to the presence of a wide network of supporters of pro-IS accounts, which likely also include bots (Moriarty 2015). The last significant determinant is that of *'daily interactions'* where I account for a *'significant impact'* on the decrease of positive sentiment towards IS in this phase. In other words, an increase of 10,000 daily interactions provides a decrease of 1.47% in the positive sentiment towards IS. This points to the presence of a very active network of anti-IS accounts, probably mostly pro-Saudi, which is more active than the pro-IS sample in this phase. This is an interesting finding because previous studies have only pointed out that the IS propaganda accounts were very active in the analysed period, but my findings also show that the same seems to be true for its *'opposers/enemies'*.

Finally, the results for the *'peak'* phase show that all the determinants which revolve around '*IS targets of major attacks and crimes* (*same day, following day*)*'* are non-significant. This points to an interesting finding of my dissertation, which is that the IS targeting different groups does not provide a wide difference in the support in this phase, and that the reception of attacks against Sunnī and non-Muslim was quite similar, while no attack against Shīʿa was recorded in this phase. I believe that this is the result of a balanced action between '*supporters*' on one side and '*possible sympathisers'* and *'opposers/enemies'* on the other. The first group were probably more active in sharing its support for IS actions, while the second and third were most probably more active in condemning these attacks. The other determinant, which is non-significant in my sample, is that of *'major military losses* (*same day, following day*)*'* which, contrary to my hypothesis, had a 'non- *'significant impact'* in the increase of the positive sentiment towards IS. I interpret this finding by pointing to the perceived image of power, which IS was able to project in the analysed phase. In other words, *'major military losses* (*same day, following day*)*'* were not interpreted in the Arabic-speaking Twitter-sphere as indications of a forthcoming *'decline'* of the terrorist organisation, but as a negative episode in the IS war against its enemies. The finding also confirms that the network of supporters was more active than that of *'possible sympathisers'* and '*opponents/enemies'*.

2.8. Findings for the decline phase

Table 2.4.: OLS results for the decline phase of analysis

DETERMINANTS	(1) Positive
Lagged Positive	0.633346***
	(0.066169)
Single users per day	0.000082
	(0.000058)
Daily Interactions	0.000006
	(0.000015)
Censorship	1.419878

	(1.459772)
Attacks and crimes against Shīʿa targets (same day)	-3.179962
	(2.414111)
Attacks and crimes against Shīʿa targets (following day)	2.326500
	(2.950411)
Attacks and crimes against Sunni targets (same day)	3.520069
	(3.487207)
Attacks and crimes against Sunni targets (following day)	-0.926849
	(1.752430)
Attacks and crimes against non-Muslim targets (same day)	-2.758922
	(3.049428)
Attacks and crimes against non-Muslim targets (following day)	0.548472
	(6.160726)
Major military victories (same day)	-7.986455***
	(2.478924)
Major military victories (following day)	2.043299
	(2.461027)
Major military losses (same day)	-2.350240
	(1.514082)
Major military losses (following day)	-1.488783
	(1.263397)
Constant	0.284449
	(2.459465)
R-squared	0.491333

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The *'decline phase'* (*February 2015 - July 2015*) is a phase of IS political development when the territory controlled by the terrorist organisation started to shrink, following the defeat in Kobane/Ayn-al-Arab. This phase shows some interesting dynamics when compared to the previous phase (*peak*) and the entire period. First of all, *'lagged positive'* had a *'significant impact'* also in this phase but the influence of this determinant on the increase of the positive sentiment towards IS is higher than in the previous phase (*0.63% compared to 0.36%*), which confirms my expectation that there was a higher variance in this phase because of IS supporters accounts first joining the conversation following the ban and then being censored by the platform. Unlike the entire period, the determinant *'censorship'* is non-significant, but this is simply because there was only one month (*February 2015*) in which there was no censorship. I do not, therefore, consider it to be a very informative finding.

Another finding of this phase has been that among all determinants which revolve around the '*IS military fate'*. *'Major military victories* (*same day, following day*)*'* and *'major military losses* (*same day, following day*)*'*, only 'Major military victories (*same day*)' had *'significant impact'* in the decrease of the positive sentiment towards IS (*-7.98%*). Drawing from the previous results, my interpretation is that the *'decline'* phase has been highly characterised by the impact of censorship. It follows that there has been a high increase of *'opposers'* and *'possible sympathisers'* in the sample, which reflected on the results of the *'decline'* phase;

in other words, the reason why the impact of the two determinants, contrary to my hypotheses, links to the predominance of the anti-IS network in this phase. In a nutshell, I believe that *'major military victories* (*same day*)*'* had a *'significant impact'* in the decrease of the positive sentiment towards IS because of a 'fear effect' in the Arabic-speaking community. An indication of this is that the same effect was not repeated the following day. In other words, the perceived strength of IS probably generated apprehension in the anti-IS audience, who might have reacted negatively to the perceived advance of IS. The same *'significant impact'* on the positive sentiment towards IS can also be spotted in relation to *'major military losses',* which also shows a decrease of the negative Sentiment towards IS. This last element can be easily explained by the sense of relief of many anti-IS account users for IS losses in the *'decline'* phase.

When looking at the determinants which revolve around '*IS targets of major attacks and crimes'*, it is very interesting to notice that none of these had a *'significant impact'* on the positive sentiment towards IS. To better understand the findings, it is interesting to concentrate on the reactions to IS attacks against Shīʿa and Western targets (*same day*), which determined a non-significant decrease of pro-IS sentiment on the positive sentiment towards IS (*-3.17% and -2.75% respectively*) To appreciate this finding, I draw from the observation that some of these attacks (*e.g. attacks against a Shīʿa mosque in al-Qaṭīf and Kuwait*) received a wide response on the day of the attack in my sample (*attacks against a Shīʿa mosque in al-Qaṭīf: 103,155 single users per day, 246,573 daily interactions*). It is, therefore, highly likely that both Sunnī users and Shīʿa users have voiced their solidarity for the Shīʿa community following IS terrorist operation and the same can be said for Western communities. This is consistent with the finding of Siegel (2015b), who reported the highest peak in the counter-sectarian rhetoric in concomitance with the attacks against Shīʿa Mosque. Drawing from the presence of a wide anti-Shīʿa sectarian discourse in the training set, my interpretation is that users witnessed the fact that there has been a widespread anti-Shīʿa rhetoric and therefore decided to fight back. The lack of significant influence on Non-Muslims and Sunnīs might be linked to different reasons.

Finally, I accounted for the determinants which revolve around the '*composition of the test set'* of *'single users per day' and 'daily interactions':* both had a *'significant impact'* in the increase of positive sentiment towards IS. More specifically, I account for an increase of 0.82 and 0.06, respectively for each increase of 10,000 unique users. In my interpretation, this finding confirms that there were frequent attempts by IS supporters to join the conversation following the censorship. For those days on which these accounts were able to join the conversation, the positive sentiment towards IS is higher. The fact that *'daily interactions'* are practically non-significant points in the same direction.

2.5.3. Findings for the defeat phase

Table 2.5.: OLS results for the defeat phase of analysis

DETERMINANTS	(1) Positive
Lagged Positive	0.709993***
	(0.035180)
Single users per day	-0.000124***
	(0.000032)
Daily Interactions	0.000021**
	(0.000008)
Censorship	-
Attacks and crimes against Shīʿa targets (same day)	1.343621
	(0.932683)
Attacks and crimes against Shīʿa targets (following day)	1.103973
	(0.964498)
Attacks and crimes against Sunni targets (same day)	-0.045540
	(0.801366)
Attacks and crimes against Sunni (following day)	0.517876
	(0.826256)
Attacks and crimes against non-Muslim targets (same day)	0.038468
	(1.310106)
Attacks and crimes against non-Muslim targets (following day)	1.581781
	(1.113724)
Major military victories (same day)	-
Major military victories (following day)	0.000000
	(0.000000)
Major military losses (same day)	-3.352694***
	(0.895681)
Major military losses (following day)	-2.136155
	(1.708962)
Constant	4.568815***
	(0.543424)
R-squared	0.521483

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The *'defeat phase'* is characterised by the failure of the IS state project, as the terrorist organisation lost any piece of land which they previously occupied. This phase, which includes the higher number of days in my sample, broadly shows the most similar pattern of influence of the determinants on the positive Sentiment towards IS to the entire period. However, there are also some interesting differences in this phase when compared to the entire period. Before analysing the results in detail, it is worth pointing out that there are no

results for the determinants of *'censorship'* and *'major military victories'* because censorship was implemented for the entire period and IS did not achieve any major military victory in this specific phase.

When looking at the determinants regarding the '*composition of the test set',* it is interesting to note that all determinants had a *'significant impact'* on the sentiment towards IS, but they all had a divergent influence. The determinant *'lagged positive'* shows a similar pattern to that of the previous phase, as an increase of one unit for the positive sentiment towards IS had a significant and positive influence of 0.71% on the positive sentiment towards IS for that specific day. When accounting for the determinant of *'single users per day',* I observed for an increase of 10,000 users that the positive sentiment towards IS decreased by an average of 1.12. My interpretation is that this phase is not characterised by IS supporters joining the discourse and being banned shortly after, so those users who join the conversation in specific occasions are mostly accounts of *'opponents'* and *'possible sympathisers'* who decide to comment on the current events in specific occasions (e.g. terrorist attacks, mass protests). On the contrary, I interpreted the increase of 0.21 in the positive sentiment towards IS for 10,000 interactions to be mostly due to a residual of pro-IS accounts and bots sharing pro-IS contents on the platform.

For the determinants which revolve around *'IS military fate'*, I verified that *'IS major military losses'* had a *'significant impact'* on the decrease of positive sentiment towards IS only on the following day. My understanding of this finding is that the entire period was characterised by a military retreat of IS, and so *'IS major military losses'* have not dramatically changed the sentiment towards IS with the exception of some opponents still discussing the issue. Finally, the statistical analysis of this phase shows that all the determinants which revolve around '*IS targets of major attacks and crimes'* are non-significant, with the exception of *'attacks against Non-Muslim targets* (*following day*)*'*. I think this was mostly due to residual pro-IS supporters who were still present in the conversation. Overall, my impression is that Arabic-speaking users lost interest in discussing the Islamic State progressively, also in the aftermath of major attacks and crimes. In other words, terrorist attacks and crimes did not change much the overall perception about IS in the sample during this phase. I have an indication of that by looking at the average number of single users per day and daily interactions in this phase (*42,645 average daily interactions, 16,680 single users per day*), which was much lower than the two previous phases (*122,668 average daily interactions, 52,731 single users per day for the peak phase; 200,779 average daily interactions, 49,872 single users per day for the defeat phase*).

2.6. Conclusions

The previous analysis demonstrates that only the determinants of *'censorship'*, *'lagged positive', 'major military victories* (*following day*)*' and 'Major military victories* (*following day*)*'* had a *'significant impact'* on the overall sentiment towards IS. Furthermore, it shows that the significance and impact of the fourteen tested determinants on the positive sentiment towards IS have widely differed in the three phases of the sample. My interpretation is therefore that the widespread censorship of IS, the daily variation of the positive sentiment

towards IS and the different dynamics in the political development of the Islamic State had changed the internal discourse in the sample. More specifically, my findings indicate that the absence of censorship and the relatively high presence of pro-IS accounts when compared to the entire period reflect on the findings for the *'peak'* phase, when there is a lower variance of the positive sentiment from one day to another than in the entire period, and IS victories have significantly influenced the increase of the positive Sentiment towards IS. These dynamics radically changes in the decline period, when IS accounts were increasingly targeted by Twitter censorship. The tested determinants point to an increasing impact of anti-IS accounts (*'opposers'* and *'possible sympathisers'*) to the overall sentiment towards IS. I have an indication of this pattern when looking at the *'significant impact'* of *'IS major military losses'* in the defeat period. Finally, the last period of analysis shows that all of the determinants about exogenous events are significantly limited. I think this is mostly because IS actions captured less the attention of the audiences, which was mostly that of *'possibly sympathises'* and *'opposers/enemies'* due to censorship being implemented on Twitter for a long time.

The findings clearly suggest that the composition of the participants in the discourse about IS has widely changed over the three-year period, which is one of the main reasons for the decrease in the positive sentiment towards this terrorist organisation. The differences in the significant (or non-significant) impact of the selected determinants in the three phases also point to the importance of the changes regarding the perceived strength of the terrorist organisation. Finally, the findings show that the analysed three-year phase includes a wide variety of social dynamics regarding the discourse about the Islamic State for each of the tested phases. This is a finding that points to the importance of accounting for the political context in analysing the determinants of sentiment towards IS and an element which indicates once again the importance of including different phases in the study or at least, accounting for the political environment of the tested period and the composition of the test set when looking at the Twitter discourse about IS.

Chapter Three: The Role of Anti-Shīʿa Discourse in Support for and Opposition to the Islamic State

'The origin of all sedition and calamity is Shīʿī and their allies, and many of the swords unleashed against Islam come from them' (Ibrahim al-Fares, ì 2015[131])

On Friday 22nd May 2015, around 150 people gathered in a small Shīʿa mosque of al-Qudaih, a residential area in the outskirts of the Saudi city of al-Qaṭīf. An IS terrorist infiltrated among them and blew himself up in the little crowd. He killed 22 civilians, making the al-Qaṭīf attack one of the deadliest in the recent history of Saudi Arabia. The terrorist operation received extensive coverage in both local and international media and has been discussed by thousands of users in the Arabic-speaking Twitter-sphere. On the day which followed the attack, the average daily interactions which utilised sectarian words against the Shīʿī in the discussion about IS reached 21,372 tweets[132], which accounts for an increase of more than five times in the average daily number of tweets. The al-Qaṭīf triggered the Twitter discussion on sectarianism (طائفية) and the role of IS in spreading religious-based violence (Siegel, 2015). The framework of sectarianism has already been utilised to indicate hostility of states ruled by Shīʿa political leaders, or Shīʿa organisations and individuals, towards states ruled by Sunnī political leaders, or Sunnī organisations and individuals and vice versa. The sectarian framework has become extremely popular since the Iraqi war in 2003 to analyse regional and local events (Haddad, 2013; 2014). At a regional level, sectarianism has been one of the paradigms to understand the current rivalry between Sunnī-majority Saudi Arabia and Shīʿa-majority Iran. At a local level, sectarianism has served as an interpretative tool to describe hostility between Sunnī and Shīʿa political movements in some Arab countries. In this context, the al-Qaṭīf attack was mostly understood as an attempt to exploit current Sunnī resentment against Shīʿa, both to fuel regional instability and to portray IS Jihād as a legitimate war in the name of all Sunnīs against Shīʿa enemies.

This chapter looks at the influence of the anti-Shīʿa sectarian discourse on the support for IS in the Arabic-speaking Twitter-sphere. More specifically, it aims to test whether there is a higher or lower degree of support for IS and its ideology in the anti-Shīʿa test set in comparison to the total test set and to analyse in which ways these two samples differ. I have chosen to focus on Twitter because I consider this platform to be the most suitable for acquiring information on sectarianism due to its public and transnational characteristics. I have

131 Ibrahim al Fares (2015), 14 June. Available at: https://Twitter.com/ibrahim_alfares/status/610155392820064256 (Accessed: 29 July 2019).

132 The tweets in my test set account for 7,194, which is 33.3% of the total tweets about IS containing sectarian terms. As I discussed in the previous part, my sample contains 33.3% of the entire tweets published in the Twitter discourse about IS.

For the entire chapter, I have reported the data on users, daily interactions and the difference between the two values by multiplying them by 3.

chosen to look at the anti-Shīʿa sectarian discourse because I consider this sample to be potentially more receptive of the IS discourse for three reasons. The first is that IS diverges from Qāʿida because it has prioritised the fight against the Shīʿī *vis-à-vis* the West (Roy, 2017, p. 80). The second is that the anti-Shīʿa discourse is shared both by IS and competing ideologies (Abdo, 2013, 2015; Siegel, 2015) and therefore IS propaganda probably targeted this group because it considers them as *possible sympathisers*. Drawing from the afore-mentioned building block theory, I argue that those who engage in this discourse already believe that *enemies are hostile towards Islam and the Sunnī community* and that *the fight between the Sunnīs and its enemies is of a religious nature.* It follows that IS propaganda could be exclusively focused on convincing them of the legitimacy of IS and its Jihād. Third, the anti-Shīʿa sample virtually excludes non-Sunnī Arabic-speaking users (*e.g. Shīʿa, Christians*)*;* I estimate that 12.06% of the total interactions have been published by non-Sunnī users[133].

To answer the question about the influence of the anti-Shīʿa sectarian discourse on the support for IS in the Arabic-speaking Twitter-sphere, I extracted a subset of 1 million, 443 thousand tweets, which I took from the larger database of 32 million, 700 thousand tweets. This represents 33.3% of all tweets about IS, which contained an anti-Shīʿa sectarian terminology in the discourse about IS for the period between October 2014 and May 2016. Furthermore, the chapter looks at the Twitter-sphere by relying on a tripartition of tweets about IS which are: *support*, *ideological continuity* and *opposition*. For each of these three macro-categories, I looked at the evolution of the discourse in a three-year period in the anti-Shīʿa test set, which I compared to the entire sample. The chapter is structured around seven main parts: a brief exposition on the current political context in the Arab world in relations to Iran and its allies, a discussion on the current literature about sectarianism and an explanation on my approach to the issue, an analysis on the co-existence of anti-Shīʿa sectarian discourse in both the IS and competing discourses, an explanation on the research question, a discussion on the adopted approach, an analysis of the degree of support in the anti-Shīʿa discourse, an analysis of ideological continuity in the anti-Shīʿa sectarian discourse and an analysis of the degree of opposition in the anti-Shīʿa sectarian discourse.

3.1. Anti-Shīʿīsm in the Arab political context. An overview

Public discourse in Europe and the United States has often portrayed Jihadism as a threat mostly directed against the West (Jackson, 2007, p. 406-407). Some commentators have interpreted the terrorist attacks in Paris and Brussels as motivated by an obsession with liberal values and the western lifestyle (Sililinsky, 2016). However, despite anti-Westernism still being one of the core pillars of Jihadist ideology, the political reality shows quite a different picture. The main enemies of the Islamic State are more often other Muslims, or to be more precise, the Shīʿa. Many attacks carried out by Sunnī Jihadi groups over the last years have targeted Shīʿa

133 As stated in the previous part of the dissertation, it is impossible to provide a precise estimation of Shīʿa users in my sample. 12.06% is the average value between the demographic composition of non-Sunni Arabs (13.80%) and the percentage of Shīʿa users in my sample, based on the geo-localisation of the Tweets.

shrines, processions, mosques and neighbourhoods. Sectarian violence and terrorism have been closely connected, as 43% of all victims of terrorist attacks were located in Iraq, Syria, Yemen and Pakistan (Global Terrorism Index, 2015), where conflicts are often accompanied by widespread, religious-motivated violence. These dynamics have reached unprecedented virulence in the Syrian, Iraqi and Yemeni civil wars, where armed groups have committed sectarian-based crimes on a large scale (Phillips, 2016, p. 358).

Jihadi violence against Shīʿa did not emerge from a vacuum but exploded in a context of regional contraposition between Sunnī-majority Saudi Arabia and Shīʿa-majority Iran. Widespread sectarian crimes from Jihadist groups against Shīʿa civilians trace back to the post-war period in Iraq (2003) when Shīʿa-majority Iraqis elected a Shīʿa Prime Minister after the ousting of Saddam Hussein. In the following years, pro-US Sunnī states[134] feared that a Shīʿa-led Iraq would change the regional balance in favour of Iran. The fear was well exemplified in a speech of King Abdullah II of Jordan, who described the risk of a Shīʿa crescent spreading from Iran to Lebanon to exemplify the Teheran hegemonic project (Black, 2007). The tension was further exacerbated following the beginning of the Syrian civil war. While it would be wrong to reduce the Syrian conflict to a solely sectarian dimension (Phillips, 2016), both Iran and Saudi Arabia mobilised their networks by relying on shared religious and ideological identity to support the government or rebel forces. On the one hand, the Shīʿa majority Lebanese movement of Hezbollah fought for Assad, on the other Saudi Arabia supported mostly-Sunnī rebels in some areas of Syria (Phillips, 2015). Furthermore, pro-Iran and pro-Saudi leaders and political organisations utilised sectarian rhetoric to mobilise their audiences or fighters. Smyth (2015) provides a compelling study on the often under-rated topic of Shīʿa fighters who supported Bashār al-Assad against the rebels, by showing how the semi-official network of pro-Iranian organisations has often motivated volunteers to join their ranks with the narrative of the defence of Shīʿa shrines in Syria from extremist Sunnī, such as the sanctuary of Sayiddah Zeynab[135]. Similarly, some very influential pro-Saudi preachers utilised their spot in the media to depict current Syrian wars in sectarian terms and mobilise their supporters. Yūsuf al-Qaraḍāwī[136], a very famous public figure who hosted a TV programme on the Qatari-owned al-Jazeera channel for years, went further in arguing that 'Iran and the Lebanese Shīʿa group Hezbollah, Assad's main allies, want to exterminate Sunnīs and asked them to fight them back' during a pro-Syria rally in 2013 (BBC, 2013).

This narration of the Syrian conflict has had a great emotional impact on the broad transnational Arabic-speaking Sunnī communities on Twitter. Among the many points of view about the Syrian war, a sectarian

134 Pro-US Sunni states as well as all the countries of the Gulf (Saudi Arabia, Qatar, United Arab Emirates, Oman, Kuwait, Bahrein) and other countries like Jordan and Egypt.

135 The sanctuary of Sayyidah Zaynab is a Shīʿa mosque located on the outskirts of Damascus. Shīʿī believe that the granddaughter of the prophet Mohammad is buried there and make a pilgrimage to her tomb. This practice is considered non-Islamic by some Sunnīs.

136 Yūsuf al-Qaraḍāwī is a famous Egyptian preacher and Islamic scholar. He is often identified as sympathetic towards political Islamism. He is mostly famous in the Arab world for his inflammatory speeches on al-Jazeera. At the moment of writing, he has 2,4 million followers on Twitter. He was vocally anti-Assad and, in the first phase of the Syrian war, he sided with the rebels. Before the Qatari crisis (2017), he could be placed in the anti-Iranian camp, led by Saudi Arabia.

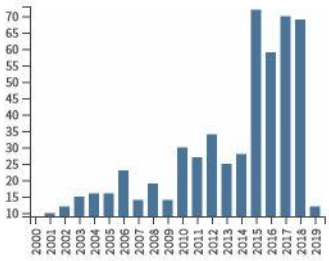
interpretation of the conflict has emerged, which is that Shīʿa-majority Iranian forces and their allies are killing Sunnīs in Syria because of their religious-based hostility against the members of this religious community. Jihadist groups have tried to exploit this specific Twitter discourse, by utilising sectarian rhetoric to gain new supporters and to present their jihād to *possible sympathisers* as part of a regional struggle against Shīʿa domination. Their message was quite straightforward: 'what is happening in Syria might happen soon in any other Arab country where there is a Shīʿa minority, so you had better join our ranks and fight back'. Religious sermons, *nasheeds*[137], images and speeches of combatants who have engaged in fighting against Shīʿa armed groups have been broadcast on the internet to a varied audience, igniting a furious debate on Twitter. The explosion of political violence in Yemen and Iraq, where Shīʿa and Sunnī-majority groups violently fought one another, has contributed to the sectarian interpretation of current events. As we will discuss later, there were some public anti-IS figures, mainly from the Gulf and Saudi Arabia, engaged in an anti-Shīʿa discourse. The contents of their tweets will be further discussed in the chapter.

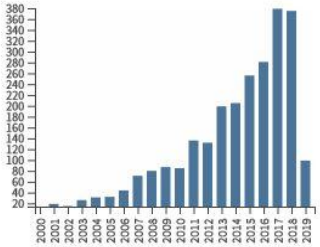
3.2. What is sectarianism? A literature review

Before discussing the research findings, it is important to provide a definition of sectarianism and to state the reasons for studying this issue on Twitter. The term has a long history, dating back to religious war in Europe and elsewhere. More recently, the concept of sectarianism has mostly been utilised to interpret violence between extremist Catholic and Protestants in Northern Ireland[138] (Brewer, 1992; Ford and Cafferty, 2005; Ford, 2005) and lately as one of the frameworks to analyse violent conflicts between extremist Sunnī and Shīʿa in Iraq and Syria (Haddad, 2011; al-Qarawee, 2016; Phillips, 2016; Rabi and Friedman, 2017; Wimmen, 2014). Despite the concept being widely utilised in Middle East studies, the term is far from being without controversy. For this chapter, I will rely on two definitions which link to sectarianism as a form of identification and a political strategy. The aspect of identification is that provided by the English Collins vocabulary, which defines sectarianism as 'strong support for the religious or political *group* you belong to, and often involves

137 Nasheed is a work of vocal music. It is often *a cappella* or accompanied by percussion instruments. Conservative Muslims often convey their message with Nasheeds because they believe that Islam forbids the use of certain music instruments, except some basic percussion.

138 A research on studies of sectarianism on webofscience.com shows a sharp increase in the use of this term in the titles (*right*) or quotations (*left*) in academic publications in last years. This is because the term has been increasingly discussed in publications on the Middle East, which has implemented this concept to analyse a plurality of political contexts.





conflict with other *groups*'. The political strategy aspect is well-summarized in the definition of Fatima Ayub (2013, p. 2) of sectarianism, which determines "the promotion and deliberate deployment of sect-based allegiance in the pursuit of political ends".A starting-point of the review is to define what a group is and what belonging to a group means. Social identity theory, as presented in Tajfel and John Turner (1979), states that social identity is 'the individual's self-concept derived from perceived membership' (Charness and al., 2007, p. 1342). Drawing from Smith's account (2013, p. 39-40), I state that personal identification is not given, but it is 1) the result of a deliberate choice of each individual, 2) at a given time and 3) it carries a specific meaning for each person. It is the result of a deliberate choice of each individual because a person who is born in a group can potentially accept or refuse to consider himself as a member of the community. For example, a Muslim-born Shīʿa can refuse to identify himself as a Shīʿa because he considers that there is no significant difference between members of the two groups who both beliefs in Allah and the Prophet Mohammed or he can regard himself an atheist. On the contrary, another individual might consider his Shīʿa affiliation as a salient element for his own personal identity. It varies in time because as Smith (2013, p. 40) states, 'human beings live in a multiplicity of social groups, some of which are more significant and salient than others at various times'. A Milanese citizen in the Middle Ages might have considered his/her Christian identity as the main element which identified and distinguished him *vis-à-vis* a Muslim citizen of Cairo, while a Milanese citizen of the current time might still be Christian, but see his/her adherence to liberal-humanistic values or his/her national identity as the main element of distinction from a Muslim citizen of Cairo. Finally, belonging to a specific community carries different meanings for each person. An Italian citizen of nowadays might link his/her national identity with creativity and taste in dress, while another might link it with disorganisation and excessive attachment to the past.

The previous discussion shows there is a close relationship between personal and group identity. To consider oneself as carrying a specific identity also means to consider others as sharing the same characteristics. Flockhart (2008, p. 85) well summarises this point by stating that "identity is the agents' understanding of self, its place in the social world, and its relationships with others". In our example, an individual who considers creativity and taste in dress as somehow linked to his Italian-ness is likely to consider these characteristics as shared by the group of 'Italians'. In other words, he considers the Italian community as typically sharing these characteristics. However, it is highly unlikely that these characteristics are shared by all Italian people, so it is something that this individual imagines as characterising an abstract archetype of an Italian. In other words, he imagines the community of Italians as carrying these characteristics in a similar way that a Sunnī considers millions of members of his community as carrying some specific features which distinguish them from Shīʿa. To better understand this element, I drew from the concept of *imagined community*. In Anderson's words (2016, p. 6-7) an *imagined community* is *imagined*, because 'the members (…) will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion' (Anderson, 2016, p. 6), and it is a *community* because individuals are 'conceived as in a deep, horizontal, comradeship' (Anderson, 2016, p. 7).

