



Game over: Gamification in Al-Qaeda's Magazine *Inspire*

To address lone-wolf terrorists

Submitted in partial fulfilment of the
requirements for the degree of

MASTER OF ARTS
In
INTERNATIONAL RELATIONS

Author:	Marloes Dikken
Supervisor:	Prof. Dr. I. Duyvesteyn
Second reader:	Dr. G. Macaj
Student ID:	s2375974
Email	m.dikken@umail.leidenuniv.nl
Word count:	18203

Leiden, the Netherlands, 3rd of July, 2020

Contents

Introduction	p. 4
1. Al-Qaeda	
1.1 <i>The origins of Al-Qaeda</i>	p. 6
1.2 <i>Al-Qaeda's electronic jihad</i>	p. 8
1.3 <i>Radicalisation</i>	p. 8
1.4 <i>Online self-radicalisation</i>	p. 9
1.5 <i>Al-Qaeda's media strategy</i>	p. 10
1.6 <i>Inspire</i>	p. 11
2. Lone-wolf terrorism	
2.1 <i>Defining lone-wolf terrorism</i>	p. 14
2.2 <i>Lone-wolf terrorists and Al-Qaeda</i>	p. 15
3. Gamification	
3.1 <i>Defining gamification?</i>	p. 17
3.2 <i>MDA framework</i>	p. 18
3.3 <i>Gamification for behavioural change</i>	p. 20
3.4 <i>Al-Qaeda and gamification</i>	p. 21
3.5 <i>Gamification language in Inspire</i>	p. 22
3.6 <i>Concluding the literature review</i>	p. 23
4. Research methodology	
4.1 <i>Analysing the MDA framework in Inspire through the correlation matrix</i>	p. 24
4.2 <i>Analysing game-lexicon through Critical Discourse Analysis</i>	p. 28
4.3 <i>Critical Discourse Analysis</i>	p. 28
4.4 <i>Text selection</i>	p. 30
5. Gamification in <i>Inspire</i>	
5.1 <i>AQs narrative: the great challenge</i>	p. 31
5.2 <i>MDA Framework – Mechanics & Dynamics</i>	p. 34
5.3 <i>MDA Framework – Aesthetics</i>	p. 47
5.4 <i>The gamification journey of Inspire</i>	p. 48

6. Conclusion	p. 50
Bibliography	p. 52
Appendix A: Gamification lexicon	p. 59
Appendix B : Open Source Jihad articles in Inspire	p. 60
Appendix C: Challenges in <i>Inspire</i>	p. 62

Introduction

With terrorist attacks on the rise and several terrorist organizations marginalised, ‘lone-wolf terrorism¹’ and ‘leaderless jihad’ are becoming one of the main strategies adopted by Al-Qaeda (AQ) (Rudner, 2017). Instead of living and training physically with Al-Qaeda, individuals are increasingly recruited online and radicalised in their own country (Rudner, 2017). The accelerating use of the Internet to radicalise and mobilise individuals has become crucial for AQ. Not only does AQ launch, use and engage with several Jihadist websites, forums and social media, the use of gamification to engage with aspiring jihadists and to encourage violence is one of their latest strategies, and a very savvy one as well (Brachman & Levine, 2011).

Gamification is the use of game design elements in non-game context (Deterding, Dixon, Khaled & Nacke, 2011, p. 2). Primarily used as a marketing tool, brands like Coca-Cola and Lancôme use gamification for their brand campaigns. For example, Coca-Cola created a supermarket game where customers could win Coca-Cola prizes when succeeding in “throwing virtual ice cubes into a glass of coke” (Reed, 2019, para. 9). Lancôme organised a scavenger hunt, which enabled customers to win limited edition products or gifts (Reed, 2019). In these instances, the use of gamification can be considered innocent. However, terrorist organisations like AQ have picked up on this trend and use it to promote hatred and encourage violence (Ungerleider, 2011). Both online and offline, AQ uses gamification (Brachman & Levine, 2011). However, where some research is done on gamification techniques used by AQ on their online platforms, little research is conducted considering the use of gamification techniques in AQ magazine *Inspire*.

