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## Encrypted Jihad: Investigating the Role of Telegram App in Lone Wolf Attacks in the West

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## **Encrypted Jihad: Investigating the Role of Telegram App in Lone Wolf Attacks in the West**

### **Abstract**

The study aims to capture links between the use of encrypted communication channel -Telegram and lone wolf attacks occurred in Europe between 2015-2016. To understand threads of ISIS communication on Telegram we used digital ethnography approach which consists of the self-observation of information flows on four of ISIS's most celebrated telegram Channels. We draw on public sphere theory and coined the term terror socio-sphere 3.0 as the theoretical background of this study. The collected data is presented as screenshots to capture a visual evidence of ISIS communication threads. This study shows that ISIS Telegram channels play critical role in personal communication between potential recruits and dissemination of propaganda that encourage 'lone wolves' to carry attacks in the world at large. This study was limited to the number of the channels that have been widely celebrated.

## Introduction

Between February 2015 and August 2016, lone wolf terrorists subjected Europe to a series of attacks by lone wolf terrorists pledging their allegiance to Islamic State of Iraq and Sham (ISIS). Nice, Brussels, and Cologne alone suffered over 400 casualties caused by lone wolf attacks. According to the Global Terrorism Index, the phenomenon of lone wolf attacks in Europe and North America intensified after the rise of the ISIS.<sup>1</sup> Calls for individuals to carry out lone wolf attacks were spread online through a sophisticated information operations strategy adopted by ISIS with the self-professed goal of striking back at coalition forces. Communication technologies such as social media platforms (Facebook), anonymous sharing portals (Justpaste.it), cloud computing (Google drive), and encrypted communication applications (Telegram) were the backbone of ISIS's modus-operandi. Importantly, the use of mobile end-to-end encrypted applications such as WhatsApp, Signal, and Telegram has contributed to the emergence of a new paradigm of terror communication—an online terror-sphere. As Seamus Hughes and Alexander Meleagrou-Hitchens argue, “the emergence of applications such as Telegram, SureSpot, Kik, and—since its recent offering of end-to-end encryption—WhatsApp has been a particular game changer for the Islamic State and its efforts in the West.”<sup>2</sup> The wide adoption of newly introduced ‘end-end’ encryption communication technologies have allowed ISIS, as well as other groups, to establish and successfully leverage a secure medium of communication.

The social media service Telegram, largely due to its native support of encrypted one-to-one and one-to-many communication, has been widely adopted by ISIS and its affiliates globally. This article aims to examine the role played by Telegram in ISIS' strategy of encouraging lone wolf attacks targeting Western countries. Launched in 2013 by the Durov brothers, who were also the developers behind the Russian social network VKontakte, Telegram has arguably popularized the use of end-to-end encryption in social media messengers. In 2015, the Telegram platform introduced public channels, thus enabling one-to-many communication in parallel with its core one-to-one functionality. Telegram channels enabled ISIS members and affiliates to establish their own media platforms with

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<sup>1</sup> Global Terrorism Index. “*Measuring and Understanding the Impact of Terrorism Institution for Economics and Peace*,” available at: <http://visionofhumanity.org/app/uploads/2017/04/Global-Terrorism-Index-Report-2014.pdf>.

<sup>2</sup> Alexander Meleagrou-Hitchens and Seamus Hughes, “The Threat to the United States from the Islamic State’s Virtual Entrepreneurs,” *CTC Sentinel* 10, no. 3 (March 2017), available at: <https://ctc.usma.edu/posts/the-threat-to-the-united-states-from-the-islamic-states-virtual-entrepreneurs>.

numerous followers, enabling users to receive one-to-many messages while also communicating individually across encrypted connections. ISIS members and affiliates created hundreds of channels, using the Telegram service to generate content, personalize encrypted one-to-one communications, and control the logistics of dissemination of sensitive information and propaganda.

Information broadcasted over Telegram channels can be instantly shared across multiple digital platforms and vice versa. The significance of ISIS' use of the platform lies in the ability to establish multi-purpose channels strengthening its propaganda machine. Crucially, this allows ISIS affiliates, only latently connected to the central hubs of the organization, to receive and share a coherent centralized propaganda message *as well as* establish encrypted communication channels with each other. Such channels therefore act as systems of coordination, message reinforcement, and activity planning.

The objective of this article is to start conceptualizing the relationships between the emergence of Telegram and its role in the surge of lone wolf attacks in the West. The article focuses on the dynamics of ISIS' information operation in order to recognize different themes characterizing its use of the platform as a catalyst of terrorist mobilization. Following a brief discussion of the methodology of the argument, the article discusses the notion of a terror socio-sphere, and concludes with preliminary findings.

## Methodology

The study is based on an approach informed by digital ethnography, involving the first author of this article joining as an observer in public Telegram channels operated by ISIS members/affiliates. Identifying publicly available ISIS channels on Telegram was not a hard task, as ISIS maintains a designated public channel called *Nashir* (disseminator, in Arabic). ISIS affiliates on Twitter share the broadcasting role of the channel and re-broadcasting links to content originating from *Nashir*. In line with its broadcasting function, this channel operates in a number of languages such as Arabic, English, Turkish and Spanish, and recommends trusted ISIS channels for its members to follow. One of the important considerations when encountering such channels is their authenticity as legitimate ISIS-operated content distribution nodes. The author adopted a practical rule-of-thumb approach in establishing the authenticity of channels, by focusing on the themes prevalent in the content and messages shared across them. For example, it is highly probable that any channel spreading hate towards the West, sharing ISIS propaganda, and encouraging attacks against Western targets is a trusted ISIS channel. An

important metric that can be used as a filter of authenticity is the peer-to-peer filtering performed by ISIS channels themselves. Such channels will vet and share information from other trusted channels operated by ISIS affiliates, thereby leveraging a sort of distributed crowd-filtering network to achieve a snowballing effect in terms of information dissemination.

The study mirrored this process with a snowballing approach involving the first author joining 70 ISIS-affiliated Telegram channels. To collect the data from these channels, the first author established his own channel on Telegram named “Data collection”. The collected data includes all shared content such as images and graphics, as well as videos encouraging individuals to attack Western interests (attack potential infrastructure networks such as airports, water supplies, and electricity grids) and the killing of military or police personnel. The information shared across these channels also includes instructional content aimed at potential lone wolf attackers, digital logistics advice aimed at channel members (opening a Twitter account using a hacked phone number), instructions for making small bombs and explosives, and, most importantly, instructions for lone wolves on leaving media traces such as videos or notes pledging alliance to ISIS.

For the purposes of this article, we have focused on three types of content: (1) information that is aimed at lone wolves, encourages attacks, and includes instructions and methods of attacks, (2) information aiming to inspire other potential lone wolves to carry attacks, and (3) information celebrating acts of terror and claiming responsibility. Data was gathered from the Telegram channels in the form of screenshots. Screenshots “as media objects...can be dynamically traced across the networks of their dissemination and require a re-evaluation of the axioms of cultural production that considers texts independently of experience.”<sup>3</sup> Furthermore, screenshots play an important role in making sense of data visualization, as well as mapping and graphing the research method. For the purpose of this study, the analysis sought to answer two important ontological and epistemological questions: (1) what do these data represent and (2) what claims can be made from them?

## Terror Socio-Sphere

Since its emergence, ISIS has rapidly adapted cutting-edge communication technologies to attain its information operation objectives. In many ways, this process resembled the way popular social movements

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<sup>3</sup> Christopher Moore, “Screenshots as Virtual Photography: Cybernetics, Remediation, and Affect,” in *Advancing digital humanities: research, methods, theories*, eds. Katherine Bode and Paul Longley Arthur (Hampshire: Palgrave Macmillan, 2014), available at: <http://ro.uow.edu.au/lhapapers/1954/>.

across the Arab world leveraged social media platforms as a catalyst for political mobilization during the ‘Arab Spring’.