Finally, I speculated that in my sample a user who employs anti-Shīʿa rhetoric on Twitter is likely to consider himself a member of an imagined transnational Sunnī community. In other words, I contend that he shares some solidarity and emotional bonds with fellow Sunnī all over the world. Nevertheless, one could argue that someone could engage in an anti-Shīʿa discourse while still feeling disconnected from the Sunnī community. For example, an Arabic-speaking Atheist or Christian might employ this type of rhetoric without feeling part of the Sunnī community. However, I claim that it is possible to exclude members of non-Sunnī Arabic-speaking communities by implementing a set of words which speak both for a sense of belonging to an *in-group* and hostility towards an *out-group*. For this reason, I utilised four sectarian terms in my sample which do not carry only sectarian meaning but revolve around the idea that Shīʿī are not part of the Sunnī community. Therefore, it would not make sense for a non-Sunnī to use one of these terms. *Rāfiḍī* (sing. رافضي, pl. روافض) means 'those who refuse' and it is a derogatory term to accuse Twelver Shīʿa[139] of refusing (Sunnī) Islam, that makes them apostates. *Safawī* (sing. صفوي, pl. صفويون) refers to the Iranian dynasty who abandoned Sunnīsm and declared Shiism the official religion in Iran and the surrounding territories. *Nuṣayrī* (sing. نصيري, pl. نصيريون) is a reference to Abu Shuayb Muhammad Ibn Nusayr, the founder of the Alawite. It is used to frame the Alawite religion as following a man and not God and therefore not divinely inspired. *Majūsī* (sing. مجوسي, pl. مجوسيون) refers to Zoroastrianism, the main religious community in Iran before Islam, but it has been used in a derogatory way to indicate the alleged impiety of the Shīʿa people. The previous analysis speaks to the fact that, in some cases, a sense of belonging to a community often goes hand in hand with hate for other groups. In this sense, I go along with the differentiation between 'banal' and 'instrumental' sectarianism introduced by Hinnebusch (2016, p. 122-123). This author defines 'banal' sectarianism as 'a relatively un-politicized identity marker in multi-sectarian societies, operative largely at the local level, with few national normative implications and therefore compatible with sectarian co-existence and with state and supra-state identities'. 'Instrumental' sectarianism corresponds to the politicisation of sectarian differences for political ends. It follows that it is important to investigate in which cases the membership to one imagined community translates into hostility to another. Scholars on sectarianism have often focused on a specific question: '*What makes one group hate another group*?'. The first answer to this question is that of *primordialism*, which argues that hostility between two or more groups has always existed. For example, former President Barack Obama has asserted that current conflict in the Middle East 'dates back millennia (Adam, 2016). I maintain that this claim glosses over the fact that Shīʿa and Sunnī have alternated periods of conflict and coexistence. Anti-Shīʿa violence has ultimately exploded in Iraq, mostly after the collapse of Saddam Hussein's regime in 2003. Haddad (2013) provides a compelling description of the historical genealogy of current sectarianism in this country, by stressing that it predominantly emerged in the public discourse since the explosion of anti-Saddam revolts in the South of Iraq in 1991 but was mostly framed by utilising anti-Iranian terms. The author reports an illustrative conversation with a Shīʿa peasant lady, which well captures how the Shīʿa identity was not that central before 1991. 'It was from those days (March 1991) that I first learnt about Sunnīs and Shīʿī. I had never

139 Twelvers are those Shīʿī who believe that there were twelve legitimate Caliphs from the family of the Prophet Muhammad.

heard anything about this before' (Haddad, 2013, p. 61). He also argues that anti-Shīʿa discourse became more widespread in the Sunnī-majority area of the country and acquired a sectarian connotation from 2003, following the American war in Iraq (Haddad, 2013).

A second answer is that of *Instrumentalism*, which claims that sectarian violence emerges when individuals or organisations exploit group differences for political reasons. The authors who adopt this framework argue that 'identity entrepreneurs can manufacture ethnic, racial, or religious identity for their own purposes' (Travis, 2011, p. 2). This argument has been widely utilised in analysing the emergence of sectarianism in the Arab context, while authors differ on the main reasons which allow for the emergence of sectarian hostility. Some have pointed out that local elites (*e.g. state actors, sectarian entrepreneurs*) manipulate their citizens' opinions to achieve political goals (Zubaida, 2013; Droz-Vincent, 2014). These authors rightly point to the fact that there should be someone who politicises group differences to take political advantages, but the role of sectarian entrepreneurs appears to be a necessary though not sufficient condition for widespread violence. In other words, the fact is that there might be many good reasons for elites to instrumentalise sectarian identity, but this does not necessarily mean that there is also a constituency which agrees to follow them.

The last approach is that of *constructivism*, which defines identity as imagined and constructed entities (Anderson, 2016). On the one hand, constructivists 'recognize the importance of seemingly of ethnic/religious identity', similarly to *primordialists*, on the other, they disagree with them that 'this inevitably leads to conflict' (Hashemi, 2016, p. 17). Along with *instrumentalists*, constructivist authors recognise the importance of elite as triggering factors in turning hostility into violence. In other words, they observe that one could have a negative view of the Shīʿa, but still oppose indiscriminate violence against them, unless there be a very specific triggering element which convinces one to mobilise. As Hashemi well summarises (2016, p. 17):

"constructivists do not believe that ethnicity/religion is inherently conflictual, but rather that conflict flows from "pathological social systems" and "political opportunity structures" that breed conflict from multiple social cleavages that lie beyond the control of the individual."

Drawing from the previous part, I collocated the theoretical understanding of online sectarianism in the chapter with reference to a constructivist approach. I, therefore, argue that the Twitter Shīʿa and Sunnī networks are *imagined communities*, which exist as long as users believe they do. I consider this sense of belonging as 'exploited' but not 'created' by sectarian entrepreneurs, which include IS and competing ideologies (*some strains of Salafism and Islamism*). I consider their main role of sectarian entrepreneurs to be in giving a meaning to this sense of belonging. To understand better this point it is useful to recall the building blocks theory and Kaufman's classic study of the characteristics of rhetoric that accompanies civil conflict (2011: 43-48): which includes: 1) myth justifying hostility, 2) a sense of fear for an – often unrealistic – danger and 3) an opportunity to mobilise and fight. Applying this approach to the Arabic-speaking Twitter-sphere, Jihadists have provided a discourse which has a myth justifying violence (*enemies are hostile towards Islam and the Sunnī community*), a sense of fear for an – often unrealistic – danger (t*he fight between the Sunnīs and*

its enemies is of a religious nature') and an opportunity to mobilise and fight (*Jihād is an individual duty for all Muslims*).

Once stated that hatred emerges from an interplay between pre-existing group identification and the actions of political groups which exploit these differences, it is useful to question the conditions necessary for sectarian entrepreneurs to succeed. Some authors claim that sectarianism emerges when there is a *power vacuum* in multi-religious or multicultural states, like the one in Iraq following American withdrawal (Dodge, 2012), or currently in Syria, where Bashār al-Assad controls just a part of the country (Phillips, 2015, p. 357-376). They claim that the lack of a central authority allows sectarian entrepreneurs to exploit this context and mobilise their constituency to gain political influence. Although this interpretation points to the role that central states might have in limiting sectarian unrest, it does not explain why sectarian conflict and violence can also occur in countries where a strong government exists. The most obvious example is that of Northern Ireland, where the United Kingdom, which cannot be regarded as a weak state, has not managed to bring the violence between Protestants and Catholics entirely to a halt. Furthermore, it does underestimate the role of transnational networks.

Other authors underline the importance of the international dimension of sectarianism by taking a *proxy-war* approach. For example, Nasr links current sectarianism to the regional competition between Saudi Arabia and Iran, which both exploit their proxy allies to gain hegemony (Nasr, 2006). Similarly, Steinberg (2009, p. 115-116) stresses the role of Saudi-sponsored Salafism as an ideological factor, together with the Iranian revolutionary ideology, for sectarian conflicts. These last two approaches have the merit of providing a transnational dimension to the issue of current sectarianism, but they do not offer a compelling explanation of the reasons why sect-based violence has emerged in some multi-religious countries (*e.g. Iraq*[140], *Syria*[141], *Yemen*[142]) but not in others according to data provided by the CIA Factbook 2019 (including *Kuwait*[143],

140 The religious composition of Iraq citizens comprises 64-69% of Shīʿa, 29-34% of Sunni, 1% of Christians, and 1-4% of other religions (Yazidi, Shabbak, Zoroastrian etc…):

Iraq (2019) *CIA Factbook*. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/iz.html (Accessed: 4 August 2019).

141 The religious composition of Syrian citizens before the war (2010) comprises 74% of Sunni, 13% of Shīʿa, 10% of Christians 10%, 3% of Druze:

Syria (2019) *CIA Factbook*. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/sy.html (Accessed: 4 August 2019).

142 The religious composition of Yemen before the war (2010) comprises for 65% of Sunnī 35% of Shīʿa, other religious denomination (Jewish, Baha'i, etc.) represents 0.9% of the total:

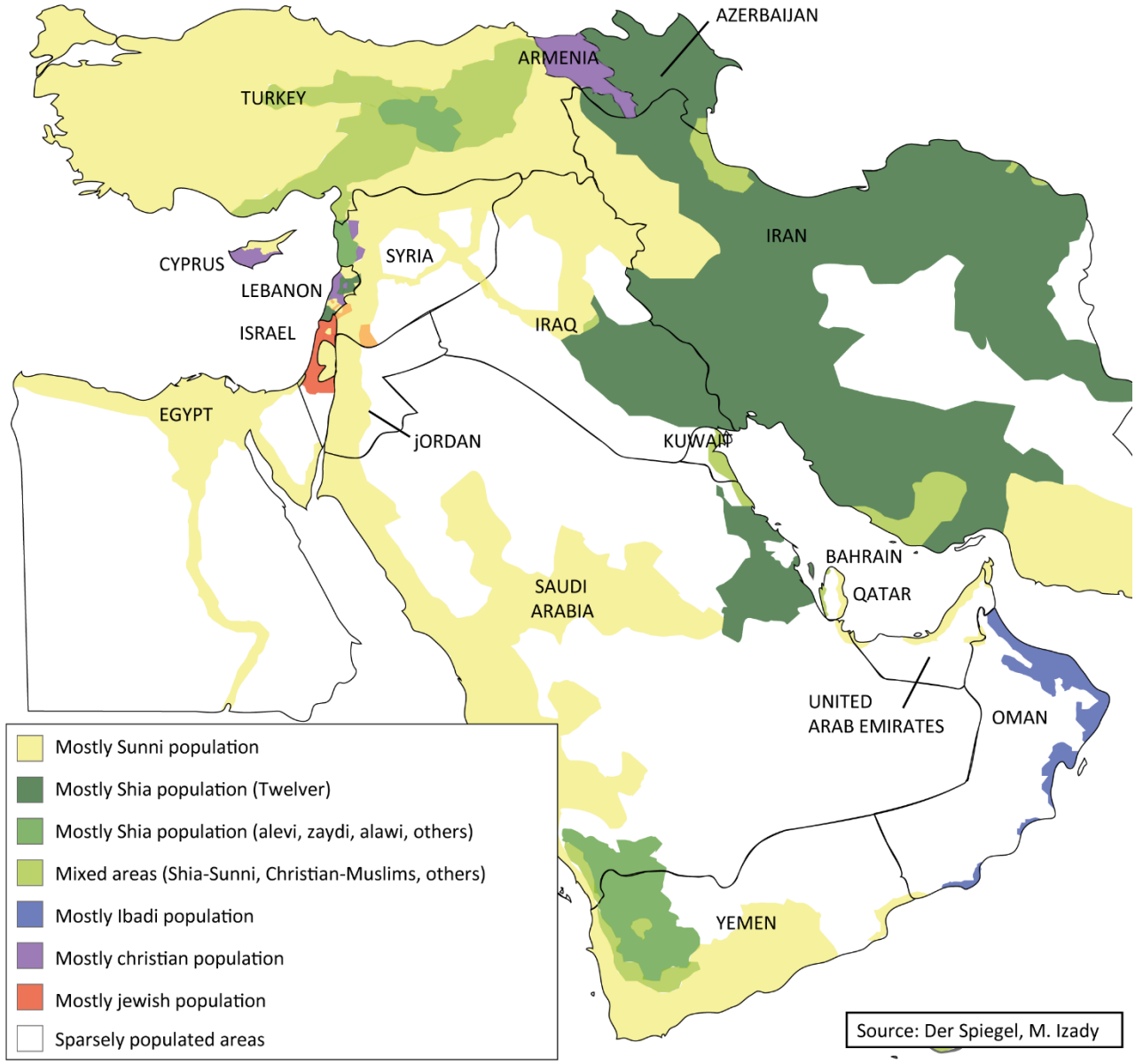
Yemen (2019) *CIA Factbook*. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html (Accessed: 4 August 2019).

143 There are no updated figures about the religious affiliation of Kuwaiti citizens, but a US report of 2001 states that Shīʿa comprises 36.5% of the total population. It is likely that the percentage has not changed since then:

Kuwait (2019) *CIA Factbook*. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/mu.html (Accessed: 4 August 2019).

Oman[144], *Turkey*[145]) (*see figure 3.1.*).

Figure 3.1.: The main religious denominations in the Middle East



144 The religious composition of Oman citizens comprises for 45% of Ibadi (a religious denomination which not Shīʿa neither Sunnī), 45% Sunnī sects and 5% Shīʿa.

Oman (2019) *CIA Factbook*. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/mu.html (Accessed: 4 August 2019).

145 There are no updated figures on the religious composition of Turkey, but the US state department estimates that they comprise roughly of 15-20% of Alevi, and 75-80% of Sunnī. Source: US State Department (2015) 'International Religious Freedom Report'. *US State Department*. Available at:

http://www.state.gov/j/drl/rls/irf/religiousfreedom/index.htm?year=2015&dlid=256251 (Accessed 7 August 2019).

An interesting contribution in this sense is that of Makdisi (2000) and his highly influential study on Ottoman Mount Lebanon in the mid-nineteen century, which links the sectarian violence between Christians and Druze[146] to both local and international factors: the role of local elite to promote sectarianism, the weakness of the Ottoman empire, and the influence of France, which supported the Christians, and the British Empire, which sided with the Druze. Makdisi rightly points to the interplay of local and international factors in the emergence of sectarianism, but he does not provide a compelling analysis of the root causes of inter-group hostility.

Despite identifying different reasons in explaining sectarian violence, all the analysed accounts share nation-based and 'state-centred' approaches. They thus attribute the emergence of sectarianism to the actions (*proxy war accounts*) or failures (*weak state accounts*) of governments. Furthermore, they look at the impact of sectarianism only in a national context. However, there are two key aspects which are not mentioned in these explanations of current sectarianism in the Arab world. The first one is that new media allow sectarian messages to cross over national borders. Transnational sectarian rhetoric on social media has thus emerged, which has an impact on both the national and the regional level, making the single nation approach less fitting with the current situation. Furthermore, the anti-Shīʿa discourse has spread over the internet not only because of state-linked agencies but also, and foremost, because of a multitude of unique users who do not have any direct political interest in sharing such contents on Social Media. In this sense, I go along with Wehrley (2016, p. 27) in stating that while "the Saudi-Iran rivalry and the Syrian war have certainly heightened sectarian tensions (…) these factors are ultimately enablers, rather than root causes". The emergence of a virulent anti-Shīʿa sectarian discourse seems to be more complex than just a state-based strategy, but rather to be the result of a complex set of actors. In this sense, I side with Matthiesen (2013, ix), who stresses the role of non-state actors in current anti-Shīʿa discourses by arguing that "Sectarianism was not just a government invention, but the result of an amalgam of political, religious, social, and economic elites who all used sectarianism to further their personal aims". I state that looking at the Twitter-sphere allows studying this plurality of non-State actors, which together make up the anti-Shīʿa discourse about IS. The issue will be further discussed in the next part of the chapter.

3.3. The enemy of my enemy? The anti-Shīʿa discourse in the Arabic-speaking Twitter-sphere

The chapter aims to answer the following question:

How did the anti-Shīʿa sectarian discourse influence support for IS in the Arabic-speaking Twitter-sphere?

146 Druze is an ethno-religious denomination which counts a few hundred thousand followers, mostly in Lebanon, Syria and Israel. This syncretic faith derives from one of the many shīʿa denominations (*Isma'ili*), but the group also features some elements from other philosophical traditions, mainly Pythagoreanism, Gnosticism and Neoplatonism.

To provide an answer to the question, I relied on a tripartition between three main groups of tweets: *Support*, *Ideological continuity* and *Opposition*, which I introduced in the previous part of the dissertation. Drawing from these three macro-categories, I analysed the Sentiment towards IS in the anti-Shīʿa sectarian Arabic-speaking Twitter-sphere over a three-year period. For each of these categories, I looked at how the discourse evolved over time, in relation to daily interactions and single users per day and for the category of pro-IS and anti-IS. I took into consideration the most recurrent topics implemented by the users in discussing the Islamic State, and I compared them to those of the entire sample (*chapter 1*).

I focused on the anti-Shīʿa sectarian discourse about IS in the Arabic-speaking Twitter for a plurality of reasons. The first is that the Islamic State captured global attention at the end of 2014 (Maher, 2016, p. xxviii), and its sectarian discourse was widely discussed on Twitter. This is especially true in the Arabic-speaking Twitter-sphere where there are virtually no language barriers, as both Modern standard Arabic and some dialects are commonly utilised and understood across the region, and there are around 13-14% of Shīʿa. The total number of anti-Shīʿa sectarian tweets collected in my three-year Test set, which reaches 4 million, 320 hundred thousand[147], clearly indicates that the issue acquired a certain amount of attention in relation to IS. The second reason is that the emergence of IS has directly affected a plurality of Arab states and people, as the terrorist organisation obtained territorial control of some portions of territory in Arab-majority countries (*Iraq, Syria and Libya*) and organised attacks, mostly against Shīʿī, in many parts of the Arab world (*e.g. Kuwait, Saudi Arabia, Iraq, Syria, Lebanon*). The third reason is that the Arabic-speaking community has always had great importance for IS because of symbolic and political reasons. Symbolically, the Caliphate historically emerged in the Arab territory, and any claim of restoring this institution would be void without controlling some pieces of Arab territory. Politically, the Arab region is at the centre of global geopolitical competition between major Sunnī-majority (*Saudi Arabia*, *Turkey*) and Shīʿa-majority (*Iran*) powers. The fourth reason is that Twitter provides a wide sample for the Arabic-speaking public opinion. The Arab Barometer Wave IV (Arab Social Media Report, 2017) reports that 19.97% of all the Arabs who have a social media account also had a Twitter account in the period between 2016 and 2017[148].The fifth reason revolves around the characteristics of the social media platform. Twitter comprises a large set of users in the Arab world, as it is widely used by elites, extremists and everyday citizens alike (Mourtada and Salem, 2014). Furthermore, Twitter is a public platform where any tweet can potentially reach any user. The sixth reason is that Twitter is open to researchers who can access any published contents, unlike other Social Media such as Facebook. These features allow analysing large amounts of data over a long period of time. Furthermore, Twitter is particularly

147 The sample comprises 33.3% of all Tweets which contain a reference to anti-Shīʿa sectarian discourse. My sample comprises 1 million, 470 thousand tweets.

148 It is important to stress that the Twitter sample is not evenly distributed, as 49% of Arabic-speaking Twitter users are from the Arab Gulf, which makes up only 12% of the total population.

Arab Social Media Report (2017) 'Social Media and the Internet of Things, Mohammad Bin Rashid School of Government', 5 February. Available at: https://www.mbrsg.ae/getattachment/1383b88a-6eb9-476a-bae4-61903688099b/Arab-Social-Media-Report-2017 (Accessed: 10 August 2019).

suited for studying sensitive topics, such as sectarianism, as any user can express his/her opinion anonymously (Jamal and al., 2015). The social media also allows for collecting spontaneously generated contents, which would be probably more difficult to collect by focus groups because of social bias about sensitive topics (DiGrazia and al., 2013) and the possible danger in freely expressing opinions in a dictatorial context. For these characteristics, a plurality of researchers has focused on social media to study sensitive topics in the Arab world. For example, Al Rawi (2017) analysed a popular Facebook opposition page to understand the on-line sentiment toward the regime of Bashār Assad. Zeitzoff (2011) looked at Twitter to develop hourly dyadic conflict intensity scores during the Gaza Conflict (2008–2009). Jamal and al. (2015) studied the Sentiment towards the United States and Iran in the Arabic-speaking Twitter community and found that hostility towards U.S. and Iran is more about international politics than about domestic social norms because these states are accused of interfering with other countries.

More specifically with regard to the anti-Shīʿa discourse, Abdo (2013; 2015) studied many influential Salafis who politically opposed the Islamic State, to conclude that they also engaged in the anti-Shīʿa discourse. Siegel (2015; 2017) focused on the anti-Shīʿa (*and anti-Sunnī*) discourse in the Arabic-speaking Twitter-sphere to state that the online sectarian narrative is driven by a combination of Twitter users, including prominent clerics, Shīʿa militia leaders, Islamic State supporters, influential Saudi businessmen, popular media outlets and average Arab users.

The observation of Siegel (2015; 2017) that anti-Shīʿa hostility is widespread in different groups links to the main elements which make it interesting to focus on the anti-Shīʿa sectarian discourse about IS in the Arabic-speaking Twitter-sphere, namely that there are both reasons for expecting a similar or higher degree of support. One reason for expecting a similar degree of support is that anti-Shiism is not an exclusive banner of IS, but a certain degree of hostility towards the followers of this religious affiliation can also be found in competing ideologies. It is worth pointing out that the genealogy of anti-Shiism traces back to many centuries before the emergence of IS, and it links to the assumption that Shīʿī are non-Muslims, which is an idea that was already expressed by the thirteenth-century scholar Taqi al-Din Ibn Taymiyyah[149] and, to a lesser extent, the Hanbali school of jurisprudence[150]. However, most strains of Salafism have re-actualised this view in the contemporary age, as they argue that practices which are popular mostly among Shīʿī, such as the veneration of the tombs of saints, should be defined as un-Islamic (Meijer, 2009, p. 11). Salafis condemn these practices by referring to 'the concept of *bidah*—an Islamic term that forbids inventing religious practices unsanctioned by the religion' (Hassan, 2016, p. 11) Some of them go further in arguing that Shīʿī practices compromise their worship of God alone and alienate them from Islam (Maher, 2016, p. 103). This last assumption seems to be widely shared

149 Taqī ad-Dīn Ahmad ibn Taymiyyah was a scholar from the thirteen-century medieval Sunnī Muslim theologian, jurisconsult, logician and reformer. He was known for his strong Anti-Shīʿa stance. He considerably influenced contemporary Salafism and Jihadism.

150 The Hanbali school is the smallest of the four traditional schools in Islam and it is considered to be the most traditionalist. Differently to other schools, it is found mostly in Saudi Arabia and Qatar, where it is the official school. Some followers of these schools can also be found in the surrounding states (*e.g. UAE, Oman, Iraq, Bahrein*).

also outside Salafi circles. An opinion poll of Pew Research in 2009 found that 'at least 40% of Sunnīs do not accept Shīʿī as fellow Muslims in most Arab countries surveyed' (*Morocco, Jordan, Palestine, Iraq, Tunisia, Egypt, Lebanon*[151]). Drawing from the previous discussion, I maintain that the anti-Shīʿa discourse comprises a variety of arguments from a plurality of ideologies. Some speak of them as a threat, while others justify violence against members of this group. For example, let us take the anti-Shīʿa tweet '*Safawī plan's channel shows a Safawī Majūsī's video that pledges to anyone who kills a Sunnī to enter Paradise <video> #Arrest #Daesh #Islamic_State*[152]*'.* This content clearly expresses the idea of religious-based hostility towards Sunnīs, as it refers to the Iranian channel with the sectarian terms *Majūsī* and *Safawī*, but it does not promote Jihād against members of this religious denomination. In other words, it gives the idea that to kill Sunnī, including civilians, is morally wrong, and this is what they do, not us. On the contrary, the Tweet *'In this way, the Islamic State retaliates against the Sunnīs: mass graves of the Nusayris army <video>*[153]' clearly expresses the idea that the Shīʿa committed crimes (*mass graves*) but also that violence against them is legitimate. The example suggests that the idea of the legitimacy of individual mobilization is the main element which distinguishes pro-IS tweets from others. In a nutshell, what makes it relevant to focus on the anti-Shīʿa discourse in the Twitter-sphere is precisely that a cross-sectional hostility can be identified and that IS seems to act as a triggering factor for those who want to mobilise against a perceived existential threat. However, there are also reasons to expect that support for IS is higher in the anti-Shīʿa sectarian discourse about IS in the Arabic-speaking Twitter-sphere compared to the entire sample, namely that the IS prioritizes the war against Shīʿa with respect to war against any other enemies (Roy, 2017, p. 80). In this sense, I considered the Arabic-speaking anti-Shīʿa Twitter-sphere as the field where IS competes with other discourses for providing the answer to the same perceived problem: Shīʿa religious-based hostility and violence against Sunnīs. Furthermore, I considered the anti-Shīʿa sectarian discourse to have pre-existed and co-existed with IS discourse on Twitter. Therefore, I deem the emergence of the Jihadist discourse in general, and IS in particular, to be the main mobilising factor in translating hostility into an opportunity for action. To better understand this point, it is worth mentioning that, unlike mainstream Salafis, Jihadists, including Qāʿida (Maher, 2016, p. 104) draw very radical conclusions from the assumption that Shīʿī are outside Islam. They support the destruction of symbols of 'polytheistic practices' (*shirk*) notably Shīʿa shrines that denote a deity (Hassan, 2016, p. 11) and justify Jihād against them. IS takes an even more radical stance than other Jihadist groups, including al-Qāʿida, as it legitimises the killing of Shīʿa civilians. IS publications justify it by claiming that the Shīʿa is waging war against IS, and, therefore, against Islam (Roy, 2017, p. 80). In the IS magazine *Dabiq*, the terrorist group claims

151 Pew Research (2014) 'The World's Muslims: Unity and Diversity', 9 August. Available at: http://www.pewforum.org/2012/08/09/the-worlds-muslims-unity-and-diversity-executive-summary/ (Accessed: 12 August 2019).

152 The original tweet is:

قناة المخطط الصفوي وفيديو صفوي مجوسي يتعهد لكل من يقتل سني بدخول الجنة <video>… #عتقال #داعش #الدولة_الإسلامية

153 The original tweet is:
هكذا تنتقم الدولة الإسلامية لأهل السنة مقابر جماعية للجيش النصيري<video>

that ‘there are many references to justify the killing of Shīʿa civilians from a theological point of view (Dabiq 6, 2015)’ and accuses Shīʿa of ‘waging war against Islam and supporting the crusaders and apostates against the Muslims (Dabiq, 13, 2016)’. Drawing from the previous argumentation, I argue that IS might have concentrated its propaganda mostly in the anti-Shīʿa Twitter-sphere as it is the field where the IS message and its ideology can resonate the most because of the shared hostility in the pro-IS and anti-IS samples against Shīʿa. In other words, to utilize a sectarian discourse can be seen both as a strategy of IS members to exploit current anti-Shiism and a sign of ideological continuity with the IS ideology.

The last reason for believing that there is a higher degree of pro-IS contents in the anti-Shīʿa sectarian discourse about IS in the Twitter-sphere is that the test set does not include the enemies of IS, who are those Arabic-speaking users that do not belong to the Sunnī community and are therefore considered as enemies by IS. As briefly introduced in the first chapter. I drew from the demographic composition of the Arab-majority states and my training set sample to estimate the number of tweets published by non-Sunnīs to be 12.06%. This is particularly relevant as IS considers those who are not Sunnī as enemies who cannot be convinced and who therefore should all be killed. To focus on the derogatory terms allows excluding members of this community, which permits distinguishing between opponents and enemies.