Even though their power has been weakened ever since the death of Osama bin Laden, a recent UN report of 2019 still warns that “Al-Qaeda senior leaders are strengthening the network’s global command structure and continuing to encourage attacks against the West” (US Intelligence Community, 2019, p.12). With terrorist groups mobilizing individuals at a stunning rate (Bloom, Horgan & Winter, 2016), and terrorist organizations promulgating very “media-savvy, integrated brand campaigns” (Rogers, 2017, p.3), it becomes crucial to understand how individuals like aspiring jihadists (lone-wolf terrorists) are mobilized through

¹A critical discussion on definitions of terrorism lies beyond this research scope. This study will use the definition of the European Union on terrorism: “intentional acts that are committed with the aim of seriously intimidating a population, or unduly compelling a Government or international organization to perform or abstain from performing any act, or seriously destabilizing or destroying the fundamental political, constitutional, economic or social structures of a country or an international organization” (Council of the European Union, 2002, p.4).

the use of gamification language in terrorists' groups' propaganda. Consequently, this research aims to answer the following research question:

To what extent does Al-Qaeda use gamification in their magazine 'Inspire', in order to address lone-wolf terrorists²?

I would like to research this question using (Critical) Discourse Analysis ((C)DA) because this research method studies the meaning of written text. CDA also focuses on the 'oppressed' discourse, which tries to withstand the impact of power of the dominant discourse (Van Dijk, 1993). Examining how AQ uses gamification to create social identities, address lone-wolf terrorists and possibly incite them to extremist violence can be done through CDA.

A deeper understanding of AQ's extreme Islamist narrative is essential in order to create effective counter-narratives. Studying the possible use of gamification techniques in *Inspire* enables counterterrorism measures to be more focused and more productive. Failing to confront and counter AQ's ideological appeal on potential radicals with their violent extremism strategies is a weakness that AQ has already exploited (Droogan & Peattie, 2018). Through examining *Inspire* as one of AQs jihadist propaganda tools in the context of gamification, this research contributes to a better understanding of the role of gamification as a vehicle to address potential lone-wolf terrorists. Doing so offers insights into AQ's attempts to appeal and resonate with Western Muslims through a relatively new strategy and hopefully adds to new ways for counterterrorism strategies.

² Academic works researching Al-Qaeda and radicalisation deploy a variety of terms concerning AQ's target group for *Inspire*. Often, the terms 'individuals in the West', 'homegrown terrorists', 'potential lone wolf recruits', 'jihadists' and 'sympathisers' are used simultaneously when indicating *Inspires'* target group. AQ predominantly refers to 'Mujahid', 'believer', or 'lone wolf' when inspiring individuals to strive for lone-wolf terrorism. For the sake of clarity, this research adopts the term 'lone wolf terrorism' or 'lone wolf terrorists' because both Western media and AQ (albeit in a lesser way) use this definition.

Literature review

1. Al-Qaeda

1.1 The origins of Al-Qaeda

In their books, Gunaratna (2002) and Holbrook (2014) outline the origins of Al-Qaeda and how they composed and propagated their ideological discourse to the public. According to Holbrook (2014), this is important to understand because AQ-leaders put much emphasis on their communicative effort for three main reasons, namely, to legitimize their cause, to spread their message to sympathetic audiences, and to intimidate their enemy. Especially the second aim is essential for this particular research.

In 1988, Osama bin Laden, a Saudi multimillionaire and inspirator of the Salafist cause, established Al-Qaeda. After the Peshawar meeting in 1988, some of the principle Arab Islamist militant leaders, including Abdullah Azzam, Osama bin Laden, and Ayman Al-Zawahiri, established AQ. Despite disunion amongst these men on the future direction of jihad, the conjugate goal of early AQ was the spread of Jihad amongst Arabs outside Afghanistan to install Muslim governments to rule the lands (a caliphate) (Gunaratna, 2002). Having had prior experience in coordinating Arab fighters and their activities in Afghanistan and Pakistan, Bin Laden became the organizational leader of AQ. In the following years, AQ developed quickly in both material means and in gathering support (Holbrook, 2014).

Isolation has been a core issue for bin Laden since he was banned from his Saudi homeland, due to his restrained relationship with this country. A safe haven or a base (which is also the meaning of AQ) to work from, was therefore crucial for Bin Laden and AQ, which, with the strengthening of the Taliban in Afghanistan, was provided for them in this region in the mid-nineties. Between 1996 and the 9/11 attacks, AQ experienced their 'triumph' years, when the group became "the most significant financial sponsor of Islamic extremist activities in the world" (Holbrook, 2014, p. 14). Bin Laden held great hatred against the United States, which he saw as the root of all evil and blamed them for all the afflictions happening in the Muslim world (Atwan, 2006). According to bin Laden, the US was corrupt and hypocrite, sponsoring regimes to eliminate Islam while occupying the lands of Islam and its holy places. Bin Laden's deep rancour eventually culminated in AQ's 'Declaration of jihad' against the United States in 1996.