Arguably, the important role of social media networks during the events of the Arab Spring uprisings precipitated the shift to a new communication paradigm in the Arab world, a phenomenon that has been termed the emergence of “new Arab public sphere.”<sup>4</sup> According to Marc Lynch, the new Arab public sphere emerged because of “a generation that has gained the platforms and the mechanisms to engage in sustained arguments, debate [sic] and discussions about their common concerns.”<sup>5</sup> By contrast, as either military personnel or coercive secular or theocratic regimes rule most Arab countries, freedom of speech, personal liberty, and political debate are highly restricted. Most Arab regimes are non-democratic, and any call for grassroots political mobilization condemning political power is persecuted. During the Arab Spring events, grassroots movements across the region were using social media to broadcast content calling for freedom, democracy, and social justice. In effect, the emergence of social media facilitated the participation of Arab publics in political debate and acted as a powerful catalyst for political mobilization.

The debate over the role of digital platforms in the emergence of this new public sphere is connected to the work of Jürgen Habermas, who developed the concept of the public sphere to account for “a realm of our social life in which something approaching public opinion can be formed.”<sup>6</sup> According to Habermas, the most important feature of the public sphere is its engagement of the public in a ‘rational-critical debate’, involving such fundamental liberal rights as freedom of opinion and speech, freedom of the press, and freedom of assembly and association. Interpreting Habermas’ argument, David Krieger and Andréa Belliger coined the term *socio-sphere*, suggesting an abstract space that is “neither private nor public, but it is based upon the new form of communication made possibly by digital media, namely ‘many to many’ communication.”<sup>7</sup> They argued that the new socio-sphere enables and encourages participation in different ways regardless of traditional boundaries.

The notion of a socio-sphere provides a useful framework within the context of this study, as it allows us to approach the role of Telegram in ISIS propaganda operations from a systemic network-focused perspective.

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<sup>4</sup> Marc Lynch, *Voices of the new Arab public. Iraq, Al-Jazeera, and Middle East Politics Today* (New York: Columbia University Press, 2006).

<sup>5</sup> Marc Lynch, “Voices of Arab.”

<sup>6</sup> Habermas Jürgen, “The Structural Transformation of the Public Sphere,” *Cambridge: MIT Press* 85 (1989): 85-92.

<sup>7</sup> David Krieger, and Andréa Belliger, *Interpreting Networks: Hermeneutics, Actor-network Theory and New Media* (Transcript Verlag, 2014).

In supporting one-to-many as well as one-to-one communications, Telegram has in effect transformed ISIS sympathizers and affiliates into distributed information aggregators and disseminators, able to act stigmatically without direct coordination and control. As Krieger and Belliger point out, socio-spheres allow participants to be network actors despite geographic boundaries. Arguably, the rise of encrypted social media apps has produced a new triadic paradigm-shift in communication, enabling the simultaneous performing of private-to-private, private-to-public, and public-to-public communication. To situate Telegram in the emergence of a digital terror socio-sphere, it is important to understand how terror organizations have harnessed the platform and how Telegram has served their agendas. In addition, it is important to look at the topology and architecture of the platform, as well as the ways in which it has changed the dynamics of communication. Within this context, we think that the encrypted communication affordances provided by Telegram have contributed to the emergence of a public terror socio-sphere. In particular, ISIS' information operation on Telegram is centered on one-to-many, many-to-many, and one-to-one communication with far reaching ramifications.

Zizi Papacharissi has argued that individuals can engage socially in a private media sphere situated within their personal and private spaces.<sup>8</sup> This private social interaction sphere is rhetorically established by utilizing existing and imagined geographical places.<sup>9</sup> Encrypted communication apps such as Telegram, WhatsApp, and Signal act as such geographic spaces, in effect enabling a participatory terror socio-sphere of information flows. This is in distinct contrast to other public communication channels such as Twitter and Facebook. The private/public socio-spheres of terror are enacted as spaces for potential terrorists to share common grievances in, and have thus become unifying rhetoric loci for ISIS-related propaganda aimed at affiliates and sympathizers. For example, messages showing the brutality of coalition forces destroying homes and killing innocent people are constantly diffused across Telegram channels. This type of content serves as force multiplier, in that it acts to unify affiliates around a cause perceived as just, as well as inspire potential lone wolves to carry on attacks. Importantly, ISIS can map the significant increase of the number of attacks against Western interests in 2015-2016 to the rapid adoption of Telegram in 2015. It has been established that the perpetrators of a number of lone wolf attacks in this time used Telegram as their main

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<sup>8</sup> Zizi Papacharissi, *A Private Sphere: Democracy in a Digital Age* (Cambridge: Polity, 2010).

<sup>9</sup> Papacharissi, "A Private Sphere."

communication channel.<sup>10</sup> Consequently, Telegram can represent perceived a threat to the security of the European continent and the United States of America (USA), insofar as it enables secure end-to-end communications across the new terror socio-sphere. Within this context, it is important to consider why ISIS shifted its information operation strategy away from popular social media networks and migrated to Telegram.

## Findings

### *ISIS's Digital Migration to Telegram*

Telegram promotes itself as an ultra-secure instant messaging system because all data is encrypted from start to finish, a process known in the industry as end-to-end encryption. Telegram has more than 100 million active subscribers. Most of those subscribers are from Middle East, Central and Southeast Asia, and Latin America.<sup>11</sup> Telegram represents the main hub for ISIS's communication.<sup>12</sup>

While in this article the authors have made an attempt to examine the role of Telegram in lone wolf attacks, they set to examine the extent to which ISIS members and their affiliates are using Telegram to inspire potential lone wolves to carry attacks. The collected data obtained from ISIS's Telegram channels suggested four main reasons behind ISIS's digital migration to Telegram: (1) seeking encryption, (2) seeking a channel-supporting platform, (3) enhancing ISIS's digital infrastructure against cyber-attacks, and (4) decreasing exposure to hacktivism and other information warfare counter-measures.

### *Seeking Encryption*

Prior to the emergence of ISIS, terror organizations such as al-Qaeda were keen to encrypt and secure their communications. In the past, Al-Qaeda coordinated terrorist activities in Europe using draft messages on shared email accounts or by sending encrypted files.<sup>13</sup>

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<sup>10</sup> Global Terrorism Index. "Measuring and Understanding."

<sup>11</sup> Joseph Menn and Yeganeh Torbati, "Iran Hackers Reveal Identities of 15m Telegram Messaging Accounts," *Middle East Eye*, August 16, 2016, available at: <http://www.middleeasteye.net/news/iran-hackers-accessed-15-million-telegram-messaging-accounts-678104419>.

<sup>12</sup> Mary-Ann Russon and Jason Murdock, "Welcome to the Bizarre and Frightening World of Islamic State channels on Telegram," *IB Times*, June 2, 2016, available at: <http://www.ibtimes.co.uk/welcome-bizarre-frightening-world-islamic-state-channels-telegram-1561186>.

<sup>13</sup> Petter Nesser, Anne Stenersen, and Emilie Oftedal, "Jihadi Terrorism in Europe: The IS-Effect," *Perspectives on Terrorism* 10, no. 6 (2016), 3-24, available at: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/553>.