3.4. The method to analyse the Twitter anti-Shīʿa discourse

To understand the link between the anti-Shīʿa sectarian discourse and the Sentiment of the users about the Islamic State and its ideology, I extracted 5,000 random Tweets from the whole database, which consists of 32 million, 700 thousand Tweets about the Islamic State published between the 1st of October 2014 and the 30th of May 2016. These tweets were entirely collected with the software *Brandwatch*, an official firehose company dealing with Twitter, and they comprise 33.3% of all Arabic language tweets that explicitly discussed IS through a set of keywords. I chose to focus on a shorter period than the previous chapter because after summer 2016 the anti-Shīʿa test set was reduced to a few dozen in the following period, which makes it impossible to provide an accurate estimate for the positive sentiment towards IS. As stated in the methodological part, I coded the sample manually in twelve categories which capture the Sentiment on IS and support for four building blocks of IS ideology and the main topics of the pro and anti-Shīʿa discourse in the Twitter discussion about the Islamic State. The coded sample has been discussed in the previous part of the dissertation. My manual coding was supplemented by two professional Arabic translators. For this chapter, I focused on five categories to test my hypotheses, namely *‘Sentiment on IS’* and the ‘*Sentiment for the four building blocks’* and two categories to identify the subset ‘*Opinion on Shīʿa’*, ‘*Typology of anti-Shīʿa hostility’*.

Manual coding was functional for identifying the anti-Shīʿa sectarian sub-sample, which is the test set of my chapter. To detect the words which mark the anti-Shīʿa discourse, I first looked at the category ‘*Opinion on the Shīʿa*’ to pinpoint those tweets which I coded as containing a reference to Iran and its allies, or the Shīʿa as a group (14.36%). Among these, I isolated those tweets referring to Iran and its allies or the Shīʿa as a group

in a negative way (95.24%) and a non-negative way (4.76%). The Tweets which refer to Shīʿa with a certain degree of hostility represent 13.67% of the entire training set of 5,000 tweets (*excluding the off-topic*) which I manually coded. Then, I thus coded in the category of '*Typology of anti-Shīʿa hostility'* to distinguish between *religious-based hostility* and *political-based hostility* towards Iran and its allies or the Shīʿa as a group. The tweets which express a *political-based hostility* are those that argue that the hostility towards Sunnī-majority states or organisations is due to political motivations and comprise *59.09%* of all the tweets coded as carrying a negative sentiment towards Iran and its allies or the Shīʿa as a group. In contrast, those Tweets which express the idea of a religious-based hostility from the Shīʿī are *40.91%* of the tweets coded as carrying a negative sentiment towards Iran and its allies or the Shīʿa as a group. To analyse my test set, I relied on the same methodology of the previous parts, which is based on the iSA (*integrated Sentiment Analysis*) (Ceron and al., 2016). This methodology derived from the work of Hopkins and King (2010). iSA is a *supervised* and *aggregated* method. In a nutshell, it estimates the un-coded tweets thanks to the proportion of manually coded tweets in each category. Drawing from the coded data, the algorithm "learns" how to sort the contents which were not previously coded. As explained in the previous chapter, aggregated methods are more accurate than other methodologies (Ceron and al., 2016; 2018). The algorithm is particularly indicated for an analysis based on a large sample of tweets, such as the one I am carrying. Furthermore, the method has been used already for a similar study on the Sentiment towards IS in a large dataset of Tweets (*26.2 million*) on Twitter (Ceron and al., 2018). Finally, the method has been further discussed in the introduction of the dissertation and analysed in full detail by Ceron and al. (2016).

As discussed in the previous chapter, I looked at the dataset to see whether there are any words associated with a certain sentiment towards IS, but I could not find any words always linked to a specific sentiment to IS. A supervised method allows dealing with this issue by relying on manual coding. Furthermore, a manual coder can always provide more accurate coding than any automatic method. The advantage of adopting an aggregated method, based on the Grimmer and Brandon classification (2013, p. 275-279), is that it estimates the proportion of tweets for each of the categories. To better understand this issue, it is useful to refer once again to the theoretical approach of the dissertation, which draws from the theory of Van Dijk (1998, 2011) on ideology and Freeden's concept of building blocks (2013). In analysing the ideology of the Islamic State, I verified the support for these four building blocks among anti-IS and pro-IS users:

1. Enemies are hostile towards Islam and the Sunnī community
2. The fight between the Sunnīs and its enemies is of a religious nature
3. Jihād is an individual duty for all Muslims
4. The Caliphate represents the only example of rightful Islamic State

Taking into consideration this theoretical approach, my research aims to analyse the support for these four elements of IS ideology by considering four key building blocks of the group world-view. Once again, I argue that to agree with some of these assumptions does not translate into support for the group, as one can consider

that Shīʿī is fighting against Sunnīs, but still believe that IS is part of the problem. For example, I found many tweets (*8.32% of the entire training set, excluding the off-topic*) in my anti-IS sample which support the idea that IS has been a product of Iran and carries an anti-Shīʿa discourse. An example is the tweet '*RT <user> the commander of the Iranian military forces threatens terrorist attacks in #Saudi_Arabia. The Khariji of Daesh and al-Qāʿida will provide their services to the Majūsī community #Storm_al_Hazm <picture>*[154]'. This specific theoretical approach fits well with the methodology, which provides an *aggregated* estimate for each of the categories, from *Sentiment to IS* to *Support for the four building blocks*. More specifically, I aimed to give the proportion of document in each category, which reflects the percentage of the *opposers*, the *sympathisers* and the *supporters*. Similarly to the Sentiment towards IS in my anti-Shīʿa sample, I utilised a methodology based on the iSA.

Finally, I argue that those tweets which characterised *Iran and its* (*Shīʿa*) *allies* by utilising a sectarian terminology put them beyond redemption. In Schmittian IS defines them as a collective 'absolute enemy' which cannot be reconciled and therefore must rather be defeated (Juergensmeyer, 2016). In other words, anti-Shīʿa hostility provides the right premise for a group like IS to argue that it is necessary to take any actions to defend from them. Finally, the analysis draws from the tripartition which I introduced in the first chapter between the three periods of IS history, namely the peak (October 2014 - January 2015), decline (February 2015- July 2015) and defeat (August 2015-May 2016). I also took into account the Censorship, the impact of which I explained in detail in the previous chapter, and the number of single users per day. This measures the users who have published at least one content per day, and it is useful to analyse the difference between the participant in the discussion and the number of published contents.

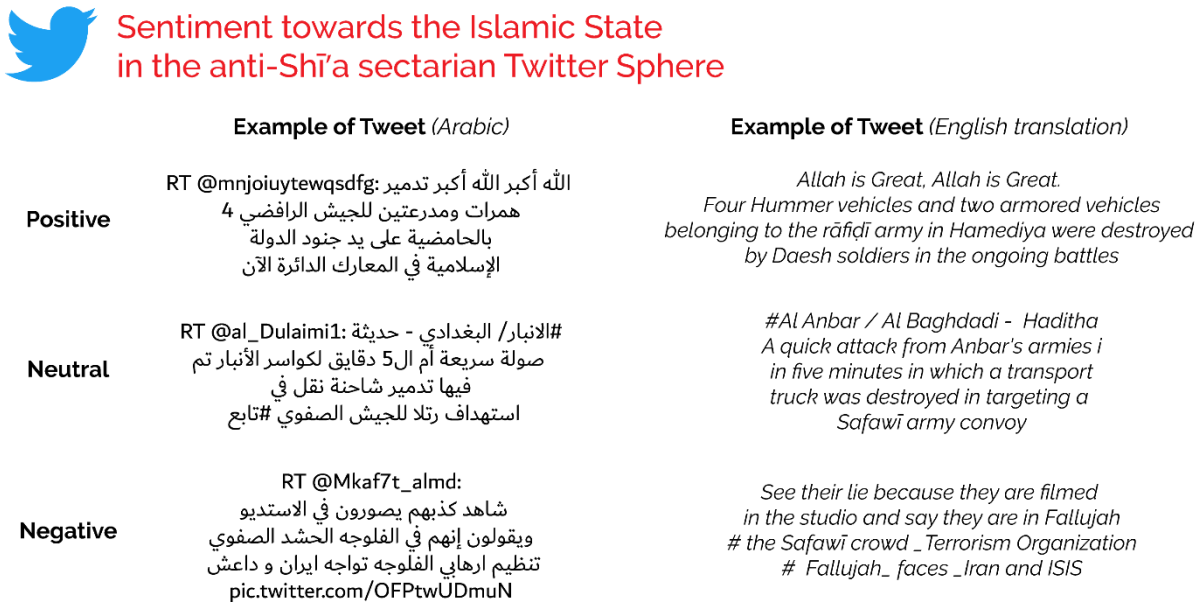
3.5. Coding system and preliminary results

To train the iSA algorithm, I relied on the same training set as the first chapter. As stated in the previous part, the training set (*excluding the off-topic*) is a random sample of tweets which comprises 13.19% positive, 8.16% neutral and 78.65% negative tweets. As stated in chapter one, I relied on three factors for coding: meaning, terminology and other elements. For the meaning, I looked at the meaning of the tweet to understand the judgment about the Islamic State of the Users and the utilised hashtags. When the stance towards IS was not clear, I looked at the words utilised to indicate the Islamic State and more specifically, most tweets which contain the word '*Daesh*' (داعش), '*Organisation of the State*' (تنظيم الدولة) or '*Terrorism*' (إرهاب) in the negative category. I coded most tweets which contain the words '*Caliph*' (خليف) and '*Caliphate*' (الخِلافَة) among those carrying a positive Sentiment. However, there were many tweets including the expression '*Islamic State'* (الدولة الإسلامية) or the name of the IS alleged Caliph '*Abū Bakr al-Baghdādī'* (أبو بكر البغدادي), to name the organisation,

154 The original tweet is:
RT <user>:
قائد قوات الايرانية يهدد باعمال ارهابية في #السعودية والخوارج #داعش والقاعدة سيتقدمون خدماتهم للمجوس #عاصفة_الحزم
<picture>

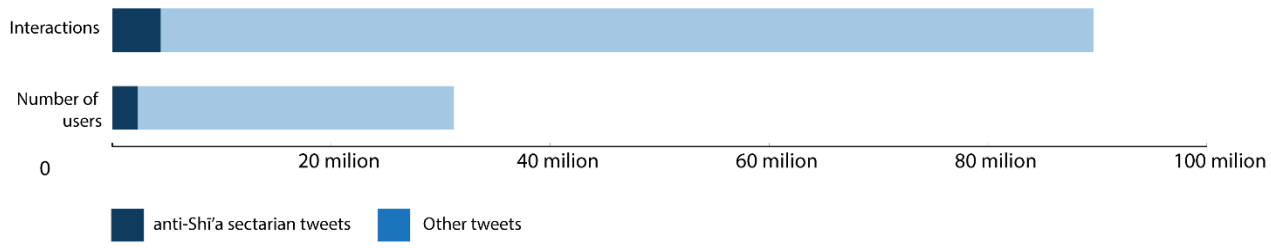
both by those who oppose it, similarly to the way I do in the chapter and by the pro-IS supporters and the propaganda of the Islamic State to indicate the organisation. The last factor regarded the other elements which indicate the stance of the user. This is the link to the profile (s*uspended or not*), the name of the users (*containing or not reference to IS, like IS, Khalif etc.*.), and the contained links (*e.g. mainstream media or IS propaganda material*).

Figure 3.2.: Example of tweets in the category Sentiment towards IS (Positive, Neutral, Negative)



The total number of tweets in the Arabic-speaking Twitter-sphere about IS containing an anti-Shīʿa derogatory term for the analysed period (September 2014 – May 2016) is 4 million, 320 hundred thousand. This represents 5.73% of the total sample of Tweets (*75 million, 284 thousand contents*) and 33.3% of all tweets about IS published on Twitter which contains derogatory terms about Shīʿī (*see figure 3.3.*). The total number of unique users is 2 million, 206 thousand. This means that a user in the anti-Shīʿa sectarian Arabic-speaking Twitter-sphere about the Islamic State published on average 1,96 daily interactions on the topic in the period being studied, which is less than the entire sample 2.95 daily interactions for the entire Arabic-speaking Twitter-sphere.

Figure 3.3.: Proportion of anti-Shīʿa contents and users in daily interactions and single users per day



3.6. Pro-IS Sentiment in the anti-Shīʿa Twitter-sphere

The percentage of pro-IS tweets for the anti-Shīʿa in the period between October 2014 and May 2016 is 22.48% (*the ratio between % of positive tweets over the sum of % of negative tweets*). This value rises to 22.89% when weighting it for the average for interactions and 25.49% when weighting it for the single users per day. Finally, the pro-IS Sentiment towards IS drops to 6.88% in those days when high activity is recorded (more than *30,000 daily interactions*), and it reaches 26.75% in those days when a very high number of users join the discourse (more than *10,000 daily interactions*). In the next part of the section, I shall discuss these results by comparing the findings of the anti-Shīʿa Arabic-speaking Twitter-sphere to those of the entire Twitter-sphere regarding IS and then examine the factors which might have determined these differences in the pro-IS Sentiment towards IS.

The difference in the average pro-IS Sentiment for the same period (20,20%) is 2.28% shows that the pro-IS discourse is more present in the anti-Shīʿa test than in the entire test set, but also that the difference is limited. Drawing from the previous literature review, the finding suggests that there are two reasons for higher support for IS. The first and the most obvious is the absence of non-Muslims in the anti-Shīʿa test set, which I estimated to be 12.06% for the total interactions. I considered non-Sunnīs as enemies of IS in reference to the previous discussion about the view of enemies of the Islamic State. Moreover, the selected keywords exclude anyone who is not a Sunnī to be part of the sectarian anti-Shīʿa discourse about IS on the Twitter-sphere. The second reason is that IS focused on the anti-Shīʿa discourse in its propaganda. For this, hostility towards Shīʿī is likely to be also shared among its supporters, and this element reflects on the findings.

The reasons for such a small difference are more complex and need in-depth analysis. The first is that this type of rhetoric is evenly distributed in both those contents which show support for IS and those who oppose the terrorist group. Members who likely belong to other ideologies, such as Salafism and Islamism, have utilised a sectarian terminology just like IS. As stated in the previous part, sectarian terms can be found in high percentages in both the pro-IS and the anti-IS sample in the training set. This element confirms once again that this type of rhetoric is not limited to IS. This is an important finding to emphasize because the relative popularity of online hate speech can be used to accurately measure local levels of racial animus and predict

the likelihood of intergroup violence (Stephens-Davidowitz, 2013; 2014). A further discussion about this finding will be provided in part about *ideological continuity*.

Another reason which explains such a small degree of difference is that, surprisingly enough, not all tweets which discuss the Shīʿa contain sectarian terminology when referring to the Shīʿa as a group, or Iran and its allies. This is because a considerable share of IS propaganda is that of the semi-official news agency *Amaq* (15.72% of all pro-IS tweets in the training set) which refers to the enemies of IS using a neutral-sounding terminology. Contents which contain the name of *Amaq Agency* are IS-generated Tweets published by IS media offices, that are shared by users to inform or celebrate IS victories. An example is the tweet *'Agency_Amaq: #Urgent 27 members of the regime forces were killed during the storming of the checkpoint of IS fighters in the road between #Raqqa and #al-Atir*[155]. In this example, it is interesting to notice that the agency does not utilise the term 'Nuṣayrī' (*0.7% of the finding in the training set, 68.57% coded as positive towards IS*) to refer to the pro-Assad forces, as pro-IS accounts normally do, but chooses the more neutral term 'Syrian regime'. An example is a tweet *'<user> the Islamic State must pass through Jordan, Saudi Arabia, or Nuṣayrīs and the pyramidal army in Syria to reach Israel <picture>*[156]'.This choice seems to be linked to a strategy of the Islamic State to spread its message across Twitter beyond those who engage in sectarian rhetoric. It follows that in the anti-Shīʿa pro-IS sample, it can be found that it is mostly IS supporters, more than IS propaganda. The most common word in the pro-IS sample to define Iran and Iran-backed militias is Rāfiḍī (*1.36% of the finding in the training set, 73.53% coded as positive towards IS*). An example is *'RT <user> the leading Rāfiḍī who fought in the Levant and Iraq was killed by the soldiers of the #Islamic State in Karma near Fallujah. They will not stay*[157]'.

The third reason for a similar percentage in the two Twitter-spheres might be the very high presence of pro-Saudi Tweets in the anti-Shīʿa sectarian Twitter-sphere. As stated in the previous part, the studies of Abdo (2013; 2015) and Siege (2015) suggest that pro-Saudi accounts have widely engaged in sectarian rhetoric on Twitter. I have two indications that confirm this finding. The first is that there is a wide percentage of tweets coded in the pro-Saudi category in my training set when isolating for those contents which contain an anti-Shīʿa sectarian discourse (18.36% of the total training set). An example is this Tweet '*Channel 24 Saudi and videos reveal the Safawī media which lies and falsify facts against Saudi Arabia <video> #Arrests #News_of_the_Caliphate #Organisation_of_the_State*[158]'. The second is that I measured that the highest average daily interactions in my test set is in the week between 2nd-10th January, which was characterised by a

155 The original tweet is:
<user> وكالة أعماق: #عاجل مقتل 27 عنصرا من قوات النظام خلال اقتحام مقاتلي الدولة الإسلامية للحاجز على طريق #الرقة - #إثريا

156 The original tweet is:
<User> الدولة الإسلامية يجب أن تجتاز الأردن أو السعودية أو النصيرية والجيش الهرمي في سوريا حتى تصل لإسرائيل <picture>

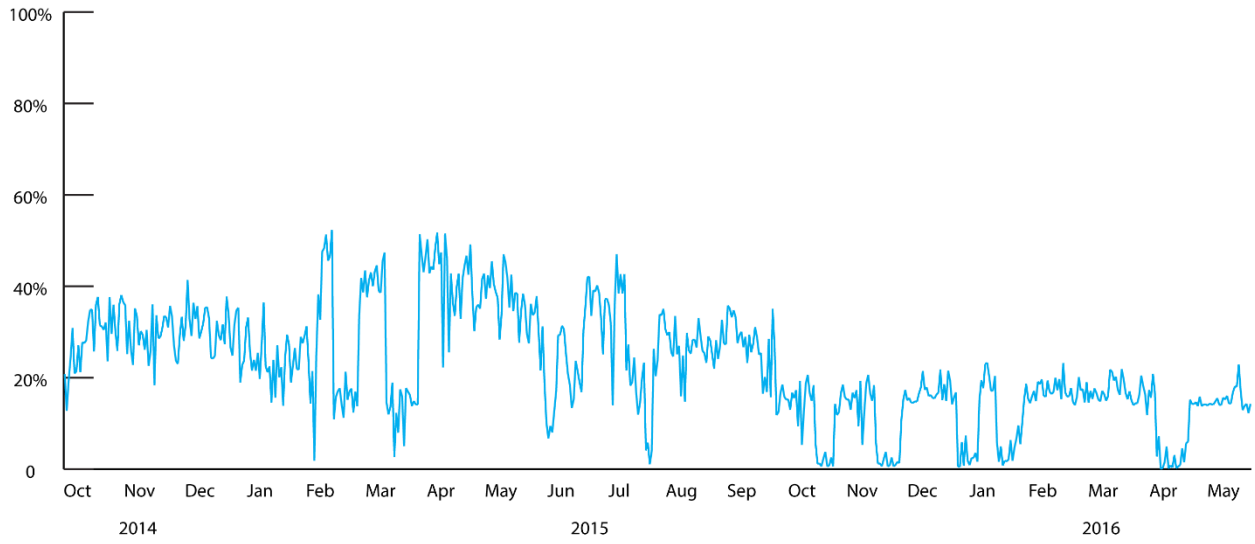
157 The original tweet is:
RT <user> القيادي الرافضي الذي قاتل في الشام والعراق هلك على يد جنود #الدولة_الإسلامية في الكرمة قرب الفلوجة لن نبقي ولن نذر

158 The original tweet is:
قناة 24 سعودي وفيديو يكشف الاعلام الصفوي والكذب وتزييف الحقائق ضد السعودية# … <video> اعتقال #اخبار_الخلافه #تنظيم_الدولة

diplomatic crisis between Saudi Arabia and Iran. The Saudi Shīʿa religious leader Nimr Bāqir al-Nimr and other 46 Saudi citizens were executed on terrorism charges on 2nd January 2016 (Eurasia Review, 2016). Protests erupted in many parts of the Middle East over the following days, particularly in Iran. During the night between 2nd-3rd January, a group of demonstrators assaulted the Saudi consulate of the Iranian city of Mashhad (Gatten, 2016). On January 8th, protestors took to the streets of Teheran (Hubbard, 2016). For the 10 days between 3rd-12th January, I collected an average of 45,808 daily interactions, which is more than eleven times higher than the average of 7,095 daily interactions for the entire anti-Shīʿa sectarian test set. An example of a tweet collected in this period on the topic of Nimr al-Nimr is '*Video of the Safawī plan: #Iran and #IS are killing us with our children <video> #Execution_Qasas_Ali_47_Terrorist*[159]*'*. A confirmation that a pro-Saudi tweet has had an impact on the percentage of the pro-IS Sentiment is that the average of anti-IS tweets in this period is 97.62% (*the ratio between % of positive tweets over the sum of % of negative tweets*).

Four other interesting findings of the research are that the weighted average of pro-IS tweets for daily interactions and single users per day are both lower than the average in the test set (*respectively* 19.59% and 25.49%, compared to 19.95% and 21.91% for the same period in the total test set), while the support for IS is lower (6.88% compared to 14.95%) on the days of high interactions (*30,000 daily interactions in the anti-Shīʿa test set, 300,000 in the entire test set*) and higher (26.75% compared to 20.85%) on days where many users join the discourse (*10,000 single users per day in the anti-Shīʿa test set, 100,000 in the entire test set*). A starting point for understanding the reasons for these differences is to look at the time evolution for the percentage of pro-IS tweets (*see figure 3.4.*).

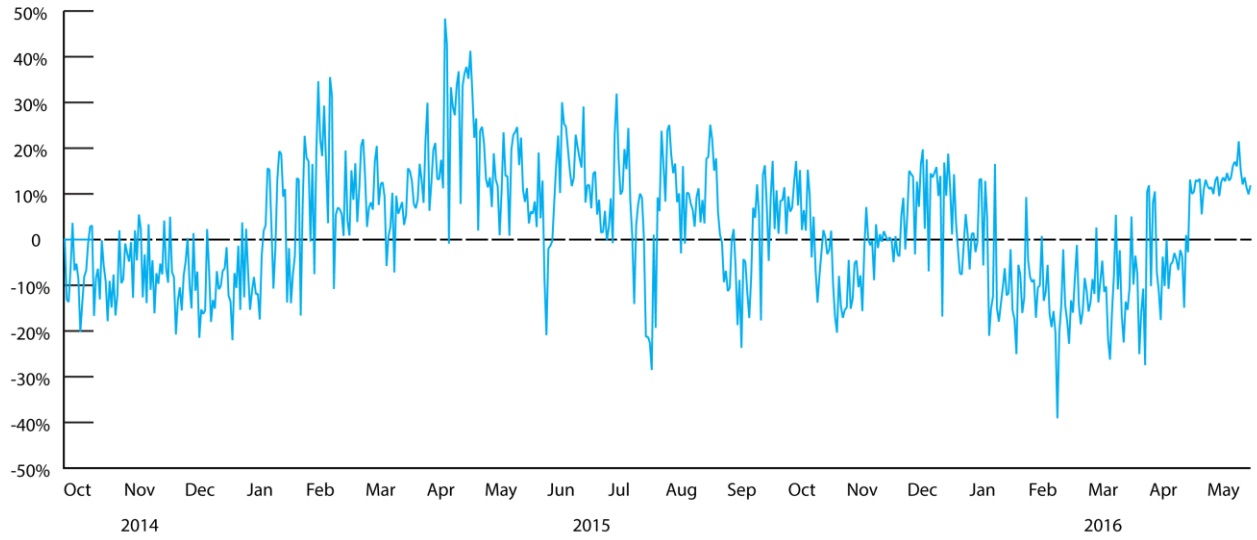
Figure 3.4.: Daily pattern of the Positive Sentiment towards IS in the anti-Shīʿa test set



159 The original tweet is:
تنفيذ_القصاص_علي_47_ارهابي #جريمة_اعدام_الشيخ_النمر … …<video> #فيديو قناة المخطط الصفوي:#إيران و #داعش يقتلوننا بأبنائنا

Similarly to the test set on the entire sample regarding IS, it is possible to observe two main characteristics for the sentiment towards IS. The first is an overall decreasing pattern. The second is that there is a lower percentage of pro-IS tweets in the period between October 2014 and January 2015 and a higher percentage of pro-IS tweets in the period between January 2015 and July 2015. This last observation is even more evident when looking at the difference in the percentage between the pro-IS sentiment in the anti-Shīʿa sectarian Arabic-speaking Twitter-sphere regarding IS and that in the entire Arabic-speaking Twitter-sphere regarding IS (*see figure 3.5.*).

Figure 3.5.: Daily pattern for the difference between the support for IS in the anti-Shīʿa test set and the total test set



The graphics on the difference between the pro-IS Sentiment towards IS in the two test sets also helps to localise better the period when the result differs the most. The first is that in March and May 2015, there was a particularly high degree of difference in the positive Sentiment towards IS for the period between. The second is January and March 2016 when there was a lower share of pro-IS tweets in the anti-Shīʿa sectarian discourse compared to the entire sample for the Twitter-sphere regarding IS. To correctly interpret these last two findings, it is important to look at the number of daily interactions (*see figure 3.6.*) and single users per day (*see figure 3.7.*) in the anti-Shīʿa sectarian Twitter discourse.