Thus, from their base in Afghanistan, bin Laden and Zawahiri were able to publish multiple declarations that verbally activated their global campaign against the secular West,

AQ's far enemy. In this declaration, AQ calls on every individual's plight to fight this far enemy in any country when and where possible. This call for violent jihad as every individual's duty is a different interpretation than the traditional call to jihad, which was only legitimate when Islam was under direct attack and when the Imam of the Muslim community (ummah) declared a jihad. Hence, this new interpretation by AQ lowered the threshold for engaging in violence significantly (Holbrook, 2014). This aspect is crucial to understand, according to Holbrook (2014), because this specific duty of all Muslims to wage jihad has become a 'cosmic war' between AQ and their far enemy, the West. It is furthermore also important to this study because this concept had evolved into the increasing promotion of 'leaderless jihad' when the organization of AQ weakened with the core leadership either killed or in hiding.

Besides training a militant branch of the Taliban (Brigade 055) and recruiting mujahideen (jihadists) to volunteer for their jihad cause, AQ initiated their first attacks by bombing the American embassies in Nairobi and Dar-el-Salaam (Atwan, 2006) during their period in hiding in Afghanistan. In the years that followed, AQ continued to act on their *fatwa* against the US by executing several bombings and suicide attacks while preparing for their great revenge; the 9/11 attacks on the World Trade Centre. During their initial year, AQ was not only successful in their military affairs, but also developed more and more relations with the media, enabling them to propagate their message. As Holbrook (2014) describes, their engagement with the media has always been a vital element of AQ because it provided them a platform to disseminate and steer their discourse.

With AQ's haven in Afghanistan exposed after 9/11, the structure of the organization changed significantly. The core group relocated to Pakistan, and individuals sympathising with AQ's cause became more prominent (Gunaratna, 2002). In the years after 9/11, AQ's domain of diffuse individuals scattered around the world expanded. These individuals lacked the military experience and religious knowledge but were drawn to AQ's message and worldview (Holbrook, 2014). Hence a cohesive and appealing public narrative became pivotal in sustaining and nurturing AQ's 'fan base' and promoting their violent jihad in the hope that these sympathizers would act on their call by conducting or supporting terrorism (Holbrook, 2014, p. 18). One major driving force boosting AQ's ability to export this narrative has been the Internet.

1.2 AQ's electronic jihad

Heickerö (2014) demonstrates clearly how, after 9/11, the Internet became a significant channel for AQ. AQ not only used the Internet to network between the different loosely tied cells that form part of the organization but also to locate, target and recruit new sympathisers for their jihad (Heickerö, 2014). In this way, numerous scholars agree that AQ used the Internet to further the process of online self-radicalisation, recruit aspiring terrorists, and promote lone-wolf terrorism (Perešin, 2014; Rudner, 2017; UNODC, 2012; Venhaus, 2010). Although there are many other purposes for AQ to use the Internet (e.g., for training and raising funds), this thesis focuses on the possibility to address aspiring lone-wolf terrorists through one of AQ's propaganda tools; their magazine Inspire. Considering this magazine is distributed online (in both Arabic and English), the process of online (self)-radicalisation, as part of AQ's virtual jihad, is essential and will be further explored.

1.3 Radicalisation

Radicalisation is a complex and contested concept because it spans a wide range of people, places, and processes where radicalisation occurs. Albeit the process of radicalisation is perceived in different ways, the majority of scholars immersed with this topic differentiate radicalisation in 'cognitive radicalisation' and 'violent radicalisation' (McCauley & Moskaleiko, 2012; Vidino & Brandon, 2012; Sageman, 2017). Cognitive radicalisation is the adoption of extreme beliefs, whereas violent radicalisation happens when an individual's behaviour radicalises by turning to violence (Vidino & Brandon, 2012). Hence, individuals can be seen by authorities as radicalised, even though they have not acted out on their extremist ideas (Ahmed, 2020). On the other hand, as Sageman (2017) points out, adopting radical beliefs does not inevitably lead to violence. This research is interested in the process of radicalisation in which both cognitive and violent radicalisation is adopted by potential lone-wolf terrorists. Therefore, this research sees radicalisation as "the process of turning to political violence" (Sageman, 2017, p.10).