Personal anonymity and secure chat are important capabilities driving ISIS to adopt the platform. Using Telegram has made obfuscating and protecting attacker identities from Western intelligence agencies much easier, since only few electronic clues are left in intercepted data sets.<sup>14</sup> While Telegram has been helpful to establish a socio-sphere and hide the identities of potential lone wolves, Nico Prucha has argued that anonymity and encryption have not benefited the strategic level of ISIS information operations.<sup>15</sup> He argues that the “secrecy and encryption of Telegram is harmful for IS’ swarming operations as the networks which are sustained on Telegram lack the outreach as well as the opportunities for projecting influence, which Twitter in particular allowed”. In addition, unlike encrypted applications such as Signal, which has been endorsed by Edward Snowden, some encryption specialists question the quality of Telegram encryption, suggesting that the platform may have a backdoor. That said, Pavel Durov, the developer of Telegram, has consistently argued that the core of strength of Telegram is user anonymity, and has challenged encryption specialists to test Telegram’s protocols for exploits with a \$100,000 USD reward.<sup>16</sup>

Interestingly, ISIS did not adopt WhatsApp another popular encrypted communication application, because Facebook purchased it in 2013. Despite WhatsApp’s recent adoption of the same end-to-end encryption protocol as Signal, ISIS supporters are convinced it is not safe and is the easiest application to be hacked. Kavanaugh and Shiloach noticed that ISIS supporters who have long used other mainstream social media platforms, such as Twitter, have been increasingly joining Telegram. As stated above, this is because Telegram allows its users to send encrypted messages, providing an advantage to jihadists while making it more difficult for law enforcement to identify ISIS affiliates online.<sup>17</sup>

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<sup>14</sup> Sam Schechner and Benoit Faucon, “New Tricks Make ISIS, Once Easily Tracked, a Sophisticated Opponent,” *The Wall Street Journal* September 11, 2016, available at: <http://www.wsj.com/articles/new-tricks-make-isis-once-easily-tracked-a-sophisticated-opponent-1473613106?mod=e2tw>.

<sup>15</sup> Nico Prucha, “IS and the Jihadist Information Highway—Projecting Influence and Religious Identity via Telegram,” *Perspectives on Terrorism* 10, no. 6 (2016), 48-58, available at: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/556>.

<sup>16</sup> Shane Dixon Kavanaugh and Gilad Shiloach, “ISIS Spreads Violence and Terror with ‘Foolproof’ App, Vocativ,” November 17, 2015, Available at: <http://www.vocativ.com/251826/isis-followers-flock-to-a-new-foolproof-messaging-app/>.

<sup>17</sup> “ISIS Using Telegram App to Plot Attacks on US Bases in Middle East – Israeli hackers,” RT.com, August 4, 2016, available at: <https://www.rt.com/news/354589-isis-telegram-israeli-hack/>.

### *Seeking a Channel-Supporting Platform*

As mentioned above, one of the most important Telegram features, unveiled in September 2015, is the creation of public and private channels on the platform. This new feature enables users to establish their own channels to share information with an unlimited number of anonymous subscribers. Islamic State of Iraq and Sham strategically harnesses this feature by swarming Telegram with a large number of private and public channels in multiple languages, therefore generating ad hoc networks ensuring its information operation objectives. For instance, in the aftermath of the Paris attacks, for which ISIS claimed responsibility, Telegram suspended 78 pro-ISIS telegram channels. Despite that, the Nashir channel mentioned above was re-launched in English, Russian, French, Turkish, and Somali to maintain network presence and target potential international subscribers. In November 2015, ISIS swarmed Telegram with hundreds of channels; each specialized in a specific type of content. The most popular ISIS channels on Telegram are Dabiq, Nashir, Amaq, and Gazwa. According to Berger and Perez, these channels “have been used as the initial point of distribution for propaganda releases. Once released on Telegram, links to the propaganda content are subsequently distributed on Twitter.”<sup>18</sup>

### *Enhancing ISIS's digital infrastructure against cyber-attacks*

In an effort to disrupt ISIS communications and other core functions, the US military's Cyber Command announced the launch of its first attack against the organization's digital infrastructure in August 2015, during President Barack Obama's visit in Hanover.<sup>19</sup> Google, Twitter, and Facebook responded to calls from US Cyber Command to help shut down accounts affiliated with ISIS, with Twitter suspending over 300,000 accounts related to the organization. The degrading of ISIS' Twitter affiliates network led many Western analysts to believe that ISIS in general was in decline.<sup>20</sup> These coordinated network-degrading attacks pressured ISIS to shift some of its digital activities away from popular social media such as Twitter to other platforms such as Telegram, even though initially, as Berger and Perez argue, “these other platforms are

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<sup>18</sup> J. M. Berger and Heather Perez, *The Islamic State's Diminishing Returns on Twitter: How Suspensions are limiting the Social Networks of English-speaking ISIS Supporters*, (St. Louis, MO: George Washington University, 2016), 1-21, available at:

[https://cchs.gwu.edu/sites/cchs.gwu.edu/files/downloads/Berger\\_Occasional%20Paper.pdf](https://cchs.gwu.edu/sites/cchs.gwu.edu/files/downloads/Berger_Occasional%20Paper.pdf).

<sup>19</sup> Wang Wei, “Pro-ISIS Hackers Release 'Kill List' of 43 United States Officials,” *The Hackers News*, April 26, 2016, available at:

<http://thehackernews.com/2016/04/isis-hacker.html>.

<sup>20</sup> Prucha, “IS and the Jihadist,” 48-58.

used primarily as backups for Twitter.”<sup>21</sup> While efforts have been made to severely degrade ISIS presence on Twitter and Facebook, governments have been finding it increasingly difficult to track and monitor communications on Telegram.<sup>22</sup> Telegram’s functionality enables users to have one-to-one and group conversations that are end-to-end encrypted, and ISIS has taken full advantage of the platform’s privacy benefits to establish a community of channels, bots, and secret chat rooms. As Kavanaugh and Shiloach point out, “even anonymous, which claims to have hacked or crippled thousands of ISIS Twitter accounts and online forums, has been ineffective on Telegram.”<sup>23</sup> An ISIS member called Abu-Osama Sinan Algazi has claimed that the network degrading operation has been largely unsuccessful, as “in this electronic war between the supporters and the Crusaders, lots of our brothers prefer Telegram over anything else.”<sup>24</sup>

Unlike Facebook or Twitter, which are capable of regularly suspending accounts in a centralized manner, Telegram’s more distributed nature, coupled with end-to-end encryption, demands a collective user-led effort to report ISIS-affiliate channels to the Telegram admins.

#### *Decreasing exposure to hacktivism and other information warfare counter-measures*

In the context of US Cyber Command operations against the organization in 2015, hacktivist groups such as Anonymous and CtrlSec declared operation #IceISIS (Figure 1), aimed at hacking and disrupting ISIS’ online presence across a variety of blog hosting platforms, Twitter accounts, and mobile phone apps. Under the motto ‘ISIS we are going to kick you out of the Internet’, anonymous attacked affiliated ISIS websites such as “ummetislam.net” and took down the ‘glade of tiding’ mobile app, as well as thousands of ISIS-affiliated Twitter accounts. These swarm-like attacks were successful, to the extent that they forced ISIS to migrate its network to Telegram, perceived as a safer platform of operations.

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<sup>21</sup> Berger and Perez., “The Islamic State’s Diminishing Returns,” 1-21.

<sup>22</sup> Russon and Murdock, “Welcome to the Bizarre.”

<sup>23</sup> Kavanaugh and Shiloach, “ISIS Spreads Violence.”

<sup>24</sup> Prucha, “IS and the Jihadist,” 48-58.