Figure 3.6.: Daily interactions in the anti-Shīʿa test set

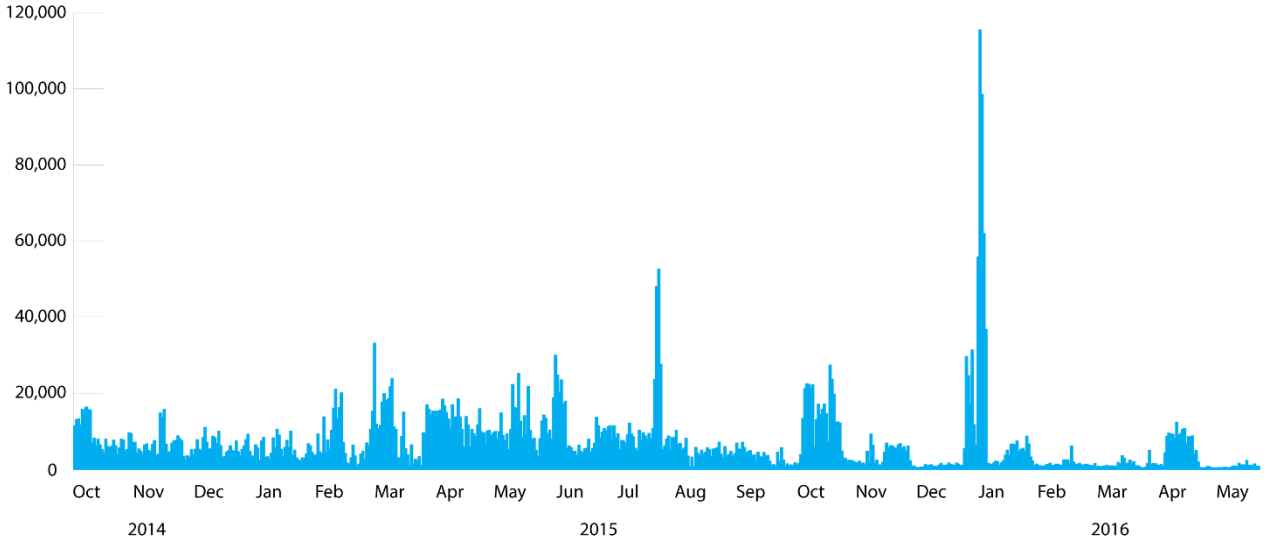
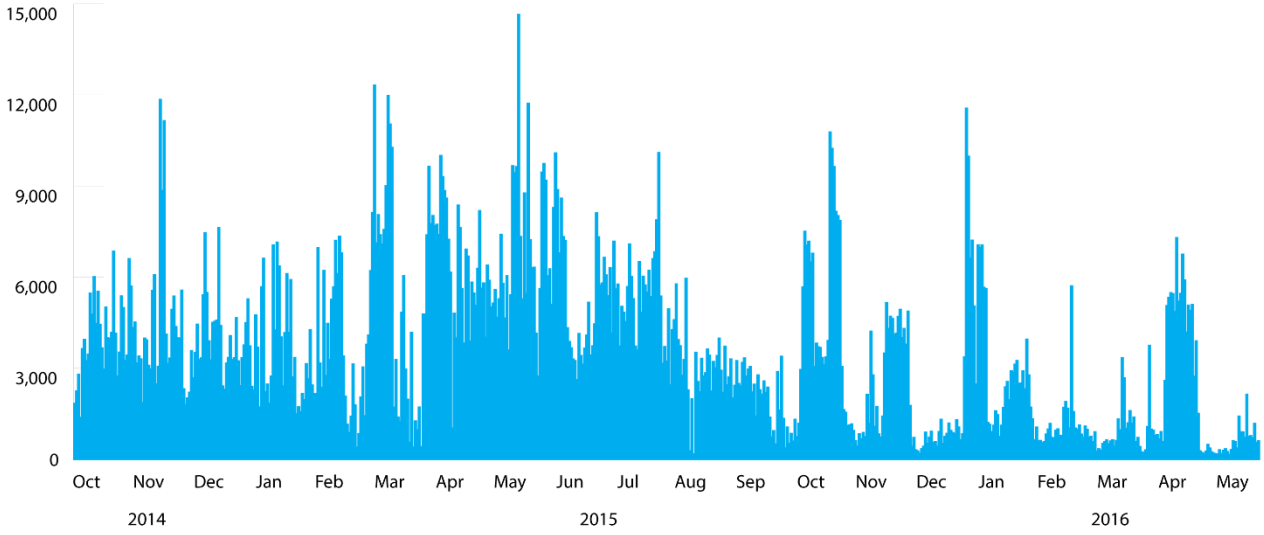


Figure 3.7.: Single users per day in the anti-Shīʿa test set



These graphics help to understand one of the main reasons for a higher positive Sentiment towards IS when weighted for the average of daily interactions compared to the average interactions, which links to the fact that overall, the positive Sentiment towards IS decreases in a similar fashion to that of the average daily interactions. This finding is even more evident when dividing the test set into two halves, as there is a great difference in the daily interactions and users between the first half and the second half. The average daily interactions in the first half is 8,978 daily interactions (*October 2014 – July 2015*) while the average in the second half is 5,217 daily interactions (*August 2015 – May 2016*). Similarly, the support for IS in the first period is higher than that of the second period (29.38% compared to 15.59%). The difference between average and weighted average should thus be better understood in the context of the time period of the findings, rather

than in the increase of interactions on specific days. The two graphics also help to explain why there is such a decrease in the pro-IS sentiment (6.88%) when there is a high number of daily interactions (*more than 30,000 daily interactions*). In observing figure 3.6. We can spot that these days is located at the beginning of January. This period was characterised by a key political event which affected Saudi Arabia: the execution of the Saudi Shīʿa Imam Nimr al-Nimr on the 2nd January 2016 and the following protests in Iran. In this period, I was able to observe in my test set a large amount of pro-Saudi tweets which were repeated many times. These tweets often carry a negative sentiment towards IS and draw a parallelism between the Islamic State and the Islamic Republic of Iran and its allies. For example, the tweet '*Video channel 24 Saudi about the Safawī Nuri al-Maliki*[160] *<link> #Arrest #Daesh #Islamic_State #NusraFront #Supporters'*[161] appeared 2,673 times[162] in a single-day test set. As stated before, I am not evaluating the percentage of bots in the sample, but the fact that the same tweets are repeated in different accounts without variations makes it very likely that there is a large share of automated pro-Saudi accounts (bots).Drawing from this observation, it is useful to look at the average activities for single users per day in the anti-Shīʿa sectarian Twitter-sphere. In this respect, I was able to observe that there is an increase in daily interactions with an increase of single users in some specific periods. For example, I spotted that there is a limited network of users who were particularly active on the days of very high activities (*more than 30,000 daily interactions*) (*see figure 3.6.*). On the average, a once-a-day user published 14,61 contents in these days, compared to the 1.96 contents per day in the entire sample. In this period, the pro-IS sentiment is very low (6,60%)., For the days of high activity (*more than 10.000 daily interactions*), I also observed a larger activity of users in the days, but a very different pro-IS percentage. On these days, which often include IS military victory (*e.g. IS conquests of the Iraqi city of Ramadi*) (Aljazeera, 2015) and IS attacks against Shīʿa mosques (*e.g. Attack against the Shīʿa mosque of al-Qaṭīf*) (BBC, 2015a), an average user published 2.27 tweets on the same day, which is higher than the activity rate for the entire sample (1.96). Contrary to days with very high activities, the pro-IS-sentiment is higher than the average one (*26.75% compared to 22.68%*) on the day of high activity. My interpretation is that there is a limited number of pro-IS tweets on the days of high activity, while the days of very high activity revolve around an issue which is linked to Saudi Arabia, and pro-Saudi accounts have been the most active in the conversation, making the anti-IS sentiment very high in the discussion.

Another interesting observation is that the period of higher support for IS is not that of the '*Peak*' (28.26% pro-IS tweets in the anti-Shīʿa sectarian test set, compared to 34.38% for the total test set in the same period), but it is that of the '*Decline'* period, (30.14% in pro-IS tweets in the anti-Shīʿa sectarian test set compared to

160 al-Maliki was the former president of Iraq.

161

The original tweet is: فيديو:ذوي شهيد الوطن يطالبون بالقصاص من الارهابيين الدواعش <link> #داعش #الدولة_الإسلامية #إعدامات_الداخلي #نمر_النمر#is:

162 891 in my test set. I report the number multiplied by three because of internal coherence with the previous figures, which are also multiplied by three.

17.71% for the entire test set in the same period). The last period has a very similar percentage of pro-IS tweets (15.59% in the anti-Shīʿa sectarian test set compared to 15.96% for the entire test set in the same period) This issue can be further analysed by looking at the figures of daily interactions, single users per day and differences for the three periods of peak, decline and defeat.

Peak: *6,449 average daily interactions, 4,012 single users per day* (*a difference of 2,347*)

Decline: *10,697 average daily interactions, 5,553 single users per day* (*a difference of 5,144*)

Defeat: *5,217 average daily interactions, 2319 single users per day* (*a difference of 2,897*)

When weighting the support for the Islamic State and the difference between average daily interactions and single users per day in the three periods, we obtain the following figures:

Peak: *27.49% of pro-IS Sentiment for the weighted average in the difference between daily interactions and single users per day of the anti-Shīʿa Sectarian test set compared to 30.67% pro-IS Sentiment for the weighted average in the difference between daily interactions and single users per day of the entire test set in the same period.*

Decline: *29.42% of pro-IS Sentiment for the weighted average in the difference between daily interactions and single users per day of the anti-Shīʿa Sectarian test set compared to 17.92% pro-IS Sentiment for the weighted average in the difference between daily interactions and single users per day of the entire test set in the same period.*

Defeat: *7,99% of pro-IS Sentiment for the weighted average in the difference between daily interactions and single users per day of the anti-Shīʿa Sectarian test set compared to 14.87% for the weighted average in the difference between daily interactions and single users per day of the entire test set in the same period.*

These findings show that there is an increase in the degree of support for a higher number of single users per day and daily interactions in the sample. This is consistent with the previous findings, but the higher percentage of pro-IS tweets in the period of '*Decline*' when compared to the that of the '*Peak*', needs further explanation. First, the percentage and the time pattern greatly differ in the anti-Shīʿa sectarian test set from that of the entire test set. In the entire test set, the percentage of pro-IS tweets decreases from 34.38% to 17.71%, while in the anti-Shīʿa sectarian test set, it increases from 27.49% to 29.42%. The result does not illustrate a significant change in the difference between single users per day and daily interactions. In the entire test set, the difference increases from an average of 69,937 in the peak period to 150,969 in the decline period (*ratio 1.2*), while in the anti-Shīʿa sectarian test set it increases from 2,347 in the peak period to 5,144 (*ratio 1.2*). I think that there are several possible interpretations of these findings. The first is that the IS anti-Shīʿa discourse was not as central as I expected in the IS propaganda in the first phase (*Peak*), but it increased its relevance in the spring of 2015. The increase might also be linked to the fact that there were no major terrorist attacks against Shīʿī outside the IS-controlled territories in the '*Peak*' period, while IS carried out 11 attacks with more than 20 victims in the period of '*Decline*'. My first interpretation is that IS actions might have triggered pro-IS sectarian

users in joining the Twitter discourse. However, my findings show that there is a decrease in the influence of attacks against Shīʿa on the pro-IS sentiment over the entire period. An indication of this pattern is that a higher percentage of pro-IS tweets is recorded in the period of March/May 2015 (35.07% compared to 18.91% for the entire sample), when IS started to attack a plurality of Shīʿa objectives (*e.g. IS attacks against a Shīʿa mosque in Sana'a on 20th March 2015* (The Guardian, 2015)*, IS attacks against a bus of Shīʿa Muslims in Karachi on 13th May 2015, and IS suicide bombing in a Shīʿa mosque of the Saudi city of al-Qaṭīf on 22nd May 2015*) (BBC, 2015b; Aljazeera, 2015b). A most probable explanation is that pro-Saudi accounts in my sample might have constituted a less important factor in determining the decrease of positive sentiment in the period of '*Defeat*' in the anti-Shīʿa sectarian test set when compared to that of the entire test set. I found an indication for that interpretation in the training set, where I observed that 18.22% of the total tweets carry a pro-Saudi stance, but only 5.37% of these contents carry an anti-Shīʿa sectarian stance.

3.6.1. The main topics in the pro-IS network in the anti-Shīʿa sectarian Twitter-sphere

Finally, I drew from the topic categories which I mentioned in the first chapter to identify the most recurrent issues in the training set regarding anti-Shīʿa sectarian discourse, and I looked at the difference when comparing the percentage in the anti-Shīʿa sectarian sample to that of the entire training set. These are '*Broadcasting military success*' (*67.2%, 47.91% in the entire training set*), '*Attracting an audience'* (*2.4%, 16.19% in the entire training set*), *'Marketing the Caliphate'* (*17.6%, 12.57% in the entire training set*), and *'Victimisation'* (*12.8%, 5.70% in the entire training set*). The figures show that the pro-IS network was more centred on the military dimension in the anti-Shīʿa sectarian discourse than in the entire sample because the selected terms refer to the enemy of IS. By far the most recurrent topic of the pro-IS tweets in the training set is *'Broadcasting military success'*, which celebrates IS victories against Shīʿa enemies. One example is the tweet: *'explosive device detonates on the infantry of the Nusayri army near the al-Jazah oil field which resulted in the wounding and killing of a high number of them*[163]*'.* The second most common topic of the pro-IS sample in the anti-Shīʿa sectarian discourse is that of *'Marketing the Caliphate'*, which revolves around the idea that IS is the legitimate representative of the Sunnī community and that it is running a state. A tweet which is included in this category is: *'the Rafidis have a group of pigs and call them the Holy crowd. The Muslims have the Islamic State and fight it and call it Khariji*[164]*'.* The third category of pro-IS contents in terms of topics is that of '*'Victimisation'* which centres on the idea that the Islamic State is under attack. Similarly to the category of '*Broadcasting military success*', this topic is more present in the anti-Shīʿa sectarian discourse than in the entire training set because the Shīʿa are often seen as making an alliance with other powers to hit the Islamic

163 The original tweet is:
تفجير عبوة ناسفة على مشاة من الجيش النصيري بالقرب من حقل جزل النفطي مما أدى لهلاك وجرح عدد منهم
#الدولة_الإسلامي

164 The original tweet is:
<user>الروافض لديهم مجموعة من الخنازير ويقدسونهم ويطلقون عليهم الحشد المقدس ، والمسلمون لديهم #الدولة_الإسلامية ويحاربونها ويقولون عنها خوارج!

State. An example is the tweet: '*The Islamic State is not only fighting for Tikrit, but it is fighting for the Islamic nation and repeals the first stage of the Zionist-Crusader-Majūsī project*[165]. Finally, there is the category of *'Attracting an audience',* which includes all those contents expressing support for the Islamic State and its actions to gain new followers. An example of contents included in this category is: '*Good news for Muslims, the death of Iranian Rāfiḍī by the Islamic State in Iraq amounted more than 3,000 Majūsī and Rāfiḍī*[166]*'*.The previous analysis shows that the Islamic State and its supporters depict Shīʿī as being outside the Muslim community, is hostile to Sunnīs for religious reasons, and celebrates the victories of the organisation against them. Furthermore, the analysis shows the centrality for IS propaganda and its supporters of victories against the Shīʿī. This finding suggests that IS propaganda did not focus so much on constructing the argument for the hostility of the Shīʿa and towards the Islamic State (*12.8% of all the pro-IS tweets in the Sectarian anti-Shīʿa discourse*), which was evident for most of the users who implemented a sectarian terminology. The change in the proportion of the Tweet is then linked to IS goals to demonstrate that it is capable of winning against its enemies (67.2%) and fighting for the entire Muslim community (17.6%).

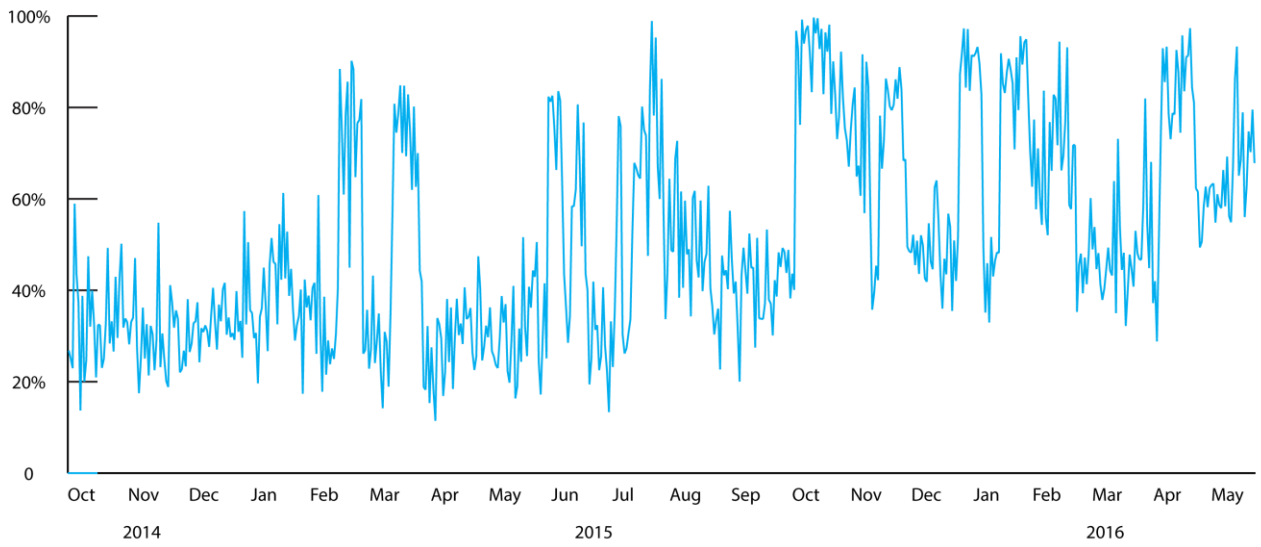
3.7. Support for the building blocks of IS ideology in the Arabic-speaking anti-Shīʿa Twitter-sphere

In the previous part of the dissertation, I discussed how the main markers of *ideological continuity* between the Islamic State and competing ideologies revolve around the idea that '*enemies are hostile towards Islam and the Sunnī community*' and that '*the fight between the Sunnīs and its enemies is of a religious nature'*. I also stated that part of the community believes the main enemies are the Shīʿī who hate Sunnīs for religious reasons. Furthermore, I argued in the first part of the chapter that to utilise one of the selected terms marks belonging to the group of Sunnī, and it indicates hostility to groups outside Shi-i. However, one can be hostile against Shīʿī but not believe that they are against the entire community. In order to provide an estimate of the tweets which indicate ideological continuity to IS, I looked at the percentage of those who support these second building blocks in the group of sectarian tweets and that of the tweets coded as anti-IS in this sample. I estimated the percentage of ideological continuity to be 23.90%, *(% of the estimated negative tweets <55.41%> weighted for the proportion of tweets coded in the second building block among the anti-Shīʿa Tweets <110 tweets> in relation to all tweets which contains a Shīʿa sectarian terminology in the training set <255 tweets>)*

Figure 3.8.: Percentage of the daily negative Sentiment towards IS in the second building block of the anti-Shīʿa test set

165 The original tweet is:
RT <user>: الدولة الإسلامية لا تقاتل عن تكريت بل تقاتل عن أمة الإسلام وتصد عنها السهام الأولى في مشروع الصهيو الصليبي المجوسي

166 The original tweet is:
RT <user> بشرى للمسلمين فطائس ايران الرافضية على يد #الدولة_الإسلامية في #العراق بلغ اكثر من 3000 مجوسي ورافضي <picture> .



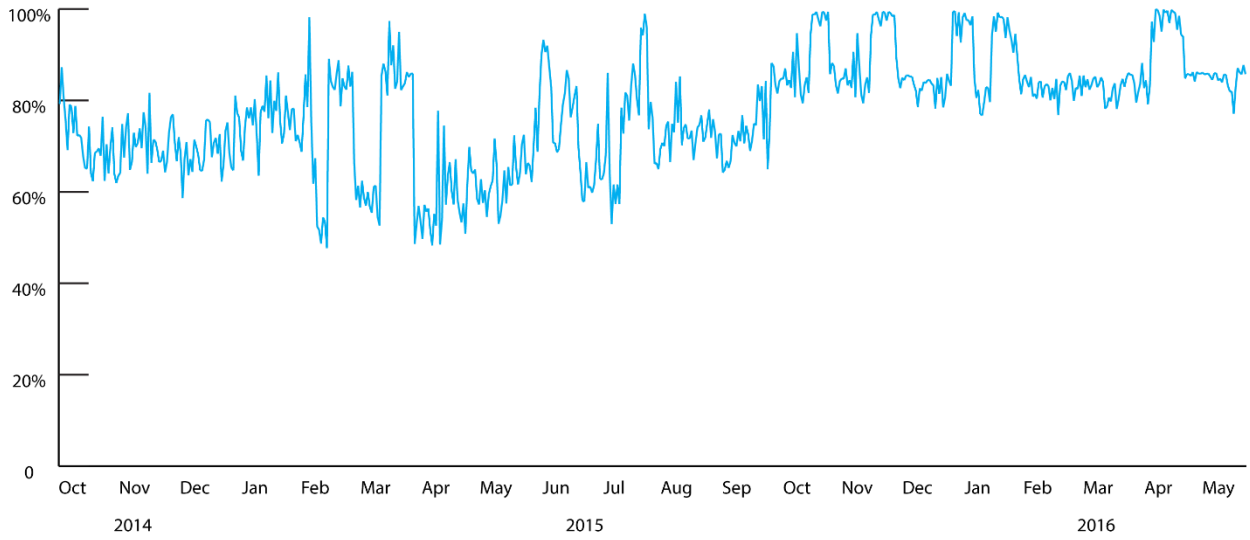
Before analysing the data and the time evolution, it is worth pointing out that I took into consideration only the second building block because the sample includes only those tweets containing sectarian terms against the Shīʿa. In other words, those users who stated that there is hostility towards Islam or Sunnīs from the Shīʿa inevitably expressed it in sectarian terms and were, therefore, coded in the second building block. When taking into consideration the selected keywords, it is easy to see the much higher percentage of ideological continuity in comparison with the entire sample (5.38%). In the previous part, I explained that sectarian discourse is limited to a few specific ideologies (Islamism and Salafism) in the Arabic-speaking Twitter-sphere, as a large share of accounts might frame their hostility to Iran and its allies in political terms (7.34% of the total training set and 57.34% of all tweets coded as carrying a negative stance towards Iran and its allies), or might simply not discuss the issue of Iran and its allies in my training set (87.18%). In this sense, it is not surprising to notice that there is such a high percentage of ideological continuity, as the anti-Shīʿa sectarian discourse overlaps in both the pro-IS and anti-IS discourses in my sample.

Moreover, the analysis of the time evolution for the tweets which carry a negative Sentiment in the Second Building Block provides some additional indications for interpreting the findings of the pro-IS Sentiment. The first is that the percentage of anti-IS tweets in the building block category when looking at the *Peak* period (October 2014-January 2015) is lower than the *Decline* period, which is characterised by an irregular pattern. This might provide an additional indication that the pro-IS network survived in the first months of 2015 and was particularly prominent in specific periods, while a very active network of pro-Saudi accounts also joined the conversation in that period. I have come to this conclusion because I noticed that pro-Saudi accounts, often sympathetic to Salafi ideology, are those who engaged in the anti-Shīʿa discourse. The percentage then maintained stability in the '*Defeat*' period, when only a small set of accounts took part in the discourse.

3.8. anti-IS Sentiment in the Arabic-speaking anti-Shīʿa Twitter-sphere

The percentage of anti-IS tweets is 77.52% *(the ratio between % of positive tweets over the sum of % of negative tweets*). This value drops to 77.11% when considering the weighted average for daily interactions, and it accounts for 74.51% when weighting it for the single users per day. The figure rises to 93.12% for those days when a high activity is recorded (more than *30,000 daily interactions*), and it reaches 73.25% in those days when a very high number of users join the discourse (more than *10,000 single users per day*), When looking at the time evolution of the anti-IS Sentiment in the anti-Shīʿa sectarian Twitter-sphere, it is evident that there is a decrease over time, but the percentage remains stable in the last period.

Figure 3.9.: Daily pattern for the negative Sentiment towards IS



3.8.1. The main topics in the anti-IS network of the anti-Shīʿa sectarian Twitter-sphere

Drawing from the same categories of the first chapter, I looked at the differences in the most recurrent topics in the anti-IS discourse, which are: *'Information'* (*51.47% - 35.17% in the entire training set*), '*Crimes and atrocities'*(*15.44% - 12.01% in the entire training set*), *'Generic hostility'*(*15.44% - 10.78% in the entire training set*), *'Religious illegitimacy'* (*11.02%* - 7.24% *in the entire training set*), '*Victory and Arrests'* (6.*61% - 34.80% in the entire training set*). The topic of information is over-represented compared with the entire training set because most of the tweets coded as negative in the sub-sample of the anti-Shīʿa discourse aim to inform people about the hostility of Iran and IS towards Saudi Arabia and the Sunnī community (*44.29% of the entire tweets coded in the 'Information' category*), or argue that Iran and IS are secretly allied against Saudi Arabia or the Sunnī-majority country (*55.71% of the entire tweets coded in the 'information' category*). An example of the first type of tweet is '*video: the 24 Saudi Channel about the Safawī Nuri al-Maliki <video>*.

#Arrest #Daesh #Islamic_State #Jabhat_al_Nusra #Supporters #ISIS #e3teqal[167]*'*. An example of the second group is '*RT <user> the Daesh criminal operation of today in Aden confirms that the organisation of the satanic state is a tool in the hand of the enemy of the nation, especially #Iran, the #Nusayri #Regime and the Houthi*[168]. The topic of crimes comprises all those tweets highlighting the crimes of Iran and the Iranian-aligned armed group, often by drawing a parallel with IS. An example is once again shown by those tweets which provide a parallel between Iran and IS, such as *'video of the Safawī plan: #Iran and #IS are killing us with our sons <link> #Execution_of_the_47_terrorists*[169] *#Crime_execution_Sheikh_al-Nimr*[170]*".* The topic of 'religious illegitimacy' revolves around the idea that IS, and the Shīʿī are both outside the true religion, which is Sunnī Islam. The tweet '*the Islamic State is terrorist militias, and the state of the Kharijites has not been established since its emergence and the Safavids will not establish a strong state and will not expand as the Holy Prophet said*[171]*'* well summarizes this concept. The category of '*Victory and arrests*' includes a few tweets which link the arrests of IS members to the Iranian plan against Saudi Arabia. An example is: '*Video Channel 24 Saudi: #Iran Safawī threats against #Saudi Arabia with the empty slogans <video> #ISIS #Islamic State #Arrests*[172]'

The topic analysis of the anti-Shīʿa sample shows that the over-representation of the category of '*information*' refers to the idea that there is no difference between Iran and IS when it comes to hostility to Sunnī and, in some cases, users go further in arguing that there is a secret alliance between the two powers. It follows that hostility for Iran and its allies, which are fighting against IS, and for the organisation can easily coexist for users. Another finding is that this idea is connected to the assumption that IS and Iran are secretly allied.

3.9. Conclusions

The previous analysis shows that the positive Sentiment towards IS has been higher in the anti-Shīʿa sectarian discourse than in the entire discourse about the Islamic State in the Arabic-speaking Twitter-sphere, but the difference is limited to a 2.28%. This confirms that the exclusion of interactions published by non-Sunnī

167 The original tweet is:
#ISIS #e3teqal اعتقال #داعش #الدولة_الإسلامية #جبهة_النصرة #المناصرون# …<video> فيديوقناة 24 سعودي عن الصفوي نوري المالكي

168 The original tweet is:
RT <User>: ظهور #داعش اليوم بعمليات إجرامية في #عدن يؤكد أن #تنظيم_الدولة_الشيطانية هو أداة بيد أعداء الأمة وعلى رأسهم #ايران و نظام #النصيري و #الحوثي

169 The execution of 47 terrorists refers to the decision of the Saudi State to execute 47 prisoners, including the highly influential Shīʿa religious authority Nimr al-Nimr.

170 The original tweet is:
_ارهابي #جريمة_اعدام_الشيخ_النمر47تنفيذ_القصاص_علي_# … …<video> فيديو قناة المخطط الصفوي:#إيران و #داعش يقتلوننا بأبنائنا

171 The original tweet is:
ان داعش ميليشيات ارهابيه وليست دوله .. لم تقم دوله للخوارج منذ ظهورها ولن تقوم للصفويين دوله قاهره ولن تتوسع كما قال الرسول الكريم

172 The original tweet is:
اعتقال #داعش #الدولة_الإسلامية# …<video> فيديو قناة 24 سعودي وتهديدات #ايران الصفويين ضد #السعودية بشعارات مستهلكة

accounts (estimated 12.06%) and the importance of the topic, which is at the centre of IS ideology (Roy, 2017, p. 80), illustrate a higher percentage of support for IS. However, the results show that the effect has been less relevant than I would expect. It seems that other factors played a role in determining such a low difference in the support for IS in the two samples. The first is that the anti-Shīʿa discourse is extensively widespread also outside the pro-IS network, which is an indication that many anti-IS users engage in sectarian rhetoric. This finding is confirmed by the higher percentage of *ideological continuity* in the anti-Shīʿa sectarian test set when compared to the entire test set (22.16% against 5.38%). This is one of the most interesting findings of the research, as it shows that hostility towards this group is not exclusive to the terrorist organisation, but it is also widespread outside the support-core for the Islamic State. Drawing from this finding, it is possible to forecast that other organisations might exploit this issue to achieve their political goals in the future. As discussed in the literature review, I argue that sectarian entrepreneurs are successful when they are able to exploit pre-existing hostility to achieve a political goal. The relative similarity between the overall pro-IS sentiments when compared to the entire dataset shows that IS had limited success in imposing its narrative in the anti-Shīʿa discourse. My interpretation of this finding is that the aggressive stance against Shīʿī did not translate into support for the terrorist organisation among those who perceived Iran and its allies, or even the members of this community, to be intrinsically against Sunnīs. Despite IS propaganda widely stressing the organisation to be in the front line of the fight against the perceived Shīʿa threat, many users identified other powers, especially Saudi Arabia, as the main power actively acting against Iran and its allies. In other words, their aggressive stance against Iran and its allies did not translate into support for the organisation, because the anti-Shīʿa discourse had already been mostly spread by Saudi Salafi public figures. The findings confirm the research of other scholars, (Abdo 2013, 2015: Siegel 2015, 2017), that the pro-Saudi accounts Salafi and Islamist users engaged in the sectarian discourse and their participation probably increased the percentage of the anti-IS discourses in the anti-Shīʿa sectarian test set and mitigated the effects of the absence of non-Sunnī users and IS propaganda against Shīʿī. I also have indications that, overall, the impact of pro-Saudi accounts was less relevant than in the entire sample, where the support for IS was lower than that of the anti-Shīʿa sectarian sample. Finally, another element which emerges from the analysis is that the pro-IS Sentiment in the test set shows a wider degree of difference for the '*Peak*' and '*Decline*' periods, which differ from the entire test set. I cannot fully determine the reasons for such an increase in the support for IS, which differs from the entire test set, but it might be that attacks against Shīʿa objectives have triggered pro-IS users in the first phase (early 2015), while this effect decreased in a later phase.