These both strands of radicalisation can occur offline and online, through education, ideological narratives, in social communities, prisons and on the collective or individual level (RAN, 2016; Malthaner, 2017)³. This research is particularly interested in the process of

³ A comprehensive account of the literature on radicalisation is outside the scope of this research. For more information on the process of radicalisation, see also Ahmed, 2020; Bouhana and Wikström, 2011; Sageman, 2017; Vidino and Brandon, 2012; Malthaner, 2017.

radicalisation taking place online and at the individual level, which will be further explored below.

1.4 Online self-radicalisation

According to Bermingham, Conway, McInerney, O'Hare and Smeaton (2009, p.231), online radicalisation is “a process whereby individuals, through their online interactions and exposures to various types of Internet context, come to view violence as a legitimate method of solving social and political conflicts.” This quote highlights how the social environment (online interactions) and the formation of identity (the process of beliefs and convictions) are important elements of radicalisation.

Many accounts outline the process of online self-radicalisation in different stages (Helfstein, 2012; Liebermann & Collins, 2008 & Van den Bos; 2018). Liebermann and Collins (2008) outline the path of self-radicalisation in a four-stage model, comprising the phases of pre-radicalisation, self-identification, indoctrination, and finally, jihadization. After pre-radicalisation, where someone has no ties yet to extremist ideas, an individual becomes exposed to violent (Islamist) ideology and starts exploring it as an answer to questions concerning their background, identity, or purpose. In this self-identification phase, individuals gradually move away from their own identity (as present in the pre-radicalisation phase) and begin to associate themselves with others who share the same ideology. This self-identification phase is the most vulnerable stage for aspiring AQ-supporters, because here exploration into jihad begins (Hamblet, 2017). Their search for identity and meaning often comes with loneliness and desire for belonging, which can motivate them to seek jihadist propaganda. Triggered by the message that the West is at war with Islam, that Muslims are obliged to defend their religion and that violence is the only way to do so, individuals in this second phase may intensify their extreme Islamic beliefs and adopt the jihadi-Salafi ideology. If this interpretation of Islam is strengthened further in the third phase, aspiring terrorists can conclude that violence is the only way to reach the goals of AQ and their beliefs, bringing them to actual jihad.

Similarly, Van den Bos (2018) defines the phases of radicalisation as ‘activism’, ‘extremism’ and ‘terrorism’. In his model, Van den Bos (2018) emphasizes the experience of unfairness and injustice as a key impetus of social change. Van den Bos his framework starts with events that people may perceive as unfair, like unfair treatment by societal authorities or feeling deprived as an individual or as a group member of valuable goods or immaterial issues compared with other individuals and other groups (2018, p. 10). These perceptions of

unfairness strongly influence people's attraction to radical thoughts and behaviours. When combined with a sense of frustration and the feeling of deprivation, the chances of becoming radicalised increase, especially when people feel uncertain about their identity.

Radicalisation is not a linear process but an iterative development that can be interrupted, reinforced or repeated by external factors or by the individual (Helfstein, 2012). However, most studies do agree that loss of identity and social marginalisation are two significant elements inciting the radicalisation-process (Gill, Horgan & Deckert, 2014; Jenkins, 2007; Orav, 2015). Here, the Internet can play a supporting role, facilitating the process of forming a mature identity, but can also be an insecure place, purporting negative consequences when a particular radical perspective becomes the dominant one. In the latter, the Internet can increase the selective search actions of an individual when he or she only listens to like-minded opinions. As such, the web turns into an "echo room", since homogeneous groups share the same belief or conviction and do not express opposing views. Hence, participants are more likely to conform to the group and adopt more extreme views (Geeraerts, 2012; Hamblet, 2017).

It is pivotal to understand this online radicalisation process, because in recent years, the global Internet usage increases and digital growth of networks accelerates (Global Web Index, 2018). This global Internet has reached all corners of the world, including AQ, who has incorporated intelligent features of the Internet in their media strategy.

1.5 Al-Qaeda's media strategy

According to Perešin (2014), the flow of communication on the Internet has also increased the flow of radical ideas. AQ makes good use of this network with a global reach for their media war, to propagate their message, radicalise individuals and recruit them. Indeed, bin Laden himself remarked that: "It is obvious that the media war in this century is one of the strongest methods; in fact, its ratio may reach 90% of the total preparation for the battles" (Bin Laden, in Zelin & Fellow, 2013, p.3).