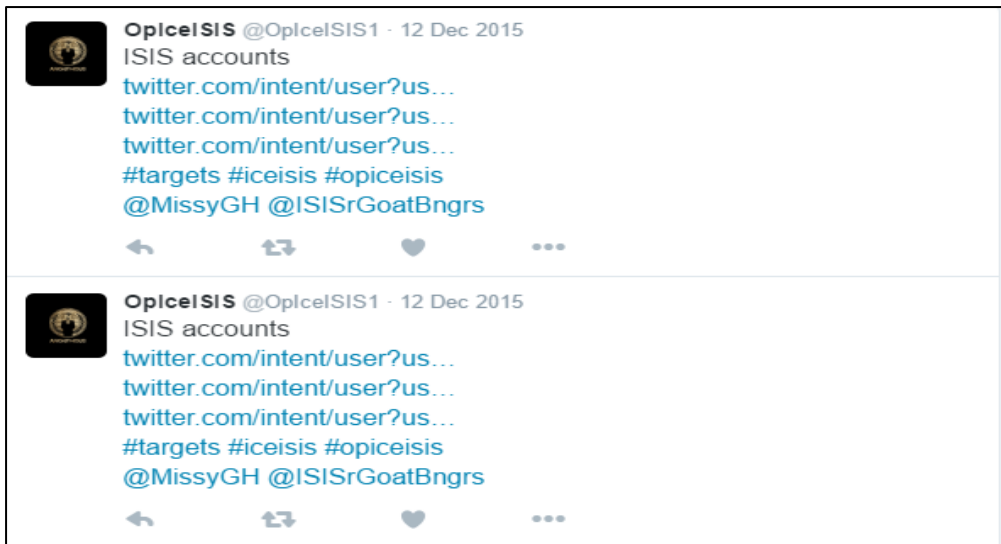


Figure 1: OpIceISIS screenshot<sup>25</sup>.

### *ISIS on Telegram*

The following three objectives outline clearly the strategic rationale behind ISIS' use of Telegram by its Nashir channel in the following three objectives: (1) declaring electronic jihad, (2) waging media maneuver warfare, and (3) providing an online platform for the recruitment of lone wolves.

#### *Declaring electronic jihad*

The concept of “Electronic Jihad” was widely used by Al-Qaeda leaders such as Al-Zawahiri and Al-Awlaki to inspire and recruit potential members to Al-Qaeda. Al-Awlaki, for instance, used the concept “WWW Jihad for mobilizing prospective adherents and inciting terrorist actions.”<sup>26</sup> In a similar vein, ISIS used the concept of *e-jihad* to encourage followers and affiliates to establish Telegram channels and Twitter accounts. Throughout our observation of ISIS' Telegram channels we noticed a widespread conviction among the organization's affiliates that opening channels on Telegram is considered partaking in Jihad.

The concept of electronic jihad has been leveraged by ISIS to enroll numerous affiliates into a distributed network used to disseminate propaganda videos, organize financial support, issue warfare activity updates, reach out globally to potential recruits, and paint a propagandized utopian picture of daily life in the territories controlled by ISIS. Activities as simple as the dissemination of the ISIS weekly

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<sup>25</sup> Screenshot obtained from OpIceISIS Twitter account

<sup>26</sup> Martin Rudner, “Electronic Jihad: The Internet as Al Qaeda's Catalyst for Global Terror,” *Studies in Conflict and Terrorism* 40, no. 1 (2017): 10-23, available at: <http://dx.doi.org/10.1080/1057610X.2016.1157403>.

multilingual magazines Dabiq and Rumyah, or the sharing of instructional materials focused on setting up encrypted communications and evading surveillance, or sharing updated safe channel lists, all count as electronic jihad.

### *Waging media manoeuver warfare*

Periodically ISIS' Telegram channels declare media manoeuver warfare, or in Arabic, *Gazwa e'lamyah*. In practice, media manoeuver warfare involves the mass re-opening of suspended social media accounts across multiple platforms, in conjunction with the creation of new accounts. This is viewed as maneuver warfare insofar as it is understood that the re-established accounts will exist only temporarily, soon to be shut down by the host platforms, though long enough to achieve a pulse-like broadcasting of messages aimed at a broader global audience. The pulse messages could be like: "dear brother, don't imprison yourself in Telegram channels only as most of your channel members are ISIS supporters, but break the chain and join channels of infidels and other social networks to upset your enemies. Strive to be amongst them in the networks they have created and be steadfast therein, patiently awaiting your reward."<sup>27</sup> In general, ISIS's media manoeuver warfare aims to:

- Identify and report anti-ISIS channels to be suspended.
- Post and upload videos and materials on Facebook and YouTube.
- Use currently trending hashtags to reach numerous audiences.
- Tweet daily at peak times propagandizing purported atrocities committed by coalition forces.

These messages are usually coordinated by ISIS affiliates calling themselves 'The Media Mujahedeen'. Figure 2 shows an example of these messages, explaining the importance of media in wining the war against coalition forces.

As stated clearly in Figure 2, the ISIS propaganda arm considers the media battle to be worth at least 75 percent of the overall victory. Framed in this way, ISIS supporters are considered to have direct responsibility to use media as a weapon. In addition, the message encourages followers to keep re-engaging with Twitter, considering it as the most important media field. In other words, ISIS believes winning the media war means winning the war against coalition forces.

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<sup>27</sup> As Cited in Nashir political service Telegram channel on 21 June 2016.



Figure 2: Message forwarded from the Nashir Telegram channel<sup>28</sup>.

### *Online platform for the recruitment of lone wolves*

Part of ISIS' stated information operation objectives is to spread a message of fear among the native populations of coalition forces, and to inspire Muslims to engage in lone wolf attacks striking at Western targets. According to Ramon Spaaij, lone wolf attacks are characterized by a person working individually, not belonging to an organized terrorist group, and not directed by an outside command or hierarchy.<sup>29</sup> However, direct online ties between individuals carrying out attacks in the West and ISIS networks are hard to prove and are often uncertain, even though ISIS has claimed responsibility for most attacks occurring in the period between 2015 and 2016. Data gathered by Nesser, Stenersen, and Oftedal shows that "only 6 out of 23 single actors [...] acted solely based on online inspiration."<sup>30</sup>

### *ISIS' Telegram Channels*

On November 26, 2016, the ISIS media channel Furat released a video in French with Arabic subtitles, titled *Sur leur pas*, meaning on their way in Arabic. According to Nico Prucha, "the video is in the 16:9 format, full high definition, and features praise for the spate of 'lone wolf' attackers in 2016. The film demonstrates vividly how ISIS uses Telegram to instigate attacks."<sup>31</sup> Reviewing the role of encrypted communication platforms such as Telegram in catalyzing lone wolf attacks; our observations over the type of messages generated and disseminated via ISIS' Telegram channels involve two main themes: (1) inspiring lone wolf attacks, and (2) claiming responsibility for, and celebrating acts of terror.

<sup>28</sup> Screenshot obtained from Nashir political service on 3 May 2016

<sup>29</sup> Ramon Spaaij, "The Enigma of Lone Wolf Terrorism: An Assessment," *Studies in Conflict and Terrorism* 33, no. 9 (2010): 854-870.

<sup>30</sup> Nesser, Stenersen, and Oftedal, "Jihadi Terrorism," 3-24.

<sup>31</sup> Prucha, "IS and the Jihadist," 48-58.

### *Inspiring lone wolf attacks*

The term lone wolf was initially coined in the late 1990s by two white supremacists, Tom Metzger and Alex Curtis, as part of an effort to encourage other supremacists to act alone in committing violent crimes. Other terms that have been used to describe similar or comparable forms of political violence include “leaderless resistance” and “freelance terrorism.”<sup>32</sup> According to the US Homeland Security Committee report (2016), ISIS “has successfully crowd-sourced its terrorism agenda by inspiring independent followers to conduct most of its attacks. Two-thirds of ISIS plots against the West appear to have been inspired by the terror outfit, rather than directed by it or carried out by trained jihadists.”<sup>33</sup> This skill to franchise terror has decreased the cost of the group’s operations and increased the impact of its violence.

As shown in Figure 3, the frequency of individual attacks occurring in the West increased markedly between July and August 2015, after ISIS called for lone wolves to carry on attacks. Significantly, lone wolves carried out two thirds of these attacks.

According to the Homeland Security Committee report mentioned above, ISIS has been tied to at least 75 terrorist attacks against Western interests since early 2014.<sup>34</sup> A list of ‘do it yourself jihad’ attacks against Western interests, compiled from ISIS’ Telegram channels, where ISIS claimed responsibility and/or the perpetrators pledged allegiance is shown in Table 1.