These findings provide an indication that IS was one of the factors, but not the only factor in the anti-Shīʿa sectarian discourse in the Arabic-speaking Twitter-sphere. In other words, the terrorist organisation tried to engage with a discourse which also characterised other ideologies, rather than just being the organisation which introduced this religious-based hostility among Arab users. The finding that anti-Shīʿa terminology had been already shared by a wide percentage of participants and that IS had limited success in exploiting this discourse indicates that IS acted as a sectarian entrepreneur which exploited a pre-existing discourse, though was unable

to exploit it fully. This finding makes it more difficult to tackle anti-Shīʿa hostility and provides an indication that it will likely persist also when the pro-IS discourse might eventually virtually disappear from the platform.

Conclusions

This last part of the dissertation will briefly summarize the main contributions and findings of the study and discuss its relevance for readers, experts and policymakers. In terms of contribution and results, the study provides an analysis of the sentiment towards IS in the Arabic-speaking Twitter-sphere over the course of three years, which is the longest time-period for all studies about the sentiment towards IS on Twitter (cfr. Ceron and al., 2018; Siegel and Tucker, 2017; Bodine-Baron and al., 2016). This is particularly relevant because the examined period includes all the main phases of IS political development (*peak, decline, defeat*), therefore offering a more comprehensive account about the evolution of the discourse regarding IS in the Arabic-speaking Twitter-sphere than previous studies.

Moreover, this three-year period was characterised by a plurality of political events and changes in the composition of the Arabic-speaking Twitter-Sphere, which have had an impact on the way the group was perceived. In the analysed period, the group passed from controlling a land where millions of people were living to lose virtually any to lose virtually all territorial control. My study has shown that there had been a clearly decreasing pattern in the support for IS in the two phases (*decline, defeat*) when its territorial control was shrinking. Besides, the wide period of analysis includes a large set of victories and defeats for the group, terrorist attacks, and widespread crimes, which allowed to note the impact of these events in the discourse about IS in the Arabic-speaking Twitter-sphere. This contribution is particularly relevant because the study includes a large set of events, which occurred in different phases of IS political development. This wide set of events allows for a more accurate study of their impact on the sentiment towards IS and reduces the risk that specific results may be linked to un-tested determinants. The findings have shown that not only censorship, the lagged positive, major military victories, and attacks against non-Muslim targets are significant in the entire three-year period, but my research has also pointed to determinants having a very diverse impact on the sentiment towards IS in the three phases of its political development.

This analysis has also allowed me to look at the discussion of the IS topic in the Twitter Arabic-speaking sphere, both in terms of the participation of the discourse and support for IS over the course of the examined period. For the first point, I could verify that both the average number of *'single users per day'* and *'daily interactions'* decreased in the analysed sample, which indicates that the topic lost relevance during the three-year period on Twitter. This conclusion points to the fact that Arabic-speaking users on Twitter lost interest in debating about the terrorist organisation. This is arguably one of the main losses for the terrorist group, which constantly seeks to gain public resonance in social media, as part of its propaganda efforts. For the second point, I noticed that there was a decreasing pattern for the positive sentiment towards IS, which likely links to a change in the composition of the Arabic-speaking Twitter-sphere. However, I have also registered the persistence of a small amount of pro-IS discourses in the test set, in spite of Twitter censorship. In other words, IS propaganda did not fully disappear from the platform up to September 2017.

The second contribution of the research is that it analyses both pro-IS content and its reception, as well as, more significantly, the most recurring topics of the anti-IS discourse. My dissertation, therefore, has aimed to fill a gap in the literature on IS propaganda which too often concentrates only on the recurrent topics of the terrorist organisation's message (cfr. Winter, 2015). In particular, my approach has focused on the reception of the discourse by distinguishing between different audiences (*supporters, possible sympathisers, opposers/enemies*). I believe that focusing on the reception of the IS discourse is particularly interesting because it can provide very useful information both for researchers to better understand the reasons for IS support and opposition, and policymakers for the implementation of a compelling counter-narrative. In particular, my study has shown that the reduction of the IS-controlled territory has not only represented a significant setback for its state-project, but it also impacted the most compelling element of its propaganda discourse, which is that IS is expanding because God is on its side. For the anti-IS network, I noticed that hostility to IS is often expressed by users in celebrating 'victories' against the terrorist organisation and in sharing 'information' to undermine its alleged legitimacy. Within this anti-IS network, I noticed that a wide share of tweets contained conspiracy theories which link the creation of IS to Iran. Another interesting finding for the anti-IS network is that the topic of 'crimes', and 'religious illegitimacy' are less prominent than I initially expected. This element might be further investigated in the following studies, also by comparing the most recurrent topics of the anti-IS discourse to those of other Twitter linguistic communities (*e.g. English-speaking Twitter discourse about IS*). Finally, another finding of my dissertation is that there has been a very active pro-Saudi network. Pro-Saudi accounts have had a very important role in increasing the share of anti-IS content, but they are also the users who often share anti-Shīʿa sectarian tweets.

This last finding also links to the third contribution of my dissertation, which is to provide an analysis of the relationship between pro-IS Sentiment and anti-Shīʿa sectarian discourse. I chose this topic because I consider it to be particularly relevant for understanding the Arabic-speaking Twitter-sphere discussion regarding IS, as the terrorist organisation shares this religious-based hostility with other ideologies (*e.g. Salafism*). Moreover, the relationship between the sectarianism and sentiment towards IS has not been addressed in previous studies on Twitter. Contrary to my expectations, I found that there is a 2.28% increase in support for IS when examining solely sectarian contents. This indicates that IS has provided a limited contribution to religious-based anti-Shīʿa discourse, as sectarianism is widespread both inside and outside of the IS 'support' network. In particular, my findings confirm those of previous studies on the sectarian discourse on Twitter (*cfr. Abdo 2013, 2015; Siegel 2015, 2017*) that have indicated the presence of this typology of discourse in the Arabic-speaking Twitter-sphere. In particular, anti-Shīʿīsm appears to be a very common topic among pro-Saudi or Salafi accounts. In this respect, my main observation is that the anti-Shīʿa sectarian discourse does not provide an indication of support for IS or other Jihadist organisations, but it is a cross-sectional element for the Arabic-speaking Twitter-sphere. For the analysed period, it is evident that sectarianism was not exclusive to IS and that the terrorist organisation mostly tried to exploit this hostility to gain political advantages.

A fourth contribution links to the theoretical approach of the dissertation, which aims at overcoming a dualistic understanding of support for/opposition to political organisations, to the study of online opinions. I implemented this approach because I believe that any study which revolves exclusively around the categories of support and opposition omits important information in analysing public opinion stance towards terrorism. To better understand this key element, it is worth pointing out that terrorist organisations do not emerge from a vacuum, but they are the product of a specific political environment. For example, the IRA would probably not have emerged without a consistent group of Irish people that considered the presence of a border between Northern Ireland and the Republic of Ireland to be unjust. The analysis of the degree of support for some of the elements of a terrorist group's ideology can provide relevant information regarding the perceived legitimacy of a group's fight within the constituency it claims to defend. To account for the support of the core-themes of terrorist narrative, I relied on a plurality of building blocks. This approach allows to better recognise the so-called 'grey area' between support and opposition to terrorist organisations. I believe accounting for this network to be very relevant because of the presence of a large number of people that side with neither the terrorist organisation nor with those fighting against them. I argue that the presence of this network makes it more difficult to repress terrorist groups, as those who are ideologically closer to the organisation do not attribute legitimacy to the effort of its enemies in fighting against terrorism. Finally, the building block approach, together with topic analysis of the anti-IS discourse, helps to account for the motivations in opposing a terrorist organisation, which often differ considerably among individuals. For example, one individual might think that there is a war against Islam but not believe that IS is fighting in the name of all Muslims. Such a person might, therefore, think that its state or the international community should prioritise the fight against the main enemy of Islam (*e.g. the US governmen*t) rather than IS, and not support a military operation against IS because it is carried out by the perceived enemies of the Islamic community. The same person may even go as far as drawing a moral equivalence between IS and its enemies or support other organisations which claim to be fighting a holy war against the enemies of its religion (*e.g. al-Qa'ida*). On the contrary, a person who claims that the whole war against Islam framework is nonsense because they believe political dynamics in the region are based on a struggle for power is more likely to see positively any action against IS from any state or organisation.

Drawing from the aforementioned contributions and findings, I argue that the present dissertation might be of interest to a plurality of audiences. First, it is relevant for researchers in Arab politics, who can find information on the Arabic-speaking discourse about IS in the period of its peak, decline and defeat. The topic of IS has been arguably one of the most relevant transnational issues in the Arabic-speaking Twitter-sphere. To look at the discourse on this platform provides relevant information regarding the discussion on the terrorist organisation on this particular social media platform and the most recurrent topics for users who have commented current developments and IS actions. Moreover, scholars of Arab politics might find it interesting to look at the analysis of the most recurrent topics of users in discussing the Islamic State, which sometimes includes references to ongoing events. In addition, it might be interesting for these scholars to look at the

impact of these events on overall Sentiment towards IS. Finally, the dissertation provides an in-depth analysis of the IS propaganda strategy, its historical development and the issue of sectarianism in the Arab world.

The second group of researchers who might be interested in the dissertation are those who study terrorism. The dissertation provides an interdisciplinary insight into the study of terrorist groups, which focuses on the impact of their discourse in a plurality of audiences. In this respect, my research offers an alternative methodology to the prevalent one in the study of terrorist groups, which normally revolves around the propaganda of the organisation, by utilising the Sentiment analysis and machine learning. Furthermore, I believe that the building block approach can be usefully implemented in other studies on terrorism, by combining an analysis on the support for some elements of the terrorist ideology, with one on the support for/opposition to the organisation. For example, a study on the online support for white-supremacist terrorism might combine an analysis on the degree of support for/opposition to elements of their ideology which might also be shared outside its core-support group (*e.g. there is an ongoing ethnic replacement in our society*) and the degree of support for/opposition to a set of organisations. In this sense, I believe that Twitter can be utilised by experts on terrorism as a source for evaluating the impact of the terrorist discourse.

The third audience includes researchers of social media, who can adopt a similar methodology for research on other topics. In my exposition, I have discussed why I believe that to combine manual-coding with machine learning can be useful for analysing a large amount of data. In my opinion, a fully automated methodology can provide a less-accurate estimation about sentiment towards a certain topic or organisation than my method, which combines natural language and machine learning to analyse a large set of data. In other words, I believe that the adopted methodology can be utilised by other researchers for other topics that address online public opinion.

Finally, the research can be relevant for policymakers, as it discusses the reasons which drive individuals to support or oppose a political organisation or ideology. This research might provide valuable information for an effective counter-narrative strategy to Jihadist ideology and find the most successful topics among those who have opposed the Islamic State. More in general, the findings of my research can contribute to a better understanding of how opinions in the Arab transnational online community take shape. This is because it provides an indication of the most popular IS assumptions, which can be utilised by other groups for sharing their discourse and should, therefore, be contrasted. Furthermore, it highlights the most successful topics in the anti-IS discourse, which can provide indications on the subjects with the most resonance in the Arabic-speaking public opinion. This information can be particularly useful for defining a more effective approach to the issue of support for Jihadism, which should not be limited to the censorship of the online propaganda organisation but should also target the terrorist ideology and its diffusion outside the terrorist support group.

Bibliography

Introduction

Abdo, G. (2015) 'Salafists and Sectarianism: Twitter and Communal Conflict in the Middle East'. *Brookings Center for Middle East Policy*. Available at: http://www.brookings.edu/~/media/research/files/papers/2015/03/26-sectarianism-salafism-social-mediaabdo/abdo-paper_final_web.pdf (Accessed 21 August 2017).

Abdo, G. (2013) 'The new Sectarianism: The Arab Spring and the Rebirth of the Shia-Sunni Divide'. *The Saban Center for Middle East policy at Brookings.* Available at: https://www.brookings.edu/wp-content/uploads/2016/06/Sunni-Shia-abdo.pdf (Accessed 21 August 2017).

Al-Rasheed, M. (2011). 'Sectarianism as Counter-Revolution: Saudi Responses to the Arab Spring'. *Studies in Ethnicity and Nationalism*, 11 (3), p. 513-526.

Anderson, B. (2016). *Imagined Communities*. London: Verso.

Atwan, A. (2015). *Islamic State: The Digital Caliphate*. London: Saqi Books.

Bahari, M., and Hassan M. (2014). 'The Black Flag Myth: An Analysis from Hadith Studies'. *Counter Terrorist Trends and Analysis*, 6 (8), p. 15-20.

Aslan, R. (2015). *Non c'è Dio all'Infuori di Dio*. Milano: Rizzoli.

Awan, I. (2017). 'Cyber-Extremism: Isis and the Power of Social Media'. *Society*, 54 (2), p. 138-149.

Barberá, P., Wang, N., Bonneau, R., Jost, J., Nagler, J., Tucker, J. and González-Bailón, S. (2015). 'The Critical Periphery in the Growth of Social Protest's, *PLoS ONE*, 10 (11).

Bergesen, A. (2008). *The Sayyid Qutb Reader*. New York, NY: Routledge.

Brundidge, J. (2010). 'Encountering "Difference" in the Contemporary Public Sphere: The Contribution of the Internet to the Heterogeneity of Political Discussion Networks'. *Journal of Communication*, 60 (4), p. 680-700.

Bunzel, C. (2015) 'From Paper State to Caliphate: The Ideology of the Islamic State'. *The Brookings Project on U.S. Relations with the Islamic World.* Available at: https://www.brookings.edu/wp-content/uploads/2016/06/The-ideology-of-the-Islamic-State.pdf (Accessed 30 May 2018).

BBC Arabic, (2014) 'أول قائمة سعودية للمنظمات الإرهابية تشمل الإخوان والنصرة و"داعش', 7 March. Available at: http://www.bbc.com/arabic/middleeast/2014/03/140307_saudi_terror_organizations (Accessed: 3 May 2019).

Celso, A. (2018). 'Al Qaeda's Post 9-11 Travails'. *Terrorism and Political Violence*, 30 (3), p. 553-561.

Ceron, A., Curini, L., and Iacus, S. M. (2016).' iSA: A Fast, Scalable and Accurate Algorithm for Sentiment Analysis of Social Media Content', *Information Sciences*, 367-368, p. 105-124.

Ceron, A., Curini, L., and Iacus, S. M. (2014). *Social Media e Sentiment Analysis*. Milan: Springer.

Ceron, A., Curini, L., Iacus, S. M. and Porro, G. (2013). 'Every Tweet Counts? How Sentiment Analysis of Social Media can Improve our Knowledge of Citizens' Political Preferences with an Application to Italy and France'. *New Media & Society*, 16 (2), p. 340-358.

Chang, J. H., Hodgins, H. S., Yi-Cheng, L., and Huang, C. L. (2014). 'On the Flexibility of the Automatic US-Them Divide' in Weinstein, N. *Human Motivation and Interpersonal Relationships: Theory, Research, and Applications*. Dordrecht: Springer, p. 97-121.

Chulov, M. (2014) 'Abu Bakr al-Baghdadi Emerges from Shadows to Rally Islamist Followers', *The Guardian*, 06 July. Available at: https://www.theguardian.com/world/2014/jul/06/abu-bakr-al-baghdadi-isis (Accessed: 3 May 2018).

Cook, D. (2007). *Martyrdom in Islam*. Cambridge: Cambridge University Press.

Cordes, B. (1987). 'When Terrorists do the Talking: Reflections on Terrorist Literature'. *Journal of Strategic Studies*, 10 (4), p. 150-171.

Cronin, A. K. (2015). 'ISIS is not a Terrorist Group'. *Foreign Affairs.* 18 February. Available at: https://www.foreignaffairs.com/chapters/middle-east/2015-02-18/isis-not-terrorist-group (Accessed 10 May 2018).

Cronin, A. (2009). *How Terrorism Ends*. Princeton: Princeton University Press.

Dabiq 3 (2016), p. 38. Available at: https://azelin.files.wordpress.com/2016/07/the-islamic-state-e2809cdacc84biq-magazine-322.pdf (Accessed: 8 May 2019)

Dabiq 8 (2015), p.20. Available at: https://Jihadology.net/2015/03/30/al-%e1%b8%a5ayat-media-center-presents-a-new-issue-of-the-islamic-states-magazine-dabiq-8/ (Accessed: 8 May 2019).

Dabiq 6 (2015), p.60. Available at: https://azelin.files.wordpress.com/2015/02/the-islamic-state-e2809cdc481biq-magazine-622.pdf (Accessed: 8 May 2019).

Dabiq 9 (2015) p. 54. Available at: https://Jihadology.net/2015/05/21/al-%e1%b8%a5ayat-media-center-presents-a-new-issue-of-the-islamic-states-magazine-dabiq-9/ (Accessed: 10 May 2019).

Dabiq 9 (2015b) p. 54. Available at: https://Jihadology.net/2015/05/21/al-%e1%b8%a5ayat-media-center-presents-a-new-issue-of-the-islamic-states-magazine-dabiq-9/ (Accessed: 10 May 2019).

De Poli, B. (2017). 'Il Califfato di al-Baghdādī: L'Ideologia dello "Stato Islamico". In: Trentin M. *L'Ultimo Califfato.* Bologna: Il Mulino.

De Ruiter, A. (2012). 'The Political Character of Absolute Enmity: On Carl Schmitt's Concept of the Political and Theory of the Partisan'. *Archives for Philosophy of Law and Social Philosophy*, 1 (98), p. 52-66.

De Zuniga, G., Jung H., and Valenzuela, S. (2012). 'Social Media Use for News and Individuals' Social Capital, Civic Engagement and Political Participation'. *Journal of Computer-Mediated Communication*, 17(3), p. 319-336.

DiGrazia, J., McKelvey, K., Bollen J., and Rojas F. (2013). 'More Tweets, More Votes: Social Media as a Quantitative Indicator of Political Behavior'. *PLoS ONE.* 8 (11).

Droogan, J. and Peattie, S. (2017). 'Mapping the Thematic Landscape of Dabiq Magazine'. *Australian Journal of International Affairs*, 71 (6), p. 591-620.

Erdem, B. K. and Bilge, R. (2017). 'The Announcement of Dar al Harb in Cyber Media in Context of the Theological Policy of Jihād: Reading the Cyber-Jihād and ISIS Based on the Pharmakon Characteristic of the Cyber Media'. *International Journal of Islamic Thought*. 11, p. 19-31.

Eutelsat (2017) 'Further growth at Eutelsat 7/8 West Video Neighbourhood: Now Reaching into Over 56 million TV homes in the Middle East and North Africa'. 14 November. Available at: http://news.eutelsat.com/pressreleases/further-growth-at-eutelsat-7-slash-8-degrees-west-video-neighbourhood-now-reaching-into-over-56-million-tv-homes-in-middle-east-and-north-africa-2271485 (Accessed: 15 May 2019).

Farwell, J. (2014). *The Media Strategy of ISIS.* Survival, 56 (6), p. 49-55.

Federal Security Service (2019) 'The Unified Federal List of Organisations, Including Foreign and International Organisations, Recognized as Terrorist in Accordance with the Legislation of the Russian Federation' (Единый федеральный список организаций, в том числе иностранных и международных организаций, признанных в соответствии с законодательством Российской Федерации террористическим). Available at: http://www.fsb.ru/fsb/npd/terror.htm (Accessed: 2 May 2019).

Fiorani Piacentini, V. (2003). *Islam. Logica della Fede e Logica della Conflittualità*. Milan: Franco Angeli,

Fisher, R. J. (1993). 'Social Desirability Bias and the Validity of Indirect Questioning'. *Journal of Consumer Research*, 20 (2), p. 303-315.

Freeden, M. (2013). 'The Morphological Analysis of Ideology'. In: Freeden M., Tower Sargent L., Stears M. (ed.) *The Oxford Handbook of Political Ideologies.* Oxford: Oxford University Press, p. 115-138.

Freeden, M. (1996). *Ideologies and Political Theory: A Conceptual Approach*. Oxford: Clarendon Press

Gambhir, H. (2016) 'The Virtual Caliphate: ISIS's Information Warfare'. *Institute for the Study of War.* Available at: https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/resources/docs/ISW%20The%20Virtual%20Caliphate%20Gambhir%202016%20(2).pdf (Accessed: 9 June 2018).

González-Bailón, S., Wang, N., Rivero, A., Borge-Holthoeferd, J., and Moreno, Y. (2014). Assessing the bias in samples of large online networks. Social Networks, 38, p. 16-27.

Gregg, H. (2010). 'Fighting the Jihad of the Pen: Countering Revolutionary Islam's Ideology'. *Terrorism and Political Violence*, 22 (2), p. 292-314.

Habermas, J. (1991). *The Structural Transformation of the Public Sphere*. Cambridge, MA: MIT Press.

Hassan, H. (2016) 'The Sectarianism of the Islamic State. Ideological Roots and Political Context'. *Carnegie Endowment for International Peace*. Available at: https://carnegieendowment.org/2016/06/13/sectarianism-of-islamic-state-ideological-roots-and-political-context-pub-63746 (Accessed: 9 May 2018).

Heck, A. (2017). 'Images, Visions and Narrative Identity Formation of ISIS'. *Global Discourse*, 7 (2-3), p. 244-259.

Hopkins, N. S. and Ibrahim, S. E. (2003). *Arab Society. Class, Gender, Power & Development (3rd ed.).* Cairo: American University Press.

Huey, L. (2015). 'This is Not Your Mother's Terrorism: Social Media, Online Radicalization and the Practice of Political Jamming'. *Journal of Terrorism Research,* 6 (2).

Juergensmeyer, M. (2016). *Terror in the Mind of God. The Global Rise of Religious Violence*. Berkeley/Los Angeles/London: University of California Press.

Klausen, J. (2015). 'Tweeting the Jihad: Social Media Networks of Western Foreign Fighters in Syria and Iraq'. *Studies in Conflict & Terrorism,* 38 (1), p. 1-22.

Kalyvas, S. (2015). 'Is ISIS a Revolutionary Group and if Yes, What Are the Implications?'. *Special Issue on the Islamic State,* 9 (4), p. 42-47.

Kaplan, A. (1981). 'The Psychodynamics of Terrorism', in Y. Alexander & J. Gleason (Eds.), *Behavioral and Quantitative Perspectives on Terrorism.* New York, NY: Pergamon, p. 35-50.

Liu, B. (2012). Sentiment Analysis and Opinion Mining. San Rafael, CA: Morgan & Claypool Publishers.

Morgan & Claypool. Lynch M. (2006). *Voices of the New Arab Public – Iraq, Al-Jazeera, and Middle East Politics Today*. New York, NY: Columbia University Press.

Magdy, W., Darwish, K., and Weber, I. (2016). '#FailedRevolutions: Using Twitter to Study the Antecedents of ISIS Support'. *First Monday*, 21 (2).

Maggioni, M., Magri, P. and Lombardi, M. (2015) 'Twitter and Jihad. The Communication Strategy of ISIS'. *Institute for International Political Studies (ISPI).* Milan: Institute for International Political Studies (ISPI). Available at: http://www.ispionline.it/sites/default/files/pubblicazioni/Twitter_and_Jihad_en.pdf (Accessed 5 March 2018).

Mahood, S. and Rane, H. (2016). 'Islamist Narratives in ISIS Recruitment Propaganda'. *The Journal of International Communication*, 23 (1), p. 15-35.

Maynard, J. L. (2014). 'Ideological Analysis'. In Blau A. (ed.) *Methods in Analytical Political Theory.* Cambridge: Cambridge University Press, p. 297-325.

McCants, W. (2015). *The ISIS Apocalypse: The History, Strategy, and Doomsday Vision of the Islamic State*. New York, NY: St Martin's Press.

Mellor, N. (2013). *Modern Arab Journalism*. Cambridge: Cambridge University Press.

Moriarty, B. (2015). 'Defeating ISIS on Twitter. Technology Science'. *Technology Science.* Available at: https://techscience.org/a/2015092904/ (Accessed 23 April 2018).

Nagler, J. and Tucker, J A. (2015). 'Drawing Inferences and Testing Theories with Big Data', *PS: Political Science & Politics*, 48 (1), p. 84-88.

ODNI (2015) 'Releases Letter from al-Zawahiri to al-Zarqawi'', *Office of the Director of National Intelligence,* 11 October. Available at: http://fas.org/irp/news/2005/10/letter_in_english.pdf (Accessed: 2 May 2019).

Olidort J. (2015) 'The Politics of "Quietist" Salafism', *The Brookings Project on U.S. Relations with the Islamic World*. Available at: https://www.brookings.edu/wp-content/uploads/2016/07/Brookings-Analysis-Paper_Jacob-Olidort-Inside_Final_Web.pdf (Accessed: 5 May 2018).

Oots, K. (1990). 'Bargaining with Terrorists: Organizational Considerations'. *Terrorism*, 13, p. 145-158.

Phillips, C. (2012). *Everyday Arab Identity: The Daily Reproduction of the Arab World*. London: Routledge.

Pintak, L. (2009). 'Border guards of the "Imagined" Watan: Arab Journalists and the New Arab Consciousness'. *The Middle East Journal*, 63 (2), p. 191–212.

Pelletier, I. and al. (2016). 'Why ISIS's Message Resonates: Leveraging Islam, Sociopolitical Catalysts, and Adaptive Messaging'. *Studies in Conflict & Terrorism*, 39 (10), p. 871-899.

Pregill, M. (2016) 'ISIS, Eschatology, and Exegesis: The Propaganda of Dabiq and the Sectarian Rhetoric of Militant Shiism', *Mizan*, 1 (1). Available at: http://www.mizanproject.org/journal-post/eschatology-and-exegesis/ (Accessed: 22 April 2018).

Religionscope (2002) ‘Document – Martyrs: The Building Blocks of Nations’, 1 February. Available at: https://english.religion.info/2002/02/01/document-martyrs-the-building-blocks-of-nations/ (Accessed: 11 May 2019).

Roy, O. (2004). *Globalized Islam*. New York, NY: Columbia University Press.

Roy, O. (2017). *Jihad and Death*. New York, NY: Hurst & Company.

Ruby, C. (2002). ‘The Definition of Terrorism’. *Analyses of Social Issues and Public Policy*, 2 (1), p. 9-14.

Schmid, A.P. (ed.) (2011). *Handbook of Terrorism Research*. London: Routledge, p. 86-87.