A report of the United Nations Office on Drugs and Crime (UNODC, 2012) confirms that disseminating propaganda online is one of the main reasons why terrorist organisations use the Internet. With such a broad reach, the Internet is the perfect tool to distribute AQ's videotapes and online magazines, engage with social media, virtual chat rooms and forums and set up their websites (UNODC, 2012). Through the Internet, AQ is also able to engage with their audience and possible sympathisers. Rudner's study on *electronic jihad* argues that AQ is deploying all of the above to spread the call of jihad (2017). Indeed, in AQ's own

Twenty-Year Strategic Plan (2001-2020), AQ identifies the Internet as their principal tool to rally Muslims jihadist empathy throughout the world (Rudner, 2017). This so-called *electronic jihad* to promote global terror takes shape in different areas on the Internet. AQ mainly uses jihadist websites, like the Global Islamic Media Front, YouTube, and Twitter as social media platforms and chatrooms in order to gather support, provide technical and operational instructions for terrorist acts and to encourage individual engagement in terrorism as a whole (Rudner, 2017). One of AQs' digital tools to further their three primary goals is their online magazine *Inspire*.

1.6 *Inspire*

Before *Inspire*, several digital magazines created by AQ already circulated on the Internet. Some of these were also in English, like *Jihad Recollections*, published by AQ in Yemen, or *Defenders of the Truth*, published by Al Mosul Islamic Network in 2009 (Seib & Janbek, 2011 in Sivek, 2013). Although both *Inspire* and previous magazines focus on communicating AQs' ideology and recruiting new followers, *Inspire* shows key differences compared to AQs' earlier digital magazines (Sivek, 2013). First, *Inspire* aims to focus on anti-Islamic activity in the West and warns its readers for Muslim intolerance. Second, *Inspire* aims to address Western youth, by idolizing AQ-leader Anwar Al Awlaki. Even though Al Awlaki was killed in 2011, he continues to be glorified as a martyr and his celebrity status aims to help Western youth resonate with AQs' leader and attract the reader to AQ, because "his memory and influence live on" (*Inspire* Issue 10, p.9). Third, *Inspire* often adopts a satirical tone and includes more articles characterized by humour not previously seen before, so as to appeal to their young audience (Sivek, 2013).

With previous experience in distributing jihadist propaganda in the English language online, Samir Khan helped AQ by creating *Inspire* together with Anwar al-Awlaki. Especially when AQ's central network in Afghanistan and Pakistan took massive blows from the US military and was under immense pressure by US counterterrorism efforts (Droogan & Peattie, 2018). In 2010, Anwar al-Awlaki and Samir Khan published *Inspire* for the first time, and at the time of writing, there are 17 issues published by AQ's al-Malahem media foundation.

Inspire roughly contains four parts: the foreword by the editor, the information part, the core of the magazine (e.g., interviews, cover stories, texts written by sheiks) and an 'Open Source Jihad (OSJ)' (Dziewanowski, 2019). Throughout the magazine, different English styles are used, ranging from colloquial, formal or youth slang. *Inspire* furthermore seeks to be modern and dynamic, trying to fit into Western pop culture (Dziewanowski, 2019).

Concerning the intention of *Inspire*, a rich body of scholarly work researching *Inspire* concludes that the magazine is a combination of propaganda and practical advice to radicalise and indoctrinate readers on terrorism and terrorist activities (Reed & Ingram, 2017; Dziewanowski, 2019; Rudner, 2017; Sivek, 2013; Skillicorn & Reid, 2014). As can be read in the introduction, *Inspire* has a clear purpose: addressing English-speaking Muslims in the West and calling them to jihad. The first issue states: “Allah says (And inspire the believers to fight)” (*Inspire*, Issue 1, p.2).

Inspire sees these believers as Muslims belonging to the *ummah* dispersed around the world (*Inspire*, Issue 1). Hence, it is no surprise that more than one-third of all *Inspire* articles target recipients living in Western countries (Dziewanowski, 2019).