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<sup>32</sup> Gabriel Weimann, “Lone Wolves in Cyberspace,” *Journal of Terrorism Research* 3, no. 2 (2012), 75-90, available at: <http://doi.org/10.15664/jtr.405>.

<sup>33</sup> Homeland Security Committee, “#Terror Gone Viral: Overview of the 75 Isis-Linked Plots against the West 2014-2016 (Washington, DC: Government Printing Office, 2016), available at: <https://homeland.house.gov/wp-content/uploads/2016/03/Report-Terror-Gone-Viral-1.pdf>.

<sup>34</sup> Homeland Security Committee, “#Terror Gone Viral,” 1-15.

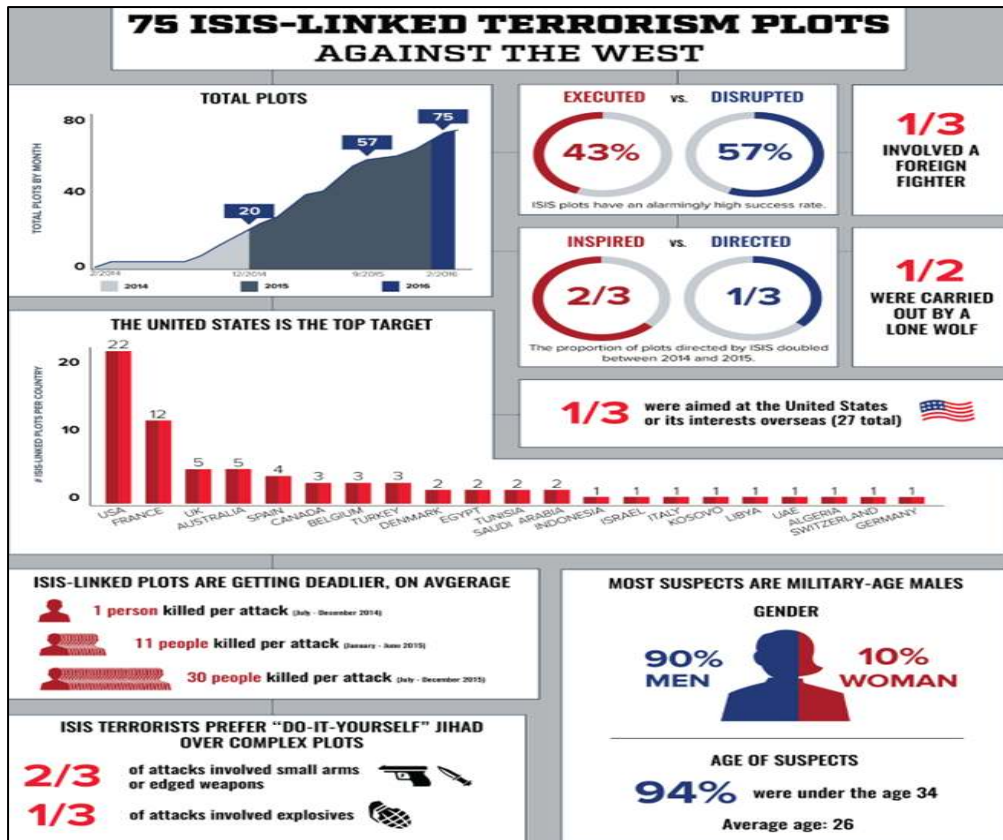


Figure 3: Infographic demonstrating ISIS’ links to lone wolf attacks.<sup>35</sup>

Date	Country	City	Weapon	Causalities
14/July/2015	France	Nice	Truck	80 killed
	Germany	Würzburg	Axe /knife	4 wounded
24/July/2015	Germany	Ansbach	suicide bombing	15 wounded
24/July/2015	France	Rouen	knife	1 killed (84 years priest)
22/March/2016	Brussels	Brussels	Suicide bombings	32 killed 300 wounded
2/December/2015	USA	San Bernardino	shooting	14 killed 21 wounded
1/January/2017	Turkey	Istanbul	shooting	39 killed 71 wounded

Table 1: Number of lone wolf attacks against Western countries, weapons used and number of causalities.

<sup>35</sup> Global Terrorism Index. “Measuring and Understanding.”



As an illustration of the method of catalyzing lone wolf attacks, Figure 4 shows a message broadcast by the Nashir channel, encouraging individuals to carry out what they call ‘do it yourself jihad’. The message provides ideas to encourage lone wolf attacks, including examples of easy to obtain weapons as well as methods of perpetrating terror attacks.

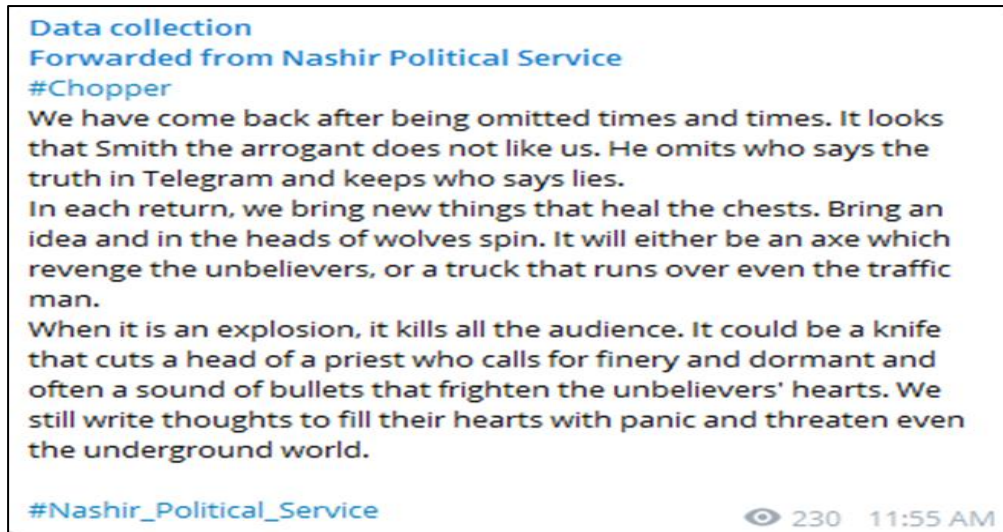


Figure 4: Screenshot from ISIS Telegram channel, Nashir political services<sup>36</sup>.

In a significant example of escalating targeting capabilities, the United Cyber Caliphate (UCC) Telegram channel broadcast a link to a ‘kill list’ file posted on Justpaste.it and addressed at lone wolves, containing the alleged names, addresses, and telephone numbers of a hundred US soldiers (Figure 5). The message uses two main hashtags, #kill Dogs and #Individual wolves, and reads: “we know all your citizens INFO, and we have all your personal data. And your systems have failed to protect the most of your data [sic]. We are watching you. And we will kill you<sup>37</sup>.”

<sup>36</sup> Screenshot obtained from Nashir political service 23 May 2016

<sup>37</sup> As quoted in United Cyber Caliphate Telegram channel on 19 August 2016



Figure 5: Screenshot obtained from UCC telegram channel<sup>38</sup>.

The UCC channel has also previously broadcasted links to manuals and instructions on terror tactics and methods aimed at lone. Such messages are usually identified with the “lone wolves #get ready” hashtag in Arabic (Figure 6), and suggest terror tools for ‘do it yourself jihad’ including guns, cars, trucks, knives, etc.



<sup>38</sup> Screenshot obtained from UNITED CYBER CALIPHATE on 19 August 2016.

Figure 6: Screenshot obtained from UCC Telegram channel, titled: lone wolves #get ready<sup>3940</sup>.