Schmitt, C. (2007). *The Concept of the Political: Expanded Edition*. Chicago, IL: Chicago University Press

Siboni, G., Cohen D. and Koren, T. (2015). ‘The Islamic State’s Strategy in Cyberspace’. *Military and Strategic Affairs*, 7 (1), p. 3-29.

Siegel, A. (2015) ‘Sectarian Twitter Wars: Sunnī-Shia Conflict and Cooperation in the Digital age’. *Carnegie Endowment for the International peace*. Available at: http://carnegieendowment.org/2015/12/20/sectarian-Twitter-wars-Sunnī-Shīʿa-conflict-and-cooperation-indigital-age/in6n (Accessed: 21 August 2017).

Siegel, A. and Tucker, J. (2017). ‘The Islamic State’s Information Warfare’. *Journal of Language and Politics*, 17 (2), p. 258-280.

Siegel, A. (2017) ‘Viral Pulpits: Clerics and the Sectarianization of the Gulf Online Sphere’. *Project on Middle East Political Science (POMEPS).* Available at: http://pomeps.org/2017/01/09/viral-pulpits-clerics-and-the-sectarianization-of-the-gulf-online-sphere (Accessed: 23 April 2018).

Sindima, H. J. (2017). *Major Issues in Islam*. Lanham, MD: Hamilton Books.

Steinberg, G. (2009). ‘Jihadi-Salafism and the Shiis: Remarks about the Intellectual Roots of anti-Shiism’. In *Meijer, R.* (ed.) *Global Salafism*. New York, N.Y.: Columbia University Press.

Stern, J., and Berger, J.M. (2015). *ISIS. The State of Terror*. William Collins: London.

Tajfel, H. and Turner, J.C. (1979). ‘An Integrative Theory of Intergroup Conflict’. In W.G. Austin and S. Worchel (ed.) *The Social Psychology of Intergroup Relations*. Monterey, CA: Brooks/Cole, p. 33-47.

Telhami, S. (1999). ‘Power, Legitimacy and Peace-Making in Arab Coalitions – The New Arabism’. In Binder, L. (ed.), *Ethnic Conflict and International Politics in the Middle East*. Gainesville, FL: University of Florida Press, p. 43–60.

‘The Global Coalition, (2019) 'Anti-Daesh coalition’. Available at: https://theglobalcoalition.org/en/ (Accessed: 5 May 2019)

Tufekci, Z. and Wilson, C. (2012). ‘Social Media and the Decision to Participate in Political Protest: Observations from Tahrir Square’. *Journal of Communication*, 62, p. 363-369.

Tumasjan, A., Sprenger, T. O., Sandner, P. G., Welpe I. M. (2010). ‘Predicting Elections with Twitter: What 140 Characters Reveal about Political Sentiment’. *Proceedings of the International Conference on Weblogs and Social Media.* 2010. *(ICWSM-2010)*. George Washington University, 23-26 May. Washington, DC.

United Nations (2019) ‘Designated Terrorist Groups and Targeted Sanctions’. Available at: https://www.unodc.org/e4j/en/terrorism/module-1/key-issues/UN-designated-terrorist-groups.htm (Accessed: 2 May 2019).

U.S. Department of State (2019) 'Foreign Terrorist Organisation' Available at: https://www.state.gov/j/ct/rls/other/des/123085.htm (Accessed: 3 May 2019).

Vaccari, C. and Valeriani, A. (2016). 'Accidental Exposure to Politics on Social Media as Online Participation Equalizer in Germany, Italy, and the United Kingdom'. *New Media & Society*, 18 (9), p. 1857-1874.

Valbjorn, M. (2009). 'Arab Nationalism(s) in Transformation: From Arab Interstate Societies to an Arab-Islamic World Society', in B. Buzan and A. Gonzalez-Pelaez, *International Society and the Middle East: English School Theory at the Regional Level*, London: Palgrave MacMillan, p. 144-48.

Valbjorn, M. and Bank, A. (2011). 'The New Arab Cold War: rediscovering the Arab dimension of Middle East regional politics'. *Review of International Studies*, 38 (01), p. 3-24.

Van Dijk, T. (2011). *Discourse Studies*. Thousand Oaks, CA.: Sage Publications.

Van Dijk, T. (1998). *Ideology and Discourse. A Multidisciplinary Introduction*. Thousand Oaks, CA.: Sage Publications.

Varol, O., Ferrara, E., Clayton, A.D., Menczer F., and Flammini, A. (2017). 'Online Human-Bot interactions: Detection, Estimation, and Characterization'. *Eleventh International AAAI Conference on Web and Social Media*. Montreal University, 15 May. Association for the Advancement of Artificial Intelligence. Montréal.

Wagemakers, J. (2012). *A Quietist Jihadi*. Cambridge: Cambridge University Press.

Washington Post, (2016) 'Why the best technology is Human-Empowered and Computer Assisted', 18 May. Available at: https://www.washingtonpost.com/video/postlive/using-big-data-to-analyze-chinese-social-media-posts/2016/05/18/5eae83ae-1d0c-11e6-82c2-a7dcb313287d_video.html?noredirect=on&utm_term=.455f3c667b9a (Accessed: 3 May 2019).

Weiss, M. and Hassan, H. (2015). ISIS. Inside the Army of Terror. New York, NY: Regan Arts

Wiechert, L. (2017). *Marketing of Terrorism. Analysing the Use of Social Media by Isis*. Norderstedt: Studylab.

Wilāyat Ḥalab (2016) 'Him We Will Give a Good Life', *Jihadology*, 2 February. Available at: https://Jihadology.net/2016/02/02/new-video-message-from-the-islamic-state-him-we-will-give-a-good-life-wilayat-halab (Accessed: 4 May 2019).

Wilāyat Ḥalab (2015) 'Joy of Aleppo with the Return of the Gold Dīnār', *Jihadology*, 6 September. Available at: https://Jihadology.net/2015/09/06/new-video-message-from-the-islamic-state-joy-of-aleppo-with-the-return-of-the-gold-dinar-wilayat-%e1%b8%a5alab/ (Accessed: 4 May 2019).

Wilāyat al-Raqqah' (2016) 'Health Services in the Islamic State', *Jihadology*, 24 April. Available at: https://Jihadology.net/2015/04/24/new-video-message-from-the-islamic-state-health-services-in-the-islamic-state-wilayat-al-raqqah/ (Accessed: 1 May 2019).

Wilāyat Nīnawā (2016) 'New video message from The Islamic State: "Care for Orphans Within the Confines of The Islamic State', *Jihadology*, 3 March. Available at : https://Jihadology.net/2016/03/03/new-video-message-from-the-islamic-state-care-for-orphans-within-the-confines-of-the-islamic-state-wilayat-ninawa/ (Accessed: 2 May 2019).

Wilāyat Nīnawā (2015) 'Marriage Contracts Office'. *Jihadology*, 2 August. Available at: https://Jihadology.net/2015/08/02/new-video-message-from-the-islamic-state-marriage-contracts-office-wilayat-ninawa/ (Accessed: 4 May 2019).

Wiktorowicz, Q. (2004). 'Framing Jihad: Intramovement Framing Contests and Qaida's Struggle for Sacred Authority'. *International Review of Social History*. 49 (12), p. 159-177.

Wiktorowicz, Q. (2006). Anatomy of the Salafi Movement. *Studies in Conflict & Terrorism*. 29 (3), p. 207-239.

Winter, C. (2015) 'Documenting the Virtual Caliphate'. *Quilliam Foundation.* Available at: http://www.quilliaminternational.com/wp-content/uploads/2015/10/FINAL-documenting-the-virtual-caliphate.pdf. (Accessed: 10 April 2018).

Winter, C. (2017) 'Media Jihad: The Islamic State's Doctrine for Information Warfare'. *International Centre for the Study of Radicalisation and Political Violence (ICSR).* Available at: http://icsr.info/wp-content/uploads/2017/02/Media-Jihad_web.pdf (Accessed: 10 May 2018).

Winter, C. (2018). 'Apocalypse, Later: a Longitudinal Study of the Islamic State Brand'. *Critical Studies in Media Communication*, 35 (1), p. 103-121.

Wight, C. (2009). 'Theorising Terrorism: The State, Structure and History'. *International Relations*, 23 (1), p. 99-106.

World Bank (2017) Arab World. Available at: https://data.worldbank.org/region/arab-world (Accessed: 20 June 2019).

Zelin, A. Smyth, P. (2014). The Vocabulary of Sectarianism. *Foreign Policy*. Available at: http://foreignpolicy.com/2014/01/29/the-vocabulary-of-sectarianism/ (Accessed: 22 Aug. 2019).

Chapter One

ABC News (2015) 'Islamic State: Iraqi Forces Recapture City of Tikrit from Jihadists after Month-Long Battle" 1 April. Available at: https://www.abc.net.au/news/2015-04-01/iraq-hails-tikrit-27liberation27-after-month-long-battle/6363956 (Accessed: 15 June 2019).

AnsaMED (2015) 'Libya: ISIS Advances, Takes Radio and TV Offices in Sirte', 14 February. Available at: http://www.ansamed.info/ansamed/en/news/nations/libya/2015/02/13/libya-isis-advances-takes-radio-and-tv-offices-in-sirte_66145cf2-6396-4aa3-9f42-c31b3555f155.html (Accessed: 5 July 2019).

al-Yaqoubi, M. (2016). *Refuting ISIS.* Herndon, VA: Sacred Knowledge.

al-Qarawee, H. (2015) 'The Discourse of ISIS: Messages, Propaganda and Indoctrination'. In Maggioni, M., Magri, P. and Lombardi, M. (ed.) *Twitter and Jihad. The Communication Strategy of ISIS*. Institute for International Political Studies (ISPI). Milan: Institute for International Political Studies (ISPI), p.145-165. Available at: http://www.ispionline.it/sites/default/files/pubblicazioni/Twitter_and_Jihad_en.pdf (Accessed: 5 May 2018).

al-Turkmani, A. (2015) 'Saudi TV Series Deploys new Weapon against ISIS-Satire', *CNN*, 22 June. Available at: https://edition.cnn.com/2015/06/22/middleeast/anti-isis-satire/index.html (Accessed: 12 June 2019).

Anderson, B. (2016). *Imagined Communities*. London: Verso.

Anti Defamation League (2009) 'Aryan Nations/Church of Jesus Christ Christian'. Available at: https://www.adl.org/education/resources/profiles/aryan-nations (Accessed: 20 June 2019).

Arab Barometer (2017) 'Arab Barometer Wave IV, 2016-2017'. Available at: https://www.arabbarometer.org/waves/arab-barometer-wave-iv (Accessed: 5 June 2019).

Arab Center for Research and Polcy Studies (2014) 'The Military Campaign against the Islamic State in Iraq and the Levant: Arab Public Opinion', November 2014. Available at: https://www.dohainstitute.org/en/lists/ACRPS-PDFDocumentLibrary/Arab_Public_Opinion_on_ISIL_and_the_Coalition_against_ISIL_the_Full_Report.pdf (Accessed: 24 June 2019).

Ashley, F. and Alkhshali, H. (2015) 'Ramadi Has Been Taken Back from ISIS', 2015, *CNN*, 29 December. Available at: https://edition.cnn.com/2015/12/28/middleeast/iraq-military-retakes-ramadi/index.html (Accessed: 15 June 2019)

Awan, I. (2017). 'Cyber-Extremism: Isis and the Power of Social Media'. *Society*. 54 (2), p. 138-149.

Atwan, A. (2015). *Islamic State: The Digital Caliphate*. London: Saqi Books.

Badawy, A. and Ferrara, E. (2017). 'The Rise of Jihadist Propaganda on Social Networks'. *SSRN Electronic Journal*. Available at: https://arxiv.org/ftp/arxiv/papers/1702/1702.02263.pdf (Accessed:15 June 2019).

BBC (2015a) 'Battle for Kobane: Key Events', 25 June. Available at: https://www.bbc.com/news/world-middle-east-29688108 (Accessed:15 June 2019).

BBC (2015b) 'Islamic State Seizes Syria's Ancient Palmyra', 21 May. Available at: https://www.bbc.com/news/world-middle-east-32820857 (Accessed: 15 June 2019).

Bateman, M. E. (1974) 'The Battlefronts of People's War' in Ellis, J. and Elliott-Bateman, M. *Revolt to revolution*. Manchester: Manchester University Press, p. 313-362.

Bengio, Y. and Grandvalet. Y. (2004). 'No Unbiased Estimator of the Variance of K-Fold Cross-Validation'. *Journal of Machine Learning Research*, 5., p. 1089-1105.

Berger, J.M. and Morgan, J. (2015). 'The ISIS Twitter Census. Defining and Describing the Population of ISIS Supporters on Twitter'. *The Brookings Project on U.S. Relations with the Islamic World.* Available at: https://www.brookings.edu/wp-content/uploads/2016/06/isis_Twitter_census_berger_morgan.pdf (Accessed: 5 May 2018).

Black, I. (2015) 'Charlie Hebdo Killings Condemned by Arab States – but Hailed Online by Extremists', *The Guardian*, 7 January. Available at: https://www.theguardian.com/world/2015/jan/07/charlie-hebdo-killings-arab-states-Jihadi-extremist-sympathisers-isis. (Accessed: 30 May 2019).

Bodine-Baron, E., Helmus, T.C., Magnuson, M. and Winkelman, Z. (2016) 'Examining ISIS Support and Opposition Networks on Twitter'. *RAND Corporation.* Available at: https://www.rand.org/content/dam/rand/pubs/research_reports/RR1300/RR1328/RAND_RR1328.pdf (Accessed: 10 May 2018).

Brachman, J. (2009). *Global Jihadism.* London: Routledge.

Ceron, A., Curini, L., and Iacus, S.M. (2016).' iSA: A Fast, Scalable and Accurate Algorithm for Sentiment Analysis of Social Media Content', *Information Sciences*, 367-368, p. 105-124.

Ceron, A., Curini, L. and Iacus, S.M. (2014). *Social Media e Sentiment Analysis*. Milan: Springer.

Ceron, A., Curini, L. and Iacus, S. M. (2018). 'ISIS at Its Apogee: The Arabic Discourse on Twitter and What We Can Learn from that About ISIS Support and Foreign Fighters'. *SAGE Open*, 9 (1).

Colas, B. (2017). 'What Does Dabiq Do? ISIS Hermeneutics and Organizational Fractures within Dabiq Magazine'. *Studies in Conflict & Terrorism*, 40 (3), p. 173-190.

Chappell B. (2017) 'Mosul Has Been Liberated from ISIS Control, Iraq's Prime Minister Says', 9 June. *National Public Radio*. Available at: https://www.npr.org/sections/thetwo-

way/2017/07/09/536307429/mosul-has-been-liberated-from-isis-control-iraqs-prime-minister-says?t=1564033225485 (Accessed: 15 June 2019).

Danju I., Maasoglu, Y., and Maasoglu, N (2013) 'From Autocracy to Democracy: The Impact of Social Media on the Transformation Process in North Africa'. *Procedia - Social and Behavioral Sciences,* 81, p. 678-681

DiGrazia, J. McKelvey, K, Bollen J, and Rojas F (2013). 'More Tweets, More Votes: Social Media as a Quantitative Indicator of Political Behavior'. *PLoS ONE,* 8 (11).

Farwell, J. (2014). 'The Media Strategy of ISIS'. *Survival*, 56 (6), p. 49-55.

Fisher, R. J. (1993). 'Social Desirability Bias and the Validity of Indirect Questioning'. *Journal of Consumer Research*, 20 (2), p. 303-315.

Fishman, B. (2016). 'The Master Plan: Isis, Al-Qaeda, and the Jihadi Strategy for Final Victory'. New Haven and London: Yale University Press.

Foundation for Political, Economic, and Social Research - SETA (2009) 'Public Perception of the Kurdish Issue in Turkey'. Available at: http://setadc.org/wp-content/uploads/2015/05/SETA_Research_Report_Public_Perception_Kurdish_Question.pdf (Accessed: 3 June 2019).

Freeden, M. (2013). 'The Morphological Analysis of Ideology'. In: Freeden M., Tower Sargent L., Stears. M. (ed.) *The Oxford Handbook of Political Ideologies.* Oxford: Oxford University Press, p. 115-138.

Fushiki, T. (2009). 'Estimation of Prediction Error by Using K-fold Cross-Validation'. *Statistics and Computing*, 21 (2), p. 137-146.

Galloway, C. (2016). 'Media Jihad: What PR can Learn in Islamic State's Public Relations Masterclass'. *Public Relations Review*, 42 (4), p. 582-590.

Global Terrorism Index (2018) *Institute of Economics and Peace & Vision of Humanity.* Available at: http://globalterrorismindex.org/viewed (Accessed: 24 June 2019).

Goidel, R. and Shields, T. (1994). 'The Vanishing Marginals, the Bandwagon, and the Mass Media'. *The Journal of Politics*, 56 (3), p. 802-810.

Gregg, H. (2010). 'Fighting the Jihad of the Pen: Countering Revolutionary Islam's Ideology'. *Terrorism and Political Violence*, 22 (2), p. 292-314.

Grimmer, J. and Brandon, S. M. (2013). 'Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts'. *Political Analysis*, 21 (3). p. 267-297.

Halverson, J., Goodall, H. L., and Corman, S. R. (2015). *Master Narratives of Islamist Extremism*. New York, NY: Palgrave Macmillan.

Harmon, C. C. and Bowdish, R. G. (2018). *The Terrorist Argument. Modern Advocacy and Propaganda*. Washington. D.C.: Brooking Institution Press.

Hashim, A. (2014). 'The Islamic State: From al-Qaeda Affiliate to Caliphate'. *Middle East Policy*. 21 (4), p. 69-83.

Hopkins, D. and King, G. (2010). 'A Method of Automated Nonparametric Content Analysis for Social Science'. *American Journal of Political Science*. 54 (1), p. 229-247.

Ingram, H. J. (2014). 'Three Traits of the Islamic States' Information Warfare'. *The RUSI Journal.* 159 (6), p. 4-11.

Ingram, H. J. (2016). ‘An Analysis of Inspire and Dabiq: Lessons from AQAP and Islamic State's Propaganda War’. *Studies in Conflict & Terrorism*, 40 (5), p. 357-375.

Islamic Networks Group (ING) (2015) 'A Comprehensive List of Condemnations from Muslim Institutions or Associations of the IS'. Available at: https://ing.org/global-condemnations-of-isis-isil/ (Accessed: 24 June 2019).

Haddad, F. (2011). *Sectarianism in Iraq*. Oxford: Oxford University Press.

Haddad, F. (2014). ‘Sectarian Awakening: The Reinvention of Sunnī Identity after 2003’. *Singapore Middle East Papers.* 17, p. 70-101.

Hannak, A. Anderson, E., Barret, L., Lehmann, S., Mislove, A. and Riedewald M. (2012). 'Tweetin’ in the Rain: Exploring Societal-Scale Effects of Weather on Mood', *Proceedings of the Sixth International AAAI Conference on Weblogs and Social Media.* 4-7 June. Palo Alto: AAAI Press, p. 479-482.

Heck, A. (2017). Images, Visions and Narrative Identity Formation of ISIS. *Global Discourse*, 7(2-3), p. 244-259.

Jamal, A. and al. (2015). ‘Anti-Americanism and Anti-Interventionism in Arabic Twitter Discourses’. *Perspectives on Politics*. 13 (01), p. 55-73.

Jones, S. G., Dobbins J., Byman, D., Chivvis, C. S., Connable B., Martini, J., Robinson, E., Chandler, N. (2017). ‘Rolling Back the Islamic State', *Rand Corporation*.

Juergensmeyer, M. (2016). *Terror in the Mind of God. The Global Rise of Religious Violence*. Berkeley/Los Angeles/London: University of California Press.

Karagiannis, E. and McCauley, C. (2006). ‘Hizb ut-Tahrir al-Islami: Evaluating the Threat Posed by a Radical Islamic Group That Remains Nonviolent’. *Terrorism and Political Violence*, 18 (2), p. 315-334.

Klausen, J. (2015). ‘Tweeting the Jihad: Social Media Networks of Western Foreign Fighters in Syria and Iraq’. *Studies in Conflict & Terrorism*, 38 (1), p. 1-22.

Kohavi, R. (1995). *‘A Study of Cross-Validation and Bootstrap for Accuracy Estimation and Model Selection’.* in Proceeding of the International Joint Conference on Artificial Intelligence (IJCAI). University f Montreal, 20-25 August 1995. Montreal. p. 1137-1145.

Magdy, W., Darwish, K., and Weber I. (2016). ‘#FailedRevolutions: Using Twitter to Study the Antecedents of ISIS Support’. *First Monday*, 21 (2).

Maggiolini, P. and Plebani, A. (2015) ‘The Centrality of the Enemy in al-Bagdadi's Caliphate’, in Maggioni, M., Magri, P. and Lombardi, M. *Twitter and Jihad. The Communication Strategy of ISIS*. Institute for International Political Studies (ISPI). Milan: Institute for International Political Studies (ISPI), p. 27-46. Available at: http://www.ispionline.it/sites/default/files/pubblicazioni/twitter_and_Jihad_en.pdf (Accessed: 5 March 2018).

Mahood, S. and Rane, H. (2016). ‘Islamist Narratives in ISIS Recrutement Propaganda’. *The Journal of International Communication*, 23 (1), p. 15-35.

McCants, W. (2015). *The ISIS Apocalypse: The History, Strategy, and Doomsday Vision of the Islamic State*. New York, NY: St Martin’s Press.

Michael Elliott-Bateman, M (1974). 'The Battlefronts of People's War', in Elliott-Bateman M., Ellis J. and Bowden T. *Revolt to Revolution: Studies in the 19th and 20th Century European Experience*. Manchester: Manchester University Press, p. 314-362.

Mirani, T. B. and Sasi, S. (2017). '*Two-Level Text Summarization from Online News Sources with Sentiment Analysis'*. Networks & Advances in Computational Technologies (NetACT). International Conference, Mar Baselios College of Engineering & Technology,20-22 July. Thiruvananthapuram, India.

Mohammed Bin Rashid School of Government (2017) 'Social Media and the Internet of Things', *Arab Social Media Report*. Available at: https://www.mbrsg.ae/getattachment/1383b88a-6eb9-476a-bae4-61903688099b/Arab-Social-Media-Report-2017 (Accessed: 5 June 2019)

Moriarty, B. (2015) '*Defeating ISIS on Twitter. Technology Science'*. Available at: https://techscience.org/a/2015092904/ (Accessed: 9 May 2018).

Mourtada, R. and Salem, F. (2014). 'Citizen Engagement and Public Services in the Arab World: The Potential of Social Media'. *SSRN Electronic Journal*.

Nagler, J., Tucker, Joshua A. (2015). 'Drawing Inferences and Testing Theories with Big Data'. *PS: Political Science & Politics*, 48 (1), p. 84-88.

Nasr, S. (2006). *The Shia Revival*. New York, NY: Norton.

Pintak, L. (2009). 'Border Guards of the "Imagined" Watan: Arab Journalists and the New Arab Consciousness'. *The Middle East Journal*, 63 (2), p. 191-212.

Pelletier, I. and al. (2016). 'Why ISIS's Message Resonates: Leveraging Islam, Sociopolitical Catalysts, and Adaptive Messaging'. *Studies in Conflict & Terrorism*, 39 (10), p. 871-899.

Post, J. M. (1990). Terrorist psycho-logic: Terrorist Behaviour as a Product of Psychological Forces'. In: Reich W. (ed), *Woodrow Wilson Center series. Origins of terrorism: Psychologies, ideologies, theologies, states of mind.* New York, NY: Cambridge University Press, p. 25-40.

Roy, O. (2004). *Globalized Islam*. New York, NY: Columbia University Press.

Ross, B., Gordon, J. and Ferran, L., 'Twitter Escalates Its Own ISIS Battle: 2,000 Accounts Suspended Last Week', 2 March. *ABC News*. Available at: https://abcnews.go.com/International/twitter-escalates-isis-skirmish-2000-accounts-suspended-week/story?id=29335434 (Accessed: 15 June 2019).

Saad, S, Chamoun, M., and Bazan, S. B. (2015) '*Infowar on the Web: When the Caliphate Goes Online'*. In 2015 ACM Web Science Conference. ACM, 2 November. New York, NY.

Salloukh, B. F. (2013). 'The Arab Uprisings and the Geopolitics of the Middle East'. *The International Spectator*, 48 (2), p. 32-46.

Schmid, A. and De Graaf, J. (1983). *Violence as Communication*. London: Sage.

Schmitt-Beck, R. (2015) '"Bandwagon effect"'. *The International Encyclopedia of Political Communication*. Available at: https://onlinelibrary.wiley.com/doi/full/10.1002/9781118541555.wbiepc015 (Accessed: 19 May 2018).

Siboni, G., Cohen, D. and Koren, T. (2015). The Islamic State's Strategy in Cyberspace. *Military and Strategic Affairs*, 7 (1), p. 3–29.

Siegel, A. and Tucker, J. (2017). 'The Islamic State's Information Warfare'. *Journal of Language and Politics*. 17 (2), p. 258-280.

Stephens-Davidowitz, S. (2014). 'The Cost of Racial Animus on a Black Presidential Candidate: Using Google Search Data to Find What Surveys Miss'. *Social Science Research Network (SSRN)*. Available at: https://ssrn.com/abstract=2238851 (Accessed: 29 May 2018).

Sunstein, C. (2009). *Going to Extremes*. Oxford: Oxford University Press.

Tajfel, H. and Turner, J.C. (1979). 'An Integrative Theory of Intergroup Conflict'. In Austin W.G. and Worchel S. (ed.) *The Social Psychology of Intergroup Relations*. Monterey, CA: Brooks/Cole, p. 33–47.

Tiku, N. and Newton, C. (2015) 'We Suck at Dealing with Abuse', *The Verge*, 4 February. Available at: https://www.theverge.com/2015/2/4/7982099/Twitter-ceo-sent-memo-taking-personal-responsibility-for-the.(Accessed: 8 June 2019).

TRT World (2016) 'Kurdish YPG drives ISIS out of Syria's Hasakah', 29 June. Available at: https://web.archive.org/web/20160624094708/http://www.trtworld.com/mea/kurdish-ypg-drives-isis-out-syrias-hasakah-5107 (Accessed:15 June 2019).

Tony Blair Institute for Global Change (2018) 'How Islamist Extremists Target Civilians'. Available at: https://institute.global/insight/co-existence/how-islamist-extremists-target-civilians (Accessed: 24 June 2019).

Twitter (2018) 'Twitter Transparency Report'. Available at: https://blog.Twitter.com/official/en_us/topics/company/2018/Twitter-transparency-report-12.html (Accessed: 28 June 2019).

Tugwell, M. (1986). 'Terrorism and Propaganda: Problem and Response'. In: Wilkinson P. and Stewart A. M. (eds). *Contemporary Research on Terrorism*. Aberdeen: Aberdeen University Press.
Van Dijk, T. (2011). *Discourse Studies*. Thousand Oaks, CA.: Sage Publications.

Van Dijk, T. (1998). *Ideology and Discourse. A Multidisciplinary Introduction*. Thousand Oaks, CA: Sage Publication.

Varol, O., Ferrara, E., Davis, C., Menczer, F., and Flammini A. (2017). *Online Human-Bot Interactions: Detection, Estimation, and Characterization*. International AAAI Conference on Web and Social. Stanford University, 25-28 June. Palo Alto, CA.

Wiechert, L. (2017). *Marketing of Terrorism. Analysing the Use of Social Media by Isis*. Norderstedt: Studylab.

Weimann, G. and Winn, C. (1994) *'The Theater of Terror: Mass Media and International Terrorism'*. White Plains, NY: Longman, p. 61.

Winter, C. (2015) 'Documenting the Virtual Caliphate'. *Quilliam Foundation*. Available at: http://www.quilliaminternational.com/wp-content/uploads/2015/10/FINAL-documenting-the-virtual-caliphate.pdf. (Accessed: 9 April 2018).