According to many scholars, it is pivotal to understand AQ’s aim with this specific target group because it can be directly related to lone-wolf attacks executed in the West (Droogan & Peattie, 2018; Reed & Ingram, 2017; Rudner, 2017, Sivek, 2013). In the literary debate, most researchers agree that through *Inspire*, AQ promotes jihad in general and calls for ‘Open Source Jihad’ specifically. (Rudner, 2017; Spaaij, 2015; Wiskind, 2016). This phenomenon, also known as ‘leaderless jihad’, aims to equip and train aspiring followers to get involved in terrorist acts (Rudner, 2017). When we look at published issues of *Inspire*, we see this call for leaderless jihad. From more technical articles like “How to make a bomb in the kitchen of your mom” (Issue 1, 2010, p. 33) and “Train derail operations” (Issue 17, 2017, p. 63), to “Lone jihad between strategy and tactic” (Issue 15, 2016, p. 42) and “Individual Terrorism Jihad” (Issue 5, 2011, p. 29). *Inspire* intends to incite and prepare recruits for individualised terrorism in the West. Furthermore, the OSJ-segment intends to coach readers on how to conduct violence. Especially issue 6 (published in 2011 after bin Laden’s death), issue 9 (published in 2012 after the killing of Anwar al-Awlaki and Samir Khan), issue 12, issue 13, and issue 14 feature the theme of individual jihad prominently as part of *Inspires* ‘Call to Arms’ theme (Droogan & Peattie, 2018). According to Droogan and Peattie (2018), the theme of individual jihad has increased in presence significantly since issue 9 and is often linked to successful individual jihad operations against the West.

Several investigators have connected these *Inspire* articles to terrorist plots and attacks in the West. One example is the Boston Marathon bombing in 2013, where the Tsarnaev brothers constructed a bomb by following instructions from *Inspire*. Several terrorist-plotters like Jose Pimentel, Umar Arshad, and Mohammed Sharfaraz and the perpetrators of the San Bernardino shootings in 2015 all possessed *Inspire* content. They used guidelines from this magazine to construct bombs (Droogan & Peattie, 2018, Dziewanowski, 2019). These plots

show convincing evidence on how *Inspire* increasingly appeals to aspiring lone-wolf terrorists and how this online magazine, as part of the organizations' carefully planned media strategy, can influence and incite these individuals to terrorism (Weiman, in Droogan & Peattie, 2018).

2. Lone Wolf Terrorists

2.1 Defining lone-wolf terrorism

Inspiring and equipping individuals to carry out terrorist attacks in their own country without direct funding, training or guidance became AQ's new strategy to safeguard their capability to attack the West (Droogan & Peattie, 2018). As a response to AQ's weakened position and declining training camps, this new approach maps a shift in AQ's operational and military strategy. Due to AQ's increasing weak position, AQ could no longer afford to bring in inexperienced individuals into Afghanistan to train them and subsequently transport them elsewhere. Instead, AQ started to broadcast their knowledge and experience over the Internet to aid the process of "self-financed, self-trained, and self-motivated terrorist cells" (Kohlmann, in Reed & Ingram, 2017, p. 5). Hence, the new generation of jihadis became 'home grown' terrorists, operating autonomously within fluid and informal networks and without direct ties to AQ. This decentralised and dispersed social structure is often called 'leaderless resistance' or 'individual jihad' (Reed & Ingram, 2017). Lone-wolf terrorism often falls under the umbrella term of leaderless resistance because of lacking ties to an official organization or support network.

Leaderless resistance has its' pedigree in the 1960s when former U.S intelligence officer Ulius Louis Amoss outlined the concept as a resistance strategy in case the communists would take over America (Michael, 2012). This leaderless resistance model allowed independent cells to operate without any direct command or control, and hence, infiltration or exposure became a much lesser risk. Leaderless resistance was used by a variety of movements like radical environmentalist groups, extremist right-wing groups like the Ku Klux Klan and anti-abortion movements. Lone-wolf terrorism is related to leaderless resistance by the staunch white-nationalist activist Louis Beam, who, inspired by Amoss, writes the essay *Leaderless Resistance* in which he urges to use 'phantom cells', where individuals train themselves with the necessary skills to take (often violent) action when they saw fit (Michael, 2012). Tom Metzger and Alex Curtis (two white supremacists) popularized the term 'lone wolf' in the 1990s and the past decade has seen more research been conducted to better understand the extreme violent behaviour of lone wolves (Holt et al., 2019).