Additionally, prior to the 2016 Olympics in Rio de Janeiro, ISIS-related Telegram channels encouraged individuals to adopt Munich-style attacks targeting Western athletes.<sup>41</sup> The use of the #RioLW hashtag (LW refers to lone wolves) on ISIS-related Telegram channels (see Figure 7) were considered serious enough to force Brazilian authorities to mobilize extra 200,000 military personnel to secure the Olympics.



Figure 7: Screenshot obtained from SITE intelligence group discussing the #RioLW hashtag<sup>42</sup>.

At any one point a number of visual messages aimed at potential lone wolves circulate across ISIS-related Telegram channels, with the clear purpose of inspiring further terrorist attacks (Figures 8 and 9).

<sup>40</sup> Screenshot obtained from UNITED CYBER CALIPHATE on 19 August 2016

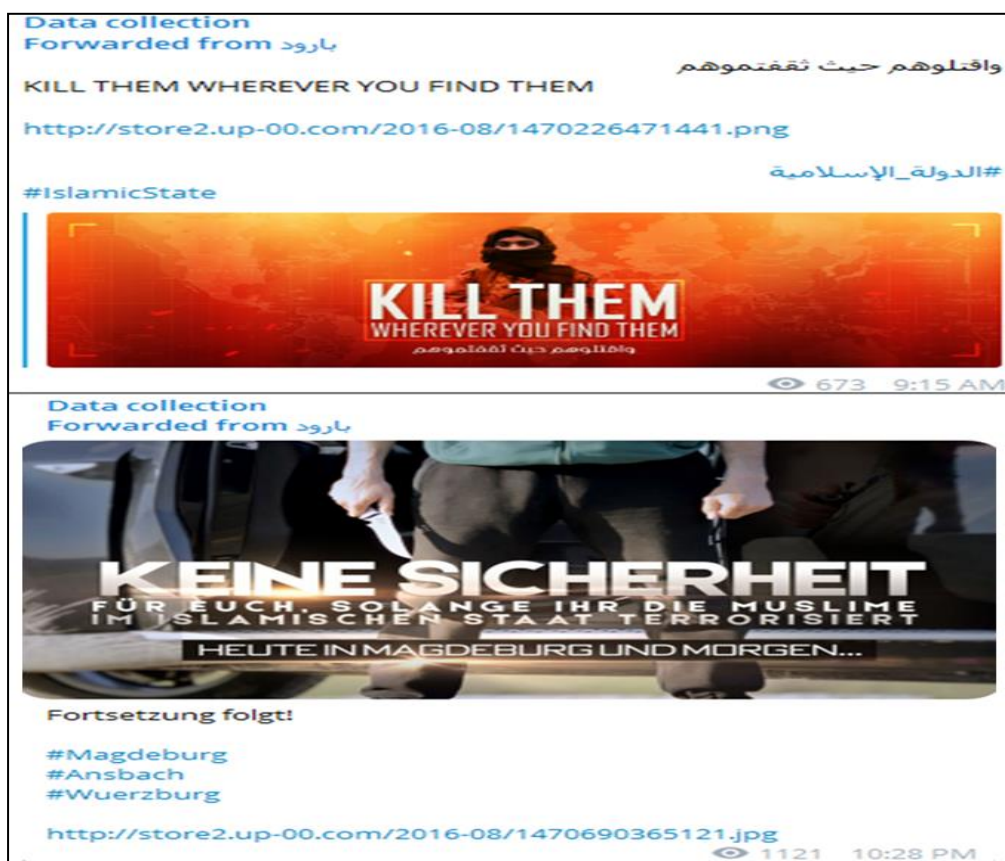
<sup>41</sup> Referring to the 1972 PLO terrorist attack on Israeli athletes during the Munich Olympics.

<sup>42</sup> Screenshot obtained from SITR Twitter account posted on 5 August 2016.





Figure 8: Screenshot from the Sham State Media Organization Telegram channel encouraging more attacks<sup>43</sup>.



<sup>43</sup> Screenshot obtained from Sham State Media Organization Telegram channel on 11 August 2016

Figure 9: Screenshots from a propaganda video encouraging attacks, posted on the Barood Telegram channel<sup>44</sup>.

Overall, the number of people killed by jihadi violence in Western Europe in 2014-2016 (273 people) is greater than the number in all previous years combined (267 people).<sup>45</sup> This is due to a small number of highly deadly incidents, as shown in Figure 3. In the period of 2014 to 2016 alone, 42 well-documented plots were registered (of the 42 plots, 38 were reported to be linked to ISIS), with 9 plots registered in 2014, 17 in 2015, and 16 in 2016.

### *Claiming responsibility for, and celebrating acts of terror*

In the aftermath of each individual attack on a Western target, pro-ISIS channels on Telegram are flooded with images and posts mass-produced by online collectives of e-jihadists celebrating these attacks by hijacking popular hashtags such as #NiceAttack, #Nice, #Brussels (Figure 10).

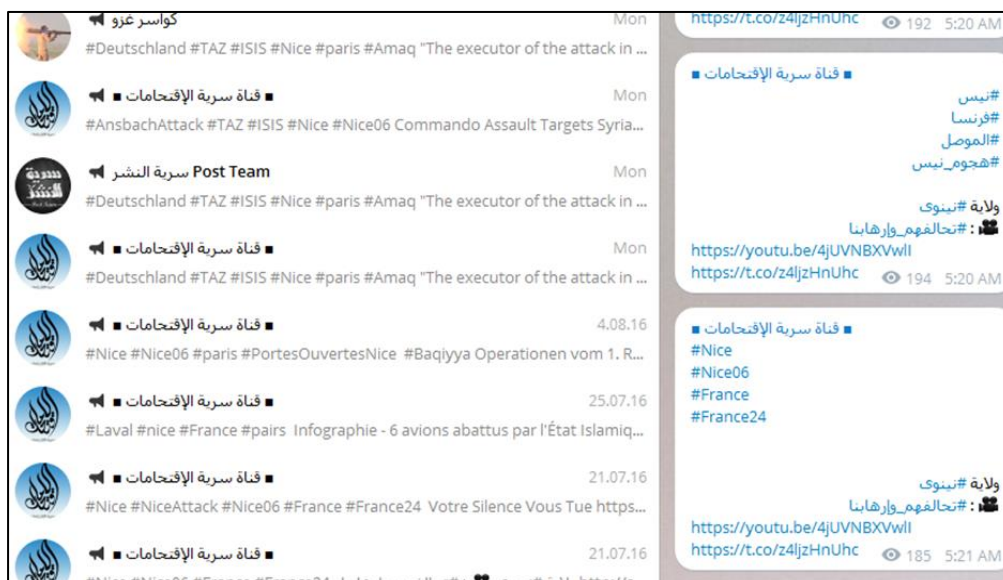


Figure 10: Screenshot from ISIS Telegram channels celebrating lone wolf attacks<sup>46</sup>.

The process of establishing responsibility for and celebrating in the aftermath of lone wolf acts of terror works fluidly and simultaneously encourage affiliates to celebrate the lone wolf across related Telegram channels. It also propagandizes the lone wolf pledge of allegiance, if there is one, across wider social media (Figures 11 and 12).

<sup>44</sup> Screenshot obtained from Barood Telegram channel on 9 August 2016

<sup>45</sup> Nesser, Stenersen, and Oftedal, "Jihadi Terrorism," 3-24.

<sup>46</sup> Screenshot obtained from ISIS affiliated channels on Telegram in the period between 21 July to 4 August 2016.



Figure 11: Amaq news agency claiming responsibility for lone wolf attacks.<sup>47</sup>

Ironically, content disseminated by Amaq news agency is considered authentic and trustworthy by both international media outlets and ISIS sympathizers. Even so, Western-led efforts to degrade and suppress its social media presence have pushed Amaq into adopting Telegram as its primary platform. To date it appears that despite Telegram's continuous attempts to take down the Amaq channel it keeps resurfacing with a large number of followers. The channel is important enough in the ISIS information warfare operations to feature lone wolf pledges of allegiance, filmed before or after major attacks (Figure 12).