Winter, C. (2018). 'Apocalypse, later: A Longitudinal Study of the Islamic State Brand'. *Critical Studies in Media Communication*, 35 (1), p. 103-121.

Wright, J. (1991). *Terrorist Propaganda*. New York, NY: St. Martin's Press.

Chapter Two

Abu Bakr, N (2010). 'The Management of Savagery'. *Azelin Files - translated into English by William McCants via a grant from the John M. Olin Institute for Strategic Studies at Harvard University*. Available

at: https://azelin.files.wordpress.com/2010/08/abu-bakr-naji-the-management-of-savagery-the-most-critical-stage-through-which-the-umma-will-pass.pdf (Accessed: 4 June 2019).

Aljazeera (2015a) 'ISIL Claims Responsibility for Kuwait Shia Mosque Blast', 26 June. Available at:, https://www.aljazeera.com/news/2015/06/isil-claim-responsibility-kuwait-Shia-mosque-attack-150626124555564.html (Accessed: 18 July 2019).

Aljazeera (2017) 'SDF: 'ISIL Removed from Raqqa's Old City', 1 September. Available at: , https://www.aljazeera.com/news/2017/09/sdf-isil-removed-raqqa-city-170901145721259.html (Accessed: 4 June 2019).

Amara T. (2015) 'Gunman kills 39 at Tunisian Beachside Hotel, Islamic State claims attack', *Reuters,* 26 June. Available at: https://www.reuters.com/article/us-tunisia-security/gunman-kills-39-at-tunisian-beachside-hotel-islamic-state-claims-attack-idUSKBN0P61F020150626 (Accessed: 17 July 2019).

Amara, T. and Argoubi, M. (2015) 'Gunmen storm Tunisian museum, kill 17 foreign tourists', 18 March. Available at: https://www.reuters.com/article/us-tunisia-security/gunmen-storm-tunisian-museum-kill-17-foreign-tourists-idUSKBN0ME18E20150318 (Accessed: 6 July 2019).

al-Yaqoubi, M. (2016). *Refuting ISIS,* Herndon, VA: Sacred Knowoledge.

Ashley, F. and Alkhshali, H. (2015) 'Ramadi has been taken back from ISIS, Iraqis say', *CNN,* 29 December., Available at: https://edition.cnn.com/2015/12/28/middleeast/iraq-military-retakes-ramadi/index.html (Accessed: 6 July 2019).

Asur, S. and Huberman, B. (2010). *Predicting the Future with Social Media, in Web Intelligence and Intelligent Agent Technology (WI-IAT*), 2010 IEEE/WIC/ACM International Conference on, IEEE, vol. 1, p. 492–499.

Barberá, P., Wang, N., Bonneau, R., Jost, J., Nagler, J., Tucker, J. and González-Bailón, S. (2015). 'The Critical Periphery in the Growth of Social Protests'. *PLoS ONE,* 10 (11).

Barcelò, J. and Labzina, E. (2018). ''Do Islamic State's Deadly Attacks Disengage, Deter, or Mobilize Supporters?''. British Journal of Political Science. 1-21.

Barnard, A. and Shoumali, K., (2015) 'Kurd Militia Says ISIS is Expelled from Kobani', *The New York Times*, 27 January. Available at:https://www.nytimes.com/2015/01/27/world/middleeast/kurds-isis-syria-kobani.html (Accessed: 5 July 2019).

BBC (2015a) 'Saudi Arabia Attack: Islamic State Claims Shia Mosque Bombing', 2015, 22 May. Available at: https://www.bbc.com/news/world-middle-east-32843510 (Accessed: 6 July 2019).

BBC (2015b) 'Islamic State Seizes Syria's Ancient Palmyra', 21 May. Available at: https://www.bbc.com/news/world-middle-east-32820857 (Accessed: 12 July 2019).

BBC (2015c) 'Syrian Archaeologist Killed in Palmyra' by IS militants'19 August. Available at: https://www.bbc.com/news/world-middle-east-33984006 (Accessed: 17 July 2019).

BBC (2015d) 'Alan Henning Killed by Islamic State', 4 October. Available at: https://www.bbc.com/news/uk-29485405 (Accessed: 17 July 2019).

BBC (2015e) 'France Attack: As it Happened', 26 June. Available at: https://www.bbc.com/news/live/world-europe-33287095 (Accessed: 17 July 2019).

BBC (2016) 'Kurdish Forces 'Cut Off IS Escape Route' Through Manbij', 12 August. Available at: https://www.bbc.com/news/world-middle-east-37063857 (Accessed: 8 July 2019).

BBC (2017) ‘Battle for Mosul: Iraq PM Abadi Formally Declares Victory’, 10 July. Available at: https://www.bbc.com/news/world-middle-east-40558836 (Accessed: 8 July 2019).

Berger, J.M. and Morgan J. (2015). ‘The ISIS Twitter Census. Defining and Describing the Population of ISIS Supporters on Twitter’, *The Brookings Project on U.S. Relations with the Islamic World*. Available at: http://www.quilliaminternational.com/wp-content/uploads/2015/10/FINAL-documenting-the-virtual-caliphate.pdf (Accessed: 5 May 2018).

Bloom, M. M. (2005). *Dying to Kill. The Allure of Suicide Terror*. New York, NY: Columbia University Press.

Botelho G. and Ellis R. (2015) ‘San Bernardino shooting investigated as 'act of terrorism'', 15 December. Available at: https://edition.cnn.com/2015/12/04/us/san-bernardino-shooting/index.html (Accessed: 8 July 2019).

Bollen, J., Mao, H. and Zeng, X. (2011). ‘Twitter Mood Predicts the Stock Market’. *Journal of Computational Science*. 2 (1). p. 1-8.

Broomfield M. (2016) ‘Twitter Shut Down 125,000 ISIS-Linked Accounts’, *The Independent*, Available at: https://www.independent.co.uk/life-style/gadgets-and-tech/news/125000-isis-linked-accounts-suspended-by-Twitter-a6857371.html (Accessed: 6 June 2019).

Butler D. and Holmes O. (2014) ‘Islamic State Seizes Large Areas of Syrian Town despite Air Strikes’, *Reuters*, 8 October. Available at: https://www.reuters.com/article/us-mideast-crisis/islamic-state-seizes-large-areas-of-syrian-town-despite-air-strikes-idUSKCN0HX0XF20141009 (Accessed: 3 July 2019).

Callimachi (2018) ‘The ISIS Files’ *The New York Times*, 4 April. Available at: https://www.nytimes.com/interactive/2018/04/04/world/middleeast/isis-documents-mosul-iraq.html (Accessed: 2 July 2019).

Callimachi R. and Higgins A. (2015) ‘Video Shows a Paris Gunman Declaring His Loyalty to the Islamic State’, *The New York Times*, 12 January. Available at: https://www.nytimes.com/2015/01/12/world/europe/amedy-coulibaly-video-islamic-state.html?_r=0. (Accessed: 3 July 2019).

Ceron, A., Curini, L., Iacus, S. M. and Porro, G. (2013). ‘Every Tweet Counts? How Sentiment Analysis of Social Media Can Improve our Knowledge of Citizens’ Political Preferences with an Application to Italy and France’. *New Media & Society*, 16 (2), p. 340-358.

Ceron, A., Curini, L. and Iacus, S. M. (2018). ‘ISIS at Its Apogee: The Arabic Discourse on Twitter and What We Can Learn from that about ISIS Support and Foreign Fighters’. *SAGE Open*, 9 (1).

Chang, J. H., Hodgins H. S., Yi-Cheng L., and Huang C. L. (2014) ‘On the Flexibility of the Automatic US-Them divide’ in Weinstein, N. *Human Motivation and Interpersonal Relationships: Theory, Research, and Applications.* Dordrecht: Springer, p. 97-121.

Chulov M. (2014a) ‘Hundreds of Iraqi Sunnis from Albu Nimr tribe in Anbar Province’, *The Guardian*, 30 October. Available at: https://www.theguardian.com/world/2014/oct/30/mass-graves-hundreds-iraqi-Sunnīs-killed-isis-albu-nimr (Accessed: 5 July 2019).

Chulov M. and Malik S. (2015) ‘Isis Video Shows Jordanian Hostage Being Burned to Death’. The Guardian. 2 February. Available at: https://www.theguardian.com/world/2015/feb/03/isis-video-jordanian-hostage-burdning-death-muadh-al-kasabeh (Accessed: 6 July 2019).

Cockburn, P. (2015) 'War with Isis: Iraq Declares Victory in the Battle for Tikrit - but Militants make Ominous Advances in Neighbouring Syria's Capital', *The Independent*, 1 April. Available at: https://www.independent.co.uk/news/world/middle-east/war-with-isis-iraq-declares-victory-in-the-battle-for-tikrit-but-militants-make-make-ominous-10150360.html (Accessed: 6 July 2019).

Cronin, A. (2009). *How Terrorism Ends*. Princeton, NJ: Princeton, University Press.

Cronin, A. K. (2015) 'ISIS is not a Terrorist Group'. *Foreign Affairs*. Available at: https://www.foreignaffairs.com/chapters/middle-east/2015-02-18/isis-not-terrorist-group (Accessed: 16 May 2018).

Dearden, L. (2016) 'Isis Claims Responsibility for Brussels Attacks 'in revenge for Belgium's Role Fighting Militants in Syria and Iraq', *The Independent*, 22 March. Available at: https://www.independent.co.uk/news/world/europe/isis-claims-responsibility-for-brussels-attacks-explosions-bombings-at-airport-and-maalbeek-maelbeek-a6946136.html (Accessed: 9 July 2019).

Declich, L. (2017). 'Le Dimensioni del Fenomeno "Stato Islamico"'. In: Trentin M. *L'Ultimo Califfato.* Bologna: Il Mulino.

European Parliament (2016) 'Joint Motion for a Resolution', 3 February 2013. Available at: http://www.europarl.europa.eu/doceo/document/RC-8-2016-0149_EN.pdf?redirect (Accessed: 24 June 2019).

Fernandez, A. (2015) 'Here to Stay and Growing: Combating ISIS Propaganda Networks'. *Center for Middle East Policy at Brookings*. Available at: https://www.brookings.edu/wp-content/uploads/2016/06/IS-Propaganda_Web_English.pdf (Accessed 21 May 2018).

Farwell, J. (2014). The Media Strategy of ISIS. *Survival*, 56 (6), p. 49-55.

Flannery, F. (2015). The Role of Commitment Mechanisms in Terrorist Radicalization: Terrorist Utopias. *The European Consortium for Political Research Convention*, 26 - 29 August 2015. Montreal: Université de Montréal.

Gartenstein-Ross, D., Nathaniel, B., and Bridget, M. (2016) 'The Islamic State's Global Propaganda Strategy'. *The International Centre for Counter-Terrorism – The Hague (ICCT) ICCT Research Paper*. Available at: https://www.icct.nl/wp-content/uploads/2016/03/ICCT-Gartenstein-Ross-IS-Global-Propaganda-Strategy-March2016.pdf (Accessed: 21 May 2018).

Gardner B. (2015) 'Paris shootings: France's Most Wanted Woman Hayat Boumeddiene Has Escaped to Syria', *The Telegraph*, 10 January. Available at: https://www.telegraph.co.uk/news/worldnews/europe/france/11337944/Paris-shootings-Frances-most-wanted-woman-Hayat-Boumeddiene-has-escaped-to-Syria.html (Accessed: 5 July 2019).

Georgoula, I., Pournarakis, D., Bilanakos, C., Sotiropoulos, D. and Giaglis, G. (2015). 'Using Time-Series and Sentiment Analysis to Detect the Determinants of Bitcoin Prices'. *SSRN Electronic Journal*.

Global Terrorism Database (2019). Available at: https://www.start.umd.edu/gtd/ (Accessed 17 July 2019).

Graham, H. E. (2017) 'The Guardian Iraq Announces 'Victory' over Islamic State in Mosul', *The Guardian*, 9 July. Available at: https://www.theguardian.com/world/2017/jul/09/iraq-announces-victory-over-islamic-state-mosul (Accessed:12 July 2019).

Hegghammer, T. (2006). 'Global Jihadism after the Iraq War'. *The Middle East Journal*, 60 (1), p. 11-32.

Halverson, J., Goodall, H. L., and Corman, S. R. (2015). *Master Narratives of Islamist Extremism*. New York, NY: Palgrave Macmillan.

Harmon, C. C. and Bowdish, R. G. (2018). *The Terrorist Argument. Modern Advocacy and Propaganda*. Washington DC: Brooking Institution Press.

Hern, A. (2015) 'Twitter Announces Crackdown on Abuse with New Filter and Tighter Rules', *The Guardian*, 21 April. Available at: https://www.independent.co.uk/life-style/gadgets-and-tech/news/125000-isis-linked-accounts-suspended-by-Twitter-a6857371.html (Accessed: 6 June 2019).

Jamal, A. and al. (2015). 'Anti-Americanism and Anti-Interventionism in Arabic Twitter Discourses'. *Perspectives on Politics*, 13 (1), p. 55-73.

Kermit, R. (ed.). *War Report on the OSS*. I., New York, NY: Walker and Company. p. 99.

Kwon, K. H., Chadha M., and Pellizzaro K. (2017) Proximity and Terrorism News in Social Media: A Construal-Level Theoretical Approach to Networked Framing of Terrorism in Twitter, *Mass Communication and Society*, 20 (6).

Lakomy, M. (2018). 'One of the Two Good Outcomes: Turning Defeats into Victories in the Islamic State's Flagship Magazine Rumiyah'. *Terrorism and Political Violence*, p. 1-19.

Lister, C. (2015). *The Islamic State*. Washington, D.C.: Brookings Institution Press.

Mabon, S. and Royle, S. (2017). *The origins of ISIS*. London: I.B. Tauris.

Magdy, W., Darwish K., and Weber I. (2016). '#FailedRevolutions: Using Twitter to Study the Antecedents of ISIS Support'. *First Monday*, 21 (2).

Magdy, W., Darwish, K. and Abokhodair, N. (2015*). Quantifying Public Response towards Islam on Twitter after Paris Attacks.* preprint arXiv.

Maggiolini, P. and Plebani, A. (2015). 'The Centrality of the Enemy in al-Bagdadi's Caliphate'.In: Maggioni, M., Magri, P. and Lombardi, M. *Twitter and Jihad. The Communication Strategy of ISIS.* Institute for International Political Studies (ISPI). Milan: Institute for International Political Studies (ISPI), p. 27-46. Available at: http://www.ispionline.it/sites/default/files/pubblicazioni/Twitter_and_Jihad_en.pdf (Accessed: 5 March 2018).

Markovsky, B. and Edward J. Lawler, E. J. (1994) 'A New Theory of Social Solidarity'. In: Markovsky B., O'Brien J., and Heimer K. Greenwich, *Advances in Group Processes*, 11, Conn.: JAI.

Martinez, L. and Winsor, M. (2017) 'Battle for Mosul: Iraq PM Abadi formally Declare Victory', *ABC News*, 20 October. Available at: https://abcnews.go.com/International/us-backed-syrian-force-declares-victory-isis-capital/story?id=50605976 (Accessed: 8 July 2019).

Marone, F. (2013). *La Politica del Terrorismo Suicida*. Rubbettino: Soveria Mannelli.

Marone, F. (2008). Il Terrorismo Suicida nel caso Palestinese: una Ricerca Empirica (1993-2005*), Quaderni d Scienza Politica*. xv (2), p. 207-249.

McCants, W. (2015). *The ISIS Apocalypse: The History, Strategy, and Doomsday Vision of the Islamic State*. New York, NY: St Martin's Press.

Moriarty, B. (2015). '*Defeating ISIS on Twitter'. Technology Science.* Available at: https://techscience.org/a/2015092904/ (Accessed 23 April 2018).

Newsweek (2015) 'Report: ISIS Ousted from Syrian City of Hasakah', 30 July. Available at: https://www.newsweek.com/report-isis-ousted-syrian-city-hasakah-330957 (Accessed: 5 July 2019)

Neumann, P.R. and Smith, M.I.R. (2005). Strategic Terrorism: The Framework and its Fallacies. *Journal of Strategic Studies*. 28 (4), p. 571-595.

Reuter, C. (2015) 'Secret Files Reveal the Structure of Islamic State', 2015, *The Spiegel*, 18 April. Available at: http://www.spiegel.de/international/world/islamic-state-files-show-structure-of-islamist-terror-group-a-1029274.html (Accessed: July 2019).

Ristea, A., Andresen, M. and Leitner, M. (2018). 'Using Tweets to Understand Changes in the Spatial Crime Distribution for Hockey Events in Vancouver'. *The Canadian Geographer / Le Géographe Canadien*, 62 (3), p. 338-351.

Ross, B., Meek J. G., and Ferran L, 2015, 'Twitter Escalates Its Own ISIS Battle: 2,000 Accounts Suspended Last Week', *ABC News*, 2 March. Available at: https://abcnews.go.com/International/Twitter-escalates-isis-skirmish-2000-accounts-suspended-week/story?id=29335434 (Accessed: 6 June 2019).

Sagerman, M. (2017). *Turning to Political Violence: The Emergence of Terrorism.* Philadelphia, PA: University of Pennsylvania Press.

Salim, M. (2016) 'Iraqi Forces Expel Islamic State from Fallujah', *Washington Post,* 26 June. Available at: https://www.washingtonpost.com/world/middle_east/iraqi-forces-expel-islamic-state-from-fallujah/2016/06/26/1bb2511e-3bb3-11e6-9e16-4cf01a41decb_story.html (Accessed: 8 July 2019).

Salman, R. and Rasheed, A. (2014) 'Iraq Insurgent Advance Slows, U.S. Sends Carrier to Gulf', *Reuters*, 14 June. Available at: https://uk.reuters.com/article/uk-iraq-security/iraq-insurgent-advance-slows-u-s-sends-carrier-to-gulf-idUKKBN0EO0LF20140614?irpc=932 (Accessed: 12 June 2019).

Saul, H. (2015), 'Isis Leader Abu Bakr al-Baghdadi Resurfaces in Audio Urging Supporters to join Terror Group', *The Independent*, 15 May. Available at: https://www.independent.co.uk/news/world/middle-east/isis-leader-abu-bakr-al-baghdadi-resurfaces-in-audio-urging-supporters-to-join-terror-group-10251955.html (Accessed: 29 June 2019).

Semati, M. and Szpunar, P. (2018). 'ISIS beyond the Spectacle: Communication Media, Networked Publics, Terrorism'. *Critical Studies in Media Communication*, 35 (1), p. 1-7.

Shaheen, K. (2015) 'Palmyra: Historic Syrian City Falls under Control of Isis'. *The Guardian*, 21 May. at, https://www.theguardian.com/world/2015/may/20/syrian-city-of-palmyra-falls-under-control-of-isis (Accessed: 5 July 2019).

Shehabat, A., Mitew, T. and Alzoubi, Y. (2017). 'Encrypted Jihad: Investigating the Role of Telegram App in Lone Wolf Attacks in the West'. *Journal of Strategic Security*, 10 (3), p. 27-53.

Schmid, A. P. (2005). 'Terrorism as Psychological Warfare'. *Democracy and Security,* 1 (2), p. 137-146.

Schmid, A. P. (2011). *Handbook of Terrorism Research*. London: Routledge.

Schwartz, S., Dunkel, C. and Waterman, A. (2009). 'Terrorism: An Identity Theory Perspective'. *Studies in Conflict & Terrorism*, 32 (6), p. 537-559.

Siegel, A and Tucker, J. A. (2017). 'The Islamic State's Information Warfare'. *Journal of Language and Politics*, 17 (2). p. 258-280.

Siegel, A., Tucker J., Nagler J. and Bonneau, R. (2017) *Socially Mediated Sectarianism.* Unpublished Manuscript. Available at: http://alexandra-siegel.com/wp content/uploads/2017/08/SiegelSectarianismJanuary2017.pdf (Accessed: 5 March 2018).

Siegel, A. (2015b) 'Sectarian Twitter Wars: Sunni-Shia conflict and cooperation in the Digital age'. Car*negie Endowment for the International peace*. Available at: http://carnegieendowment.org/2015/12/20/sectarian-Twitter-wars-Sunni-Shia-conflict-and-cooperation-indigital-age/in6n (Accessed: 21 August 2017).

Sly L. (2014) 'Al-Qaeda Disavows any Ties with radical Islamist IS group in Syria, Iraq', *Washington Post*, 3 February. Available at: https://www.washingtonpost.com/world/middle_east/al-Qaeda-disavows-any-ties-with-radical-islamist-isis-group-in-syria-iraq/2014/02/03/2c9afc3a-8cef-11e3-98ab-fe5228217bd1_story.html?noredirect=on&utm_term=.a31ea19ac547 (Accessed: 2 July 2019).

Stoppino, M. (2001). *Potere e Teoria Politica*. Milano: Giuffrè.

Topping A. (2015), 'Gunman Takes Hostages at Paris Kosher Supermarket', *The Guardian,* 9 January. Available at: https://www.theguardian.com/world/2015/jan/09/gunman-hostages-paris-kosher-supermarket-amedy-coulibaly (Accessed: 3 July 2019).

The Guardian (2015) 'Isis Slave Markets Sell Girls for 'as Little as a Pack of Cigarettes', UN Envoy Says', 9 June. Available at: https://www.theguardian.com/world/2015/jun/09/isis-slave-markets-sell-girls-for-as-little-as-a-pack-of-cigarettes-un-envoy-says(Accessed: 20 June 2019).

The Guardian (2016) 'Dozens Killed after Suicide Bombing at Shia Shrine in Damascus', 31 January. Available at: https://www.theguardian.com/world/2016/jan/31/damascus-syrian-double-suicide-bombing-sayeda-zeinab (Accessed: 9 July 2019).

Tsytsarau, M., Palpanas, T., and Castellanos, M. (2014). '*Dynamics of News Events and Social Media Reaction'*. KDD, p. 901–910.

Trentin, M. (2017). 'Cogliere l'Occasione: L'Organizzazione dello Stato Islamico nella Lotta per Il Medio Oriente"'. In: Trentin M. *L'Ultimo Califfato.* Bologna: Il Mulino.

Trope, Y., and Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117 (2), p. 440–463.

Tugwell, M. (1986). 'Terrorism and Propaganda: Problem and Response'. In: Wilkinson P. and Stewart A. M. (eds). *Contemporary Research on Terrorism*. Aberdeen: Aberdeen University Press.

United Nations (2016) 'UN Commission of Inquiry on Syria: ISIS is Committing Genocide against the Yazidis'. Available at: https://www.ohchr.org/EN/HRBodies/HRC/IICISyria/Pages/Documentation.aspx https://ing.org/global-condemnations-of-isis-isil// (Accessed: 24 June 2019).

Washington Post (2014) 'Islamic State fighters are threatening to overrun Iraq's Anbar province', *Washington Post,* 9 October. Available at: https://www.washingtonpost.com/world/middle_east/islamic-state-fighters-are-threatening-to-overrun-iraqs-anbar-province/2014/10/09/34b302f0-84e4-4d73-b220-2d91161363e5_story.html (Accessed: 3 July 2019).

Weaver, M. (2014)'Isis Declares Caliphate in Iraq and Syria', *The Guardian*, 30 June. Available at: https://www.theguardian.com/world/middle-east-live/2014/jun/30/isis-declares-caliphate-in-iraq-and-syria-live-updates (Accessed: 2 July 2019).

Weimann, G. (2005). 'The Theater of Terror: The Psychology of Terrorism and the Mass Media'. In Danieli Y., Brom M. Sills J. (ed.), *The Trauma of Terrorism: Sharing Knowledge and Shared Care.* An International Handbook, Routledge: London-New York, NY, p. 379-390.

Weiss, M. and Hassan, H. (2015). ISIS. Inside the Army of Terror. New York, NY: Regan Arts.

Wintour, P. (2016) 'Isis Loses control of Libyan City of Sirte', *The Guardian*, 5 May. Available at: https://www.theguardian.com/world/2016/dec/05/isis-loses-control-of-libyan-city-of-sirte (Accessed: 8 July 2019).

Withnall, A. (2016) 'Isis Loses 'Prophesied' Town of Dabiq to Syrian Rebels after Short Battle', *The Independent,* 16 October, viewed 8 July 2019. Available at:

https://www.independent.co.uk/news/world/middle-east/isis-dabiq-loses-apocalyptic-prophesy-town-of-dabiq-to-syria-rebels-short-battle-a7363931.html (Accessed: 8 July 2019).

Ẓawāhirī A. (2013) 'Letter to al-Zarqawi', *United States Military Academy*. Available at: https://ctc.usma.edu/app/uploads/2013/10/Zawahiris-Letter-to-Zarqawi-Translation.pdf (Accessed: 1 July 2019).

Zelin, A. (2013) 'Al-Qaeda in Syria: A Closer Look at ISIS (Part I), The Washington Institute', 10 September. Available at: https://www.washingtoninstitute.org/policy-analysis/view/al-qaeda-in-syria-a-closer-look-at-isis-part-i(Accessed: 1 August 2019).

Zeitzoff, T. (2011). *Does Social Media Influence Conflict? Evidence from the 2012 Gaza Conflict*. SSRN Electronic Journal.

Chapter Three

Abdo, G. (2015) 'Salafists and Sectarianism: Twitter and Communal Conflict in the Middle East'. *Brookings Center for Middle East Policy*. Available at: http://www.brookings.edu/~/media/research/files/papers/2015/03/26-sectarianism-salafism-social-mediaabdo/abdo-paper_final_web.pdf (Accessed: 21 August 2017).

Abdo, G. (2013) 'The new Sectarianism: The Arab Spring and the Rebirth of the Shia-Sunni Divide'. *The Saban Center for Middle East Policy at Brookings*. Available at: https://www.brookings.edu/wp-content/uploads/2016/06/Sunni-Shia-abdo.pdf (Accessed: 21 August 2017).

Adam, K. (2016) 'Obama Ridiculed for Saying Conflicts in the Middle East 'Date Back Millennia'. *Washington Post*, 13 January. Available at: https://www.washingtonpost.com/news/worldviews/wp/2016/01/13/obama-ridiculed-for-saying-conflicts-in-the-middle-east-date-back-millennia-some-dont-date-back-a-decade (Accessed: 2 August 2019).

al Fares, I. (2015), 14 June. Available at: https://Twitter.com/ibrahim_alfares/status/610155392820064256 (Accessed: 29 July 2019).

Aljazeera (2015a) 'ISIL Seizes Control of Iraq's Ramadi', 18 May. Available at: https://www.aljazeera.com/news/2015/05/isil-overruns-iraqi-holdout-ramadi-150517142811552.html (Accessed: 24 August 2019).

Aljazeera (2015b) 'ISIL Claims Responsibility for Saudi Mosque Attack', 23 May. Available at: https://www.aljazeera.com/news/2015/05/saudi-Shia-mosque-suicide-bomb-150522101-150522131614062.html (Accessed: 24 August 2019).

al-Qarawee, H. (2015) 'The Discourse of ISIS: Messages, Propaganda and Indoctrination', in Maggioni, M., Magri, P. and Lombardi, M. (2015). *Twitter and Jihad. The Communication Strategy of ISIS*. Institute for International Political Studies (ISPI). Milan: Institute for International Political Studies (ISPI), p. 145-165. Available at: http://www.ispionline.it/sites/default/files/pubblicazioni/Twitter_and_Jihad_en.pdf (Accessed 5 May 2018).

al-Qarawee, H. (2016). *Imagining the Nation: Nationalism, Sectarianism and Socio-Political Conflict in Iraq.* Waterfoot: Rossendale Books.

al-Rawi, A. (2017). 'Online political Activism in Syria: Sentiment analysis of Social Media'. *Sage Research Studies Cases*, p. 1-25.

Anderson, B. (2016). *Imagined Communities*. London: Verso.