Albeit the increasing interest in lone wolf typology and behaviour, research differs on the term ‘lone wolf’⁴, and some find the term “sensationalist rather than descriptive” (Schuurman et al. 2018, p. 1191). Even so, many well-known terrorism scholars differentiate between ‘loners’ and ‘lone wolves’ and argue that lone wolves often have some form of contact with extremist organizations, in contrast to loners (Gill, Horgan, & Deckert, 2014; Spaaij, 2010; Pantucci, 2011; Schuurman et al., 2018). This is an important difference because lone wolves might operate alone when executing violence, they are often not wholly loners in the radicalisation process, as demonstrated by Holt et al. (2019). Examining four cases of lone wolf terrorist attacks, Holt et al. (2019) show that in three of the four cases social ties with others (often jihadists) increased their exposure to radical beliefs. One of the cases was the Tsarnaev brothers (convicted for the 2013 Boston bombing), considered as lone wolves even though they operated together and had substantive contact with AQ (Holt et al., 2019). Research shows that the interaction point has shifted from direct contact within an AQ base to indirect contact often happening online (Spaaij, 2015). Indeed, Schuurman et al. (2018) found that 62% of their 55 studied cases of lone-actor terrorists had external contact with extremist or terrorist individuals, and 33% had social relations with leading figures of radical or extremist groups.

2.2 Lone wolf terrorists and Al-Qaeda

Whereas the notion of lone-wolf terrorism exists since 1960, the rampant use of jihadist propaganda motivating individuals to enter terrorism as a ‘do-it-yourself’ operation on the Internet is new (Reed & Ingram, 2017; Spaaij, 2010). Statistics show that many lone-wolf attacks are linked to AQ and these numbers should not be taken lightly.

A study called ‘Bombing alone’, by Gill, Horgan and Deckert (2014) found that out of 119 lone-actor terrorists convicted for their actions executed in the United States and Europe, 43% were inspired by Al-Qaeda. These individual lone wolf terrorists “operate autonomously and independently of a group” (Gill, Horgan & Deckert, 2014, p.426). Gill, Horgan and Deckert (2014) conclude that besides being predominantly male with an average age of 26

⁴ This research adopts the following definition including individuals as well as small cells as lone wolf terrorism: “The threat or use of violence by a single perpetrator (or small cell), not acting out of personal material reasons, with the aim of influencing a wider audience, and who acts without any direct support in the planning, preparation and execution of the attack, and whose decision to act is not directed by any group or other individuals (although possibly inspired by others).” Bakker and de Roy van Zuijdewijn (2015, p.9).

years old, all of the 43% lone-wolf terrorists inspired by Al-Qaeda had adopted extremist religious ideologies and almost all of them were converted before their terrorist act. This conversion to extreme Islamic religion is a form of self-radicalisation, which, as we have seen, almost always happens online.

The use of the internet and social media to access radical material, engage with like-minded individuals and receive practical information on how to conduct terrorism is relatively new (Spaij, 2015). Important here, is that engagement with the internet and social media is both multimodal and multidirectional (Spaij, 2015). Here, multimodal means that “simultaneously intersecting communication modalities” creates meaning on visual, verbal, textual and aural level, including the entire range of social online platforms (Spaij, 2015, p. 123). Multidirectional means that online influence flows from above (e.g., recruitment, provision of narratives by AQ) and from below (e.g., bottom-up engagement with like-minded individuals or self-radicalisation). Different authors agree that *Inspire* specifically addresses these lone-wolf actors in the West (Droogan & Peattie, 2018; Dziewanowski, 2019; Reed & Ingram, 2017).

Both the construction of meaning through influence from above (the media strategy of AQ) and from below (self-radicalisation through online platforms) have been discussed. However, most of the literature debate points to the role of AQ’s propaganda activities as part of their electronic jihad, paying little attention to the role of gamification in *Inspire* to inspire and motivate its readers to engage with terrorist activities. It is important to study if *Inspire* incorporates gamification techniques to address aspiring lone-wolf terrorists, since the overall corpus of this magazine intends to influence and incite these particular readers to terrorism. This part of the process, as a possible underlying mechanism of radicalisation is poorly understood and needs further research (Spaij, 2010).

3. Gamification

3.1 Defining gamification

The use of gamification has made its appearance around 2010 and is rooted in the idea of integrating gaming principles or game designs into non-game environments (Deterding et al., 2011). It aims to reach certain objectives whilst enhancing the engagement and motivation of the user. According to Deterding et al. (2011), gamification is different from other related gaming concepts in two dimensions. First, gamification only *partially* uses game elements, in contrast to toys and (serious) games, where the game element is the *whole* part of the concept. Second, gamification finds itself on the *gaming* level, where the gamification experience or concept is not just playful, but embeds elements that we also find in gaming, like rules and outcomes.