<sup>47</sup> Shane Harris, "This Is ISIS's New Favorite App for Secret Messages," accessed December 10, 2015, <http://www.thedailybeast.com/articles/2015/11/16/this-is-isis-new-favorite-app-for-secret-messages.html>.



Figure 12: Video of Würzburg attacker Muhammad Riyadh pledging allegiance to ISIS.<sup>48</sup>

There appears to be substantial evidence that Telegram is used by ISIS as a propaganda platform inspiring individual jihadist to act against Western targets. To ascertain its role in context, it is important to analyze lone wolf attacks in the West before and after the emergence of ISIS.

### Analysis of Lone Wolf Attacks

To date, there is little evidence proving that ISIS is directly coordinating terror plots against the West, even though the organization celebrates these attacks when they occur, and claiming responsibility post factum. On a conceptual level, Gartenstein-Ross has argued that the failure to identify direct ties between lone wolf attacks and ISIS is part of a broader and long-lasting pattern of underestimating the goals of jihadist networks in Western countries.<sup>49</sup> In France, ISIS member Rachid Kassim has been linked to at least two plots that were initially believed to have been carried out by lone wolves with no oversight or direction from ISIS. He is also thought to have been the orchestrator of over half of the 17 total plots foiled by French authorities in 2016. Most of the planning was done through his Telegram channel 'Sabre de Lumière' (Sword of Light). In an analysis of 38 ISIS-linked plots and attacks in Europe between 2014 and October 2016, 19 (50 percent) were found to have involved online instruction from members of ISIS' networks. By contrast, prior to the emergence of ISIS on Telegram, Global Terrorism Index indicates that in

<sup>48</sup> Harris, "ISIS's New Favorite App."

<sup>49</sup> Gartenstein-Ross and Barr, "The Myth of Lone-Wolf Terrorism."



2014 lone wolf attacks motivated by political extremism accounted for the majority of deaths, compared to Islamic fundamentalism which accounted for only 19% of total deaths (Figure 13).



Figure 13: Screenshot shows Islamic fundamentalism is not a major catalyst for lone wolf attacks in the west.<sup>50</sup>

After the emergence of ISIS and its subsequent calls for individual attacks against Western interest, Islamic fundamentalism became the primary motivation for terror attacks in Western countries. The strategy was outlined by Abu Mohammed Al-Adnani, the spokesperson of ISIS, who is on record saying, “lone wolf attacks in the US and Europe were dearer to us than the biggest action by us in Iraq and Syria.”<sup>51</sup> ISIS propaganda

<sup>50</sup> Global Terrorism Index. “Measuring and Understanding.”

<sup>51</sup> Adam Withnall, “Isis Official Calls for 'Lone Wolf' Attacks in US and Europe during Ramadan,” Independent 2016, available at: <http://www.independent.co.uk/news/world/middle-east/isis-official-calls-for-lone-wolf-attacks-in-us-and-europe-during-ramadan-a7042296.html>.



aimed at potential Muslim lone wolf attackers in the West have been systematically broadcast via social media available globally. As Gabriel Weimann noted, “In nature, wolves do not hunt alone: they hunt in packs. So, with the lone-wolf terrorists: there is a virtual pack, a social network, behind them. They may operate alone, but they are recruited, radicalized, taught, trained, and directed by others.”<sup>52</sup> Even though so far the number of attacks that can be credited to lone wolves is less than 2% of overall terrorist activity in most countries, the problem is in the rapidly growing number of attacks and the tremendous difficulty in predicting and disrupting them.<sup>53</sup>

Crucially, as we have argued above, this process maps onto the ongoing efforts aimed at degrading ISIS’ digital capabilities, as the primary achievement of these efforts has been to push ISIS information operations to Telegram. Consecutively, security agencies and terrorism researchers have started highlighting the role of Telegram as a catalyst for terrorist mobilization. In popular media, this is framed typically as a new a sinister discovery:

The two men who are accused [sic] of killing a French priest on July 26 met on the service (Telegram), and the BBC reported that one of the attackers discussed his murder plan in a closed group there. So, it makes sense that French law enforcement would want to be seen as cracking down on possible terrorism plans on the app.<sup>54</sup>

In the aftermath of ISIS’ shift to Telegram, there has been growing awareness in media and policy circles of the role played by encrypted communication technologies and the rise of lone wolf attacks in the West. In an October 2015 testimony before the House Homeland Security Committee, the then Federal Bureau of Investigation (FBI) director James Comey stated that:

ISIS has used ubiquitous social media to push into the United States, into the pockets, onto the mobile devices of troubled souls throughout our country in all 50 states with a twin message: come or kill, come or kill. Come to the so-called caliphate, live a life of glory, participate in the final battle between good and evil on God’s

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<sup>52</sup> Weimann, “Lone Wolves in Cyberspace,” 75-90.

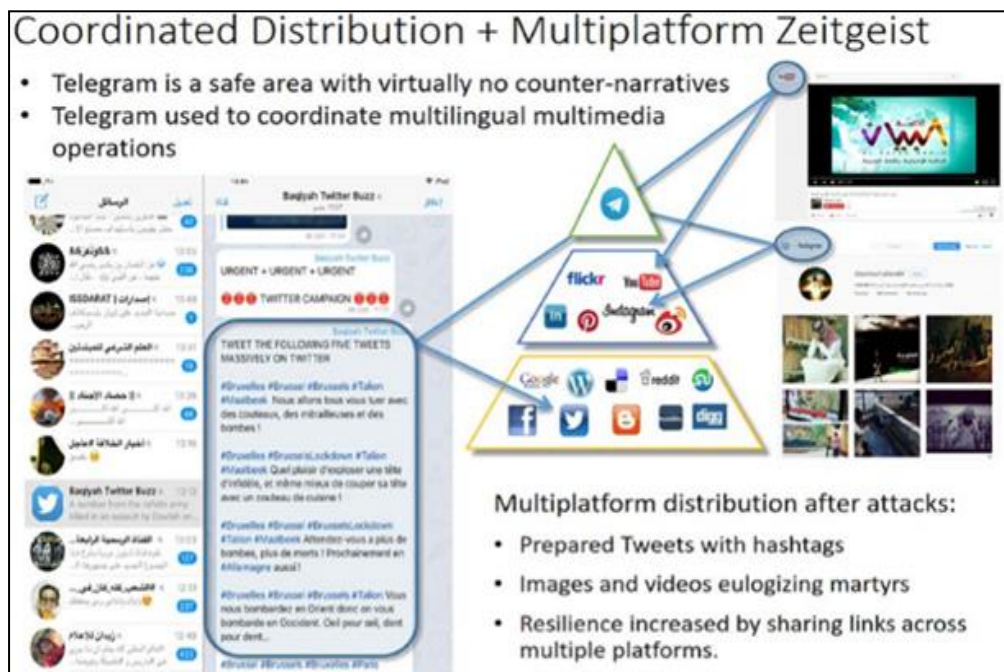
<sup>53</sup> Spaaij, “The Enigma,” 854-870.

<sup>54</sup> Sara Morrison, “French Teen Charged with Planning Terrorist Attack on Telegram, Vocativ,” accessed November 18, 2016, <http://www.vocativ.com/349564/french-teen-charged-with-planning-terrorist-attack-on-telegram/>.

side. Come to the caliphate, and if you can't [sic] come, kill where you are.<sup>55</sup>

Telegram is often seen as the primary driver behind the emergence of a new style of digital jihad because of its facilitation of encrypted communication between ISIS members and affiliates.<sup>56</sup> There has been increasing awareness of the role of private Telegram channels in the facilitation of radicalization and coordination between ISIS members and potential lone wolf recruits.<sup>57</sup> These types of channels act not only as one-to-many propaganda outlets, but also as one-to-one and many-to-many coordination platforms. Importantly, the secure format of these communications makes it that much harder for security agencies to ascertain the coordination logistics of terror acts and disrupt potential attacks (Figure 14).