Arab Barometer (2017) 'Arab Barometer Wave IV, 2016-2017'. Available at: https://www.arabbarometer.org/waves/arab-barometer-wave-iv/ (Accessed: 9 August 2019).

Arab Social Media Report (2017) 'Social Media and the Internet of Things, Mohammad Bin Rashid School of Government', 5 February. Available at: https://www.mbrsg.ae/getattachment/1383b88a-6eb9-476a-bae4-61903688099b/Arab-Social-Media-Report-2017 (Accessed: 10 August 2019).

Ayub, F. (2013) 'The Gulf and Sectarianism'. *European Council on Foreign Relations.* Available at: https://www.ecfr.eu/page/-/ECFR91_GULF_ANALYSIS_AW.pdf (Accessed: 15 May 2018).

Badawy, A. and Ferrara, E. (2017). 'The Rise of Jihadist Propaganda on Social Networks'. *SSRN Electronic Journal*.

BBC (2015a) 'Saudi Arabia Attack: Islamic State Claims Shia Mosque Bombing', 22 May. Available at: https://www.bbc.com/news/world-middle-east-32843510 (Accessed: 24 August 2019).

BBC (2015b) 'Pakistan Gunmen Kill 45 on Karachi Ismaili Shia Bus', 13 May. Available at: https://www.bbc.com/news/world-asia-32717321 (Accessed: 24 August 2019).

Berger, J.M. and Morgan, J. (2015) 'The ISIS Twitter Census. Defining and Describing the Population of ISIS Supporters on Twitter', *The Brookings Project on U.S. Relations with the Islamic World.* Available at: https://www.brookings.edu/wp-content/uploads/2016/06/isis_Twitter_census_berger_morgan.pdf (Accessed: 5 May 2018).

Black, I. (2007), 'Fear of a Shia Full Moon', *The Guardian*, 26 February. Available at: https://www.theguardian.com/world/2007/jan/26/worlddispatch.ianblack (Accessed: 30 July 2019).

Brewer, J. (1992). 'Sectarianism and Racism, and their Parallels and Differences'. *Ethnic and Racial Studies*, 15(3), p. 352-364.

Ceron, A., Curini, L., and Iacus, S.M. (2016). 'iSA: A Fast, Scalable and Accurate Algorithm for Sentiment Analysis of Social Media Content', *Information Sciences*, 367-368, p. 105-124.

Ceron, A., Curini, L. and Iacus, S.M. (2014). *Social Media e Sentiment Analysis*. Milano: Springer.

Ceron, A., Curini, L. and Iacus, S.M. (2018). 'ISIS at Its Apogee: The Arabic Discourse on Twitter and What we can Learn from that about ISIS Support and Foreign Fighters'. *SAGE Open*, 9 (1).

Charness, G., Rigotti, L., and Rustichini, A. (2007). 'Individual Behavior and Group Membership'. *American Economic Review*, 97, p. 1340-1352.

CIA Factbook (2019) 'Iraq'. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/iz.html (Accessed: 4 August 2019).

CIA Factbook (2019) 'Syria'. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/sy.html (Accessed: 4 August 2019).

CIA Factbook (2019) 'Yemen'. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html (Accessed: 4 August 2019).

CIA Factbook (2019) 'Kuwait'. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/mu.html (Accessed: 4 August 2019).

CIA Factbook (2019) 'Oman'. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/mu.html (Accessed: 4 August 2019).

Dabiq 6 (2015), p. 19. Available at: https://azelin.files.wordpress.com/2015/02/the-islamic-state-e2809cdc481biq-magazine-622.pdf (Accessed: 14 August 2019).

Dabiq 13 (2016), p. 37. Available at: https://Jihadology.net/2016/01/19/new-issue-of-the-islamic-states-magazine-dabiq-13/ (Acessed: 14 August 2019).

DiGrazia, J, McKelvey, K, Bollen, J, Rojas, F (2013). 'More Tweets, More Votes: Social Media as a Quantitative Indicator of Political Behavior'. *PLoS ONE*, 8 (11).

Dodge, T. (2012). *Iraq - From War to a New Authoritarianism*. London: Routledge.

Droz-Vincent, P. (2014). 'State of Barbary" (Take Two): From the Arab Spring to the Return of Violence in Syria'. *Middle East Journal*. 68 (1). p. 33-58.

Eurasia Review (2016) 'Saudi Arabia Carries Out Largest Mass Execution Since 1980', 4 January. Available at: https://www.eurasiareview.com/04012016-saudi-arabia-carries-out-largest-mass-execution-since-1980/ (Accessed: 20 August 2019).

European Parliament (2019) 'Joint Comprehensive Plan of Action'. Available at: https://www.europarl.europa.eu/cmsdata/122460/full-text-of-the-iran-nuclear-deal.pdf (Accessed: 23 August 2019).

Ford, A. and McCafferty, J. (2005). *Origins of Sectarianism in Early Modern Ireland*. Cambridge: Cambridge University Press.

Ford, A. (2005). 'Living Together, Living Apart: Sectarianism in Early Modern Ireland', in Ford, A. and McCafferty, J. *Origins of Sectarianism in Early Modern Ireland*. Cambridge: Cambridge University Press.

Gatten E. (2016) 'Sheikh Nimr al-Nimr Execution: Major Protests Return to Tehran after Killing of Shia Cleric', *The Independent*, 8 January. Available at: https://www.independent.co.uk/news/world/middle-east/sheikh-nimr-al-nimr-execution-major-protests-return-to-tehran-after-killing-of-Shia-cleric-a6803241.html (Accessed: 20 August 2019).

Grimmer, J., and Brandon, M. S. (2013). 'Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts'. *Political Analysis*, 21 (3), p. 267-297.

Haddad, F. (2011). *Sectarianism in Iraq*. Oxford: Oxford University Press.

Haddad, F. (2014). *A Sectarian Awakening: The Reinvention of Sunni Identity After 2003*. Singapore Middle East Papers.

Hopkins, D. and King, G. (2010). 'A Method of Automated Nonparametric Content Analysis for Social Science'. *American Journal of Political Science*, 54 (1), p. 229-247.

Jackson, R. (2007). 'Constructing Enemies: 'Islamic Terrorism' in Political and Academic Discourse'. *Government and Opposition*, 42 (3), p. 394-426.

Mourtada, R. and Salem, F. (2014). 'Citizen Engagement and Public Services in the Arab World: The Potential of Social Media'. *SSRN Electronic Journal*.

Freeden, M. (2013). 'The Morphological Analysis of Ideology'. In: Freeden, M. Tower Sargent L., and Stears, M. (ed.) *The Oxford Handbook of Political Ideologies.* Oxford: Oxford University Press, p. 115-138.

Haddad, F. (2013) 'The Language of anti-Shiism'. *Foreign Policy*. Available at: http://foreignpolicy.com/2013/08/09/the-language-of-anti-shiism/ (Accessed: 21 August 2017).

Hashemi, N. (2016). 'Toward a Political Theory of Sectarianism in the Middle East: The Salience of Authoritarianism over Theology'. *Journal of Islamic and Muslim Studies*, 1(1), p. 65.

Hassan, H. (2016). 'The Sectarianism of the Islamic State. Ideological Roots and Political Context'. *Carnegie Endowment for International Peace*. Available at:

https://carnegieendowment.org/2016/06/13/sectarianism-of-islamic-state-ideological-roots-and-political-context-pub-63746 (Accessed: 9 May 2018).

Hinnebusch, R (2016). 'The Sectarian Revolution in the Middle East'. *R/evolutions: Global Trends & Regional Issues*, Vol 4 (1), p. 120-152.

Hopkins, D. and King, G. (2010). 'A Method of Automated Nonparametric Content Analysis for Social Science'. *American Journal of Political Science*, 54 (1), p. 229-247.

Hubbard, B. (2016) 'Iranian Protesters Ransack Saudi Embassy After Execution of Shiite Cleric', *New York Times*, 2 January. Available at: https://www.nytimes.com/2016/01/03/world/middleeast/saudi-arabia-executes-47-sheikh-nimr-shiite-cleric.html?_r=0 (Accessed: 20 August 2019).

Jamal, A. and al. (2015). 'Anti-Americanism and Anti-Interventionism in Arabic Twitter Discourses'. *Perspectives on Politics*, 13 (1), p. 55-73.

Juergensmeyer, M. (2016) *Terror in the Mind of God. The Global Rise of Religious Violence*. Berkeley/Los Angeles/London: University of California Press.

Kaufman, S. (2001). *Modern Hatreds*. Ithaca, NY: Cornell University Press.

Maher, S. (2016). *Salafi-Jihadism - the History of an Idea*. Oxford: Oxford University Press.

Makdisi, U. (2000). *The Culture of Sectarianism*. Berkeley, CA.: University of California Press.

Matthiesen, T. (2013). *Sectarian Gulf*. Stanford, CA: Stanford University Press.

Meijer, R. (2014). *Global Salafism*. Oxford: Oxford University Press.

Mourtada, R. and Salem, F. (2014). 'Citizen Engagement and Public Services in the Arab World: The Potential of Social Media'. *SSRN Electronic Journal*.

Nasr, S. (2006). *The Shia Revival*. New York, NY: Norton.

Phillips, C. (2013). *Everyday Arab Identity*. London: Routledge.

Phillips, C. (2018). *The Battle for Syria*. New Haven, CT: Yale University Press.

Rabi, U. and Friedman, B. (2017). 'Weaponizing Sectarianism in Iraq and Syria'. *Orbis*, 61 (3), p. 423-438.

Roy, O. (2017). *Jihad and Death*. New York, NY: Hurst & Company.

Siegel, A. (2015) 'Sectarian Twitter Wars: Sunni-Shia Conflict and Cooperation in the Digital Age'. *Carnegie Endowment for the International Peace*. 20 November. Available at: http://carnegieendowment.org/2015/12/20/sectarian-Twitter-wars-Sunni-Shia-conflict-and-cooperation-indigital-age/in6n (Accessed: 21 August 2017).

Silinsky, M. (2016). *Jihad and the West*. Bloomington, Indiana: Indiana University Press.

Smith, A. (2013). *Nations and Nationalism in a Global Era*. Oxford: Wiley.

Stephens-Davidowitz, S. I. (2013). *Essays Using Google Data.* PhD dissertation Harvard, University Cambridge, MA.

Stephens-Davidowitz, S. I. (2014). 'The Cost of Racial Animus on a Black Presidential Candidate: Using Google Search Data to Find What Surveys Miss'. *SSRN Electronic Journal*.

Tajfel, H. and Turner, J.C. (1979). 'An Integrative Theory of Intergroup Conflict', in W.G. Austin and S. Worchel (eds) *The Social Psychology of Intergroup Relations.* Monterey, CA: Brooks/Cole, p. 33-47.

Travis, H. (2011). *On the Existence of National Identity Before 'Imagined Communities': The Example of the Assyrians of Mesopotamia, Anatolia, and Persia.* SSRN Electronic Journal.

The Guardian (2015) 'Yemen Mosque Blasts: Sana'a Medics Report Multiple Casualties', 20 March. .Available at: https://www.theguardian.com/world/2015/mar/20/yemen-suicide-bombings-sanaa-mosques-Shia-huthi-muslims-scores-dead (Accessed: 24 August 2019).

Van Dijk, T. (2011). *Discourse Studies*. Thousand Oaks, CA.: Sage Publications.

Van Dijk, T. (1998). *Ideology and Discourse. A Multidisciplinary Introduction*. Thousand Oaks, CA. Sage Publication.

Veilleux-Lepage, Y. (2014). *Retweeting the Caliphate: The Role of Soft-Sympathizers in the Islamic State's Social Media Strategy*. International Center for Terrorism and Transnational Crime (UTSAM), 4-7 December. Antalya, Turkey.

US State Department (2015) 'International Religious Freedom Report'. Available at: http://www.state.gov/j/drl/rls/irf/religiousfreedom/index.htm?year=2015&dlid=256251 (Accessed 7 August 2019).

Wehrey, F. (2016) 'The Roots and Future of Sectarianism in the Gulf in the Gulf 's Escalating Sectarianism'. *Project on Middle East Political Science (POMEPS).* Available at: https://pomeps.org/wp-content/uploads/2016/01/POMEPS_BriefBooklet28_Sectarianism_Web.pdf (Accessed: 23 April 2018).

Wimmen, H. (2014). 'Divisive rule: Sectarianism and Power Maintenance in the Arab Spring: Bahrain, Iraq, Lebanon and Syria'. *German. Institute for International and Security Affairs*, p. 27.

Zeitzoff, T. (2011). 'Does Social Media Influence Conflict? Evidence from the 2012 Gaza Conflict'. *SSRN Electronic Journal*.

Zubaida, S. (2013). 'The Question of Sectarianism in the Middle East'. In Vertovec S. (ed.) *Routledge International Handbook of Diversity Studies.* London: Routledge.

Conclusions

Abdo, G. (2015) 'Salafists and Sectarianism: Twitter and Communal Conflict'. *The Middle East Brookings Center for Middle East Policy*. Available at: http://www.brookings.edu/~/media/research/files/papers/2015/03/26-sectarianism-salafism-social-mediaabdo/abdo-paper_final_web.pdf (Accessed: 21 August 2017).

Abdo, G. (2013) 'The new Sectarianism: The Arab Spring and the Rebirth of the Shia-Sunni Divide'. *The Saban Center for Middle East Policy at Brookings*. Available at: https://www.brookings.edu/wp-content/uploads/2016/06/Sunni-Shia-abdo.pdf (Accessed 21 August 2017).

Bodine-Baron, E., Helmus, T.C., Magnuson, M. and Winkelman, Z. (2016) 'Examining ISIS Support and Opposition Networks on Twitter'. *RAND Corporation.* Available at: https://www.rand.org/content/dam/rand/pubs/research_reports/RR1300/RR1328/RAND_RR1328.pdf (Accessed: 10 May 2018).

Ceron, A., Curini, L. and Iacus, S.M. (2018). 'ISIS at Its Apogee: The Arabic Discourse on Twitter and What We Can Learn from That About ISIS Support and Foreign Fighters'. *SAGE Open*, 9 (1).

Siegel, A. (2015) ‘Sectarian Twitter Wars: Sunni-Shia Conflict and Cooperation in the Digital age’. *Carnegie Endowment for the International Peace*. Available at: http://carnegieendowment.org/2015/12/20/sectarian-Twitter-wars-Sunni-Shia-conflict-and-cooperation-indigital-age/in6n (Accessed: 21 August 2017).

Siegel, A. and Tucker, J. (2017). ‘The Islamic State’s information warfare’. *Journal of Language and Politics*, 17(2), p. 258-280.

Winter, C. (2015) Documenting the Virtual Caliphate. *Quilliam Foundation*. Available at: http://www.quilliaminternational.com/wp-content/uploads/2015/10/FINAL-documenting-the-virtual-caliphate.pdf. (Accessed: 9 April 2018).

Appendix 1: List of keywords employed in the Query for Chapter One and Chapter Three

Word	Transliteration	Meaning
داعش, دعش	Dāʿish, Daʿish	The term commonly used in referring to the Islamic State in the Arab world. The term is both the acronyms of the group name and it also includes a derogatory meaning.
ارهاب	Īrḥāb	The word terrorist is used to IS, but also similar groups. It contains a negative approach to the Islamic state.
تنظيم الدولة	Tanẓīm al-Dawla	The term is often used in the news to indicate the Islamic State.
دولة اسلامية	Dawla al-Īslamiyya	The official name of the Islamic State, mostly used by its supporters.
خلاف	Khalāf	Caliphat-'is another way to call the Islamic State mostly by its supporters.
خليف	Khalīf	The 'Caliph' is the highest office in the Islamic State.
أبو بكر البغدادي	Abū Bakr al-Baghdādī	Abu Bakr al Baghdadi is the self- proclaimed Caliph of the Islamic State.

Appendix 2: Additional Robustness Test

1. Comparison between Fractional Logit and OLS

Fractional Logit regression

DETERMINANTS	(1) Positive
Lagged Positive	5.185285***
	(0.208004)
Single users per day	-0.000001
	(0.000002)
Daily Interactions	0.000000
	(0.000001)
Censorship	-0.167653**
	(0.070825)
Attacks and crimes against Shīʿa targets (same day)	0.049488
	(0.073254)
Attacks and crimes against Shīʿa targets (following day)	0.143274*
	(0.082941)
Attacks and crimes against Sunni targets (same day)	0.053852
	(0.077094)
Attacks and crimes against Sunni targets (following day)	-0.005197
	(0.068806)
Attacks and crimes against non-Muslim targets (same day)	-0.063592
	(0.094006)
Attacks and crimes against non-Muslim targets (following day)	0.227768***
	(0.087199)
Major military victories (same day)	-0.309437
	(0.330702)
Major military victories (following day)	0.427769***
	(0.136167)
Major military losses (same day)	-0.214783
	(0.244112)
Major military losses (following day)	-0.297626
	(0.299405)
Constant	-2.532197***
	(0.094985)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

OLS regression

DETERMINANTS	(1) Positive
Lagged Positive	0.725794***
	(0.026887)
Single users per day	0.000010

	(0.000028)
Daily Interactions	-0.000000
	(0.000007)
Censorship	-4.303165***
	(1.084409)
Attacks and crimes against Shīʿa targets (same day)	0.385916
	(0.888368)
Attacks and crimes against Shīʿa targets (following day)	1.540531
	(0.979599)
Attacks and crimes against Sunni targets (same day)	0.713247
	(0.844397)
Attacks and crimes against Sunni targets (following day)	-0.116069
	(0.790175)
Attacks and crimes against non-Muslim targets (same day)	-1.518132
	(1.169169)
Attacks and crimes against non-Muslim targets (following day)	2.637018**
	(1.122046)
Major military victories (same day)	-5.533462
	(5.528832)
Major military victories (following day)	6.726776**
	(2.689354)
Major military losses (same day)	-1.698278
	(2.077401)
Major military losses (following day)	-3.096155
	(2.802288)
Constant	7.589091***
	(1.337045)
R-squared	0.638801

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2. Evaluation of the statistical analysis without the determinants daily interactions and the unique users for a day

Regression without 'Daily interactions'

	(1)
DETERMINANTS	Positive
Lagged Positive	0.725894***
	(0.026467)
Single users per day	0.000009
	(0.000014)
Censorship	-4.312927***
	(1.062993)
Attacks and crimes against Shīʿa targets (same day)	0.387872
	(0.887233)
Attacks and crimes against Shīʿa targets (following day)	1.540748
	(0.979157)

Attacks and crimes against Sunni targets (same day)	0.715384
	(0.841777)
Attacks and crimes against Sunni targets (following day)	-0.115409
	(0.789470)
Attacks and crimes against non-Muslim targets (same day)	-1.517109
	(1.168129)
Attacks and crimes against non-Muslim targets (following day)	2.637022**
	(1.121895)
Major military victories (same day)	-5.543647
	(5.532484)
Major military victories (following day)	6.714879**
	(2.662377)
Major military losses (same day)	-1.696645
	(2.077864)
Major military losses (following day)	-3.094453
	(2.801053)
Constant	7.600732***
	(1.314977)
R-squared	0.638800

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Regression without 'Single Users per day'

	(1)
DETERMINANTS	Positive
Lagged Positive	0.727484***
	(0.026090)
Daily Interactions	0.000000
	(0.000000)
Censorship	-0.044581***
	(0.010137)
Attacks and crimes against Shīʿa targets (same day)	0.004097
	(0.008823)
Attacks and crimes against Shīʿa targets (following day)	0.015494
	(0.009802)
Attacks and crimes against Sunni targets (same day)	0.007233
	(0.008432)
Attacks and crimes against Sunni targets (following day)	-0.001172
	(0.007885)
Attacks and crimes against non-Muslim targets (same day)	-0.015126
	(0.011681)
Attacks and crimes against non-Muslim targets (following day)	0.026348**
	(0.011259)
Major military victories (same day)	-0.055793
	(0.055671)
Major military victories (following day)	0.066901**
	(0.026949)
Major military losses (same day)	-0.016712

	(0.020971)
Major military losses (following day)	-0.030931
	(0.027988)
Constant	0.078177***
	(0.012352)
R-squared	0.638738

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Regression without ‘Single Users per day’ and ‘Daily Interactions’

DETERMINANTS	(1) Positive
Lagged Positive	0.728640***
	(0.026143)
Censorship	-4.552769***
	(0.983824)
Attacks and crimes against Shīʿa targets (same day)	0.415929
	(0.881114)
Attacks and crimes against Shīʿa targets (following day)	1.561159
	(0.982343)
Attacks and crimes against Sunni targets (same day)	0.701827
	(0.841069)
Attacks and crimes against Sunni targets (following day)	-0.131464
	(0.788966)
Attacks and crimes against non-Muslim targets (same day)	-1.521709
	(1.169941)
Attacks and crimes against non-Muslim targets (following day)	2.630775**
	(1.125655)
Major military victories (same day)	-5.473051
	(5.536704)
Major military victories (following day)	6.844131**
	(2.659778)
Major military losses (same day)	-1.653331
	(2.098569)
Major military losses (following day)	-3.119064
	(2.802954)
Constant	8.008447***
	(1.161189)
R-squared	0.638644

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3. Evaluation of the statistical analysis with ‘Daily Interactions’ and ‘Total Users per day’ in a logarithmic form

Regression with ‘Daily Interactions’ as logarithmic determinant

DETERMINANTS	(1) Positive
Lagged Positive	0.728246***
	(0.025764)
Daily Interactions (logaritmic)	0.034227
	(0.174156)
Censorship	-4.514129***
	(1.037041)
Attacks and crimes against Shīʿa targets (same day)	0.412552
	(0.883081)
Attacks and crimes against Shīʿa targets (following day)	1.556705
	(0.982446)
Attacks and crimes against Sunni targets (same day)	0.705897
	(0.842818)
Attacks and crimes against Sunni targets (following day)	-0.129748
	(0.789081)
Attacks and crimes against non-Muslim targets (same day)	-1.520018
	(1.170131)
Attacks and crimes against non-Muslim targets (following day)	2.634137**
	(1.127047)
Major military victories (same day)	-5.496883
	(5.549309)
Major military victories (following day)	6.813390**
	(2.670868)
Major military losses (same day)	-1.666890
	(2.100600)
Major military losses (following day)	-3.114703
	(2.800463)
Constant	7.617896***
	(2.429785)
R-squared	0.638654

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Regression with ‘Single Users per day’ as logarithmic determinant

DETERMINANTS	(1) Positive
Lagged Positive	0.727758***
	(0.025909)
Single Users per day (logaritmic)	0.088998
	(0.249526)
Censorship	-4.466772***
	(1.047207)

Attacks and crimes against Shīʿa targets (same day)	0.407944
	(0.884264)
Attacks and crimes against Shīʿa targets (following day)	1.551489
	(0.981718)
Attacks and crimes against Sunni targets (same day)	0.707474
	(0.842496)
Attacks and crimes against Sunni targets (following day)	-0.128544
	(0.789536)
Attacks and crimes against non-Muslim targets (same day)	-1.519481
	(1.170110)
Attacks and crimes against non-Muslim targets (following day)	2.639022**
	(1.126918)
Major military victories (same day)	-5.501939
	(5.542687)
Major military victories (following day)	6.802535**
	(2.665026)
Major military losses (same day)	-1.674582
	(2.098522)
Major military losses (following day)	-3.115590
	(2.797823)
Constant	7.071112**
	(2.962764)
R-squared	0.638674

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Regression with ‘Daily Interactions’ and ‘Single Users per day’ as logarithmic determinants

	(1)
DETERMINANTS	Positive
Lagged Positive	0.727219***
	(0.026409)
Single Users per day (logaritmic)	0.374888
	(0.952914)
Daily Interactions (logaritmic)	-0.199107
	(0.651570)
Censorship	-4.415304***
	(1.039566)
Attacks and crimes against Shīʿa targets (same day)	0.401942
	(0.886274)
Attacks and crimes against Shīʿa targets (following day)	1.546340
	(0.981847)
Attacks and crimes against Sunni targets (same day)	0.701934
	(0.842603)
Attacks and crimes against Sunni targets (following day)	-0.129145
	(0.791500)
Attacks and crimes against non-Muslim targets (same day)	-1.522161
	(1.170176)
Attacks and crimes against non-Muslim targets (following day)	2.645958**

	(1.125689)
Major military victories (same day)	-5.456099
	(5.525087)
Major military victories (following day)	6.847744**
	(2.666664)
Major military losses (same day)	-1.663969
	(2.090304)
Major military losses (following day)	-3.129804
	(2.805415)
Constant	6.332054*
	(3.611967)
R-squared	0.638711

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4. Evaluation of the statistical model with the inclusion of Neutral (Positive/Positive-Neutral-Negative)

	(1)
DETERMINANTS	Positive
Lagged Positive	0.684570***
	(0.027607)
Single users per day	0.000021
	(0.000027)
Daily Interactions	-0.000001
	(0.000006)
Censorship	-3.511427***
	(0.983023)
Attacks and crimes against Shīʿa targets (same day)	0.422498
	(0.877384)
Attacks and crimes against Shīʿa targets (following day)	1.470089
	(0.958775)
Attacks and crimes against Sunni targets (same day)	0.466891
	(0.808854)
Attacks and crimes against Sunni targets (following day)	-0.227424
	(0.774859)
Attacks and crimes against non-Muslim targets (same day)	-1.173811
	(1.129869)
Attacks and crimes against non-Muslim targets (following day)	2.528395**
	(1.045234)
Major military victories (same day)	-5.219721
	(4.519742)
Major military victories (following day)	6.720112***
	(2.602046)
Major military losses (same day)	-2.849728*
	(1.634235)
Major military losses (following day)	-3.487292
	(2.714394)
Constant	7.026243***
	(1.214018)

R-squared	0.571918

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Placebo Test with Censorship in different timing

DETERMINANTS	(1) Positive
Lagged Positive	0.721498***
	(0.027284)
Single users per day	0.000002
	(0.000028)
Daily Interactions	-0.000004
	(0.000007)
Censorship	-3.420979**
	(1.603657)
Dummy Censorship (1 month later)	0.303734
	(2.206927)
Dummy Censorship (2 months later)	0.024719
	(2.127103)
Dummy Censorship (4 months later)	-2.242992
	(1.427966)
Attacks and crimes against Shīʿa targets (same day)	0.479295
	(0.907208)
Attacks and crimes against Shīʿa targets (following day)	1.631195*
	(0.974605)
Attacks and crimes against Sunni targets (same day)	0.723456
	(0.844202)
Attacks and crimes against Sunni targets (following day)	-0.099343
	(0.793651)
Attacks and crimes against non-Muslim targets (same day)	-1.523788
	(1.166656)
Attacks and crimes against non-Muslim targets (following day)	2.608556**
	(1.124104)
Major military victories (same day)	-5.855539
	(5.534530)
Major military victories (following day)	6.509794**
	(2.767500)
Major military losses (same day)	-1.606498
	(2.072440)
Major military losses (following day)	-3.153582
	(2.847789)
Constant	8.835822***
	(1.484192)
R-squared	0.641205

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6. *Impact of Censorship of the determinant 'total users per day*

VARIABLES	(1) lTotalUsers
Lagged Positive	-1.133785***
	(0.037808)
Single users per day	0.097292
	(0.123953)
Daily Interactions	0.094383
	(0.117843)
Censorship	-0.071119
	(0.076622)
Attacks and crimes against Shīʿa targets (same day)	-0.043864
	(0.078897)
Attacks and crimes against Shīʿa targets (following day)	-0.007738
	(0.120337)
Attacks and crimes against Sunni targets (same day)	-0.103526
	(0.115658)
Attacks and crimes against Sunni targets (following day)	0.398559
	(0.320003)
Attacks and crimes against non-Muslim targets (same day)	0.477757
	(0.378390)
Attacks and crimes against non-Muslim targets (following day)	0.197685
	(0.165991)
Major military victories (same day)	-0.051901
	(0.175868)
Major military victories (following day)	10.832643***
	(0.028740)
R-squared	0.214106

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1