For example, even though there is no evidence that Telegram was used to coordinate the Paris terrorist attacks, the attackers managed to coordinate and execute their plans while evading detection by counter-terrorism officials.<sup>58</sup> ISIS propaganda has been quick to claim responsibility for lone wolf attacks while maintaining a propaganda image of overwhelming success (Figure 15).

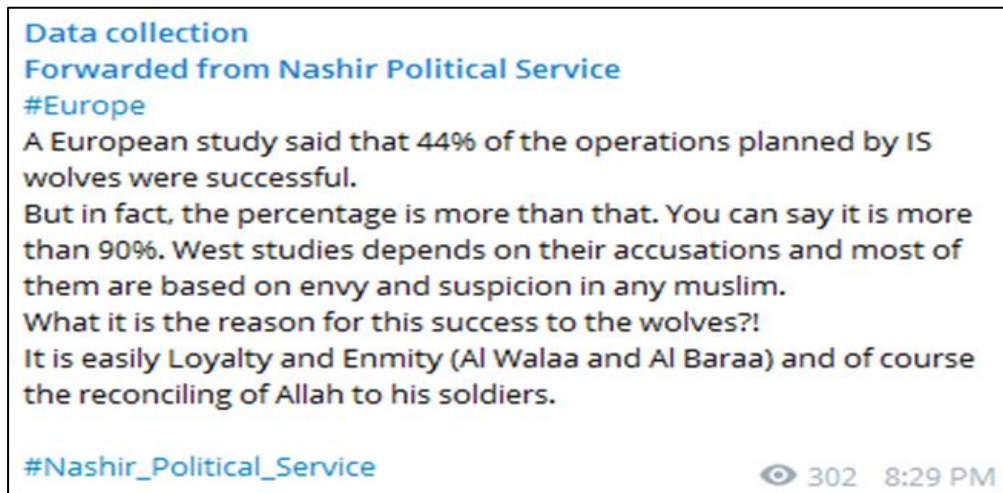


<sup>55</sup> Homeland Security Committee, “#Terror Gone Viral,” 1-15.

<sup>56</sup> Russon and Murdock, “Welcome to the Bizarre.”

<sup>57</sup> Victor Garcia, “At the Heart of Ansar at Tawhid, the “jihad channel” of Telegram and Kermiche,” *L’Express*, last modified 6/8/2016 available at: [http://www.lexpress.fr/actualite/societe/ansar-at-tawhid-le-canal-djihad-de-telegram-et-de-kermiche\\_1818983.html](http://www.lexpress.fr/actualite/societe/ansar-at-tawhid-le-canal-djihad-de-telegram-et-de-kermiche_1818983.html).

<sup>58</sup> Kavanaugh and Shiloach, “ISIS Spreads Violence.”

Figure 14: Coordination among ISIS network.<sup>59</sup>Figure 15: ISIS claiming successful attacks in Europe<sup>60</sup>.

## Discussion

Most messages posted on Telegram by ISIS members and affiliates highlight the role of lone wolves in perpetrating terrorist attacks across Western countries. These posts work to both reinforce ISIS propaganda of success and positive momentum against the West, as well as catalyze and recruit new lone wolf attackers from among a multitude of ISIS sympathizers. Islamic State of Iraq and Sham members and affiliates acting as e-jihadists are using Telegram channels as logistical tools to support outreach to and communication with potential lone wolves. Logistical support extends from facilitating secure one-to-many and many-to-many communication channels, to producing and rapidly sharing visual propaganda in support of attacks, free distribution of hacked or sock-puppet Twitter accounts, and instructions to evade surveillance through the use of TOR/VPN. Specific logistics information for perpetrating lone wolf attacks includes tools, potential locations, tactics for target identification, and methods of concealment. Weimann has argued, “in fact, almost all of the lone-wolf cases in recent years have involved the use of electronic social media. For lone wolves, online communication provides the needed social bonding, a (virtual) community [sic] and a source of guidance, support [sic] and moral backing.”<sup>61</sup>

<sup>59</sup> Roula Khalaf, “Why Everyone, Including the Jihadis of Isis, loves Telegram Messaging,” *Financial Times*, November 25, 2015, available at: <https://www.ft.com/content/86e9b154-8798-11e5-90de-f44762bf9896>.

<sup>60</sup> Screenshot obtained from Nashir political service Telegram channel on 23 August 2016.

<sup>61</sup> Weimann, “Lone Wolves in Cyberspace,” 75-90.

In addition, Telegram channels have provided ISIS with a safe media environment allowing it to communicate propaganda to a global multilingual audience. Key propaganda messages are disseminated in Arabic, English, French, Portuguese, German, Turkish, and Spanish making it much harder to disrupt ISIS' information operations. In effect, Telegram acts as an open source marketplace of communication between leading figures of the terrorist organization and a multitude of globally distributed affiliates and sympathizers. This is consistent with Gartenstein-Ross' conclusion that encrypted social media apps such as Telegram have allowed ISIS to build cohesive and intimate online communities facilitating rapid radicalization.<sup>62</sup>

It is important to note that, while ISIS and its affiliates effectively leveraged Telegram, the terrorist organization failed to establish and maintain a wide media presence across popular social media platforms. Islamic State of Iraq and Sham-affiliated Telegram channels constantly encourage followers to reopen suspended Twitter accounts, demonstrating that the organization still sees Telegram as a poor substitute for the global public platform of Twitter. The specific architecture of Telegram has forced ISIS to use it as a semi-closed coordination and initial media generation network. This network involves: 1) Islamic State of Iraq and Sham fighters uploading information and receiving updates from battles in real time, 2) Islamic State of Iraq and Sham affiliates or sympathizers sharing news and updates, 3) anti-ISIS actors (Intelligence agencies, hackers), and 4) researchers and journalists.

Although direct links between ISIS and individual lone wolves are hard to substantiate, studies have found a link between lone wolf attacks in the West and specific calls from ISIS preceding them.<sup>63</sup> That said, the nature of lone wolf attacks necessitates a case-by-case study of each incident. Lone wolf attacks may be motivated by a combination of beliefs, personal vendettas, religious, or political objections. Moreover, the emergence of ISIS-related "virtual entrepreneurs" has injected additional network complexity into what were traditionally seen as radicalized lone wolves attacking Western targets.<sup>64</sup> For example, ISIS-related virtual entrepreneurs have been involved in assisting with travel logistics therefore acting as connecting hubs between fully distributed lone wolves operating in target countries. This development has made it much easier to motivate and inspire individuals who are ready to perpetrate terrorist attacks.

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<sup>62</sup> Gartenstein-Ross and Barr, "The Myth of Lone-Wolf Terrorism.

<sup>63</sup> Spaaij, "The Enigma," 854-870.

<sup>64</sup> Meleagrou-Hitchens and Hughes, "The Threat to the United States."

## Conclusion

This study represents the first step in understanding the role of encrypted social media in enabling lone wolf attacks. We have illustrated how ISIS affiliates utilize Telegram, and the reasons behind the organization's digital migration. Although ISIS has effectively leveraged the features of Telegram, the organization always asks its followers to harness other platforms such as Twitter and Facebook. Throughout our study, ISIS' Telegram channels were persistently vulnerable to suspension by Telegram administrators. Popular channels such as Dabiq, Amaq, and Nashir have been suspended hundreds of times, dramatically reducing their audience. Furthermore, anti-ISIS actors have also migrated to Telegram, countering its propaganda and reporting channels for suspension. Nevertheless, it can be concluded that ISIS has harnessed Telegram's features to encourage, coordinate where possible, and propagandize lone wolf attacks against Western countries, as well as maintain its global network of terrorist information operations.