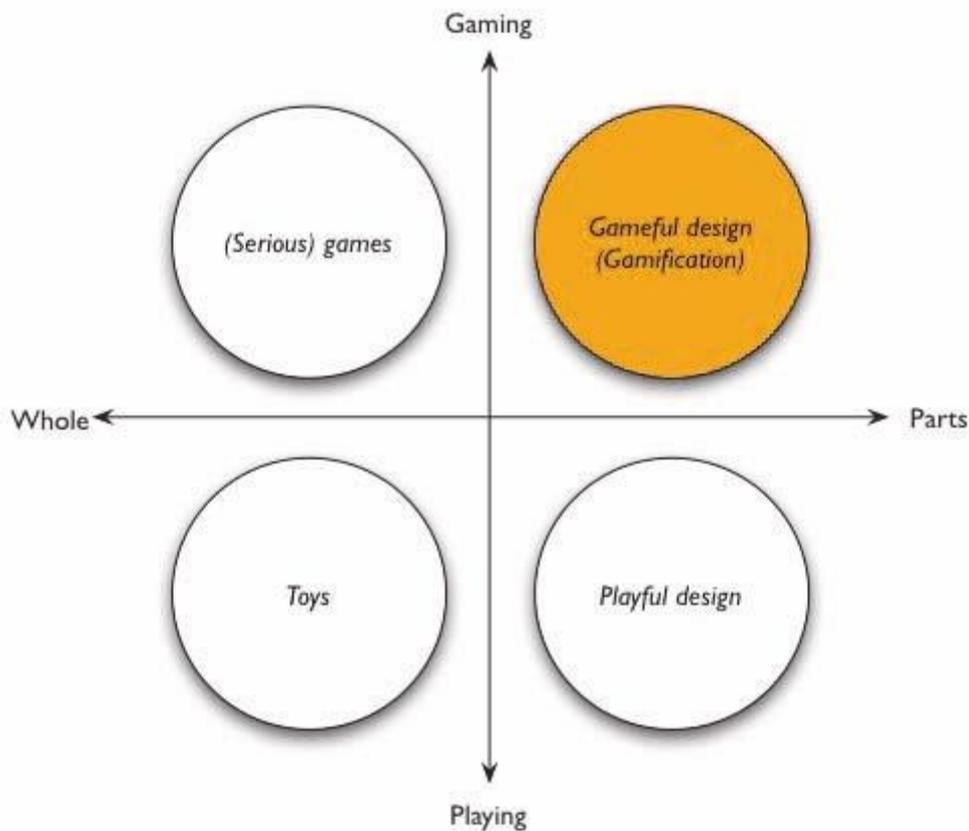


Figure 1. “Gamification” between game and play, whole and parts (Deterding et al., 2011, p. 13).

The aimed objectives can vary significantly in the sense that gamification can be used by businesses to motivate employees to accomplish business goals, or by NGOs to help people understand the complexities of social conflict in a game-like environment. It can also be used as an educational tool for enhanced academic purposes, called ‘Game Based Learning’ or as a

marketing tool to increase customer loyalty. Using game-elements outside the actual online game appeals to a broad range of users because it lies close to traditional gaming. This activity is ever more developing and expanding.

Globally, 2.5 billion people play online video games (Gough, 2019). More than 677 million active gamers play video games for more than 13 hours a week (McGonigal, 2011). It is expected that this figure will rise in the upcoming years since the gaming industry is not slowing down (Gough, 2019). According to McGonigal (2011, p.4), “computers and video games are fulfilling genuine human needs” that the real world cannot provide, because games provides rewards, brings people together and inspires people in a way that reality cannot. If the gaming industry continues at this rate, McGonigal (2011) argues that we are heading towards a society where people vigorously seek to play games and experiences its best memories and successes in game worlds.

Several studies emerged on the positive effects of moderate computer gaming like enhancing the motivation of students to complete tasks (Glover, 2013, in Kingsley & Grabner-Hagen, 2015) and complex and critical thinking (Gee, 2007, in Kingsley & Grabner-Hagen, 2015), to increased quality of friendship (Desjarlais & Willoughby, 2010). Other studies conclude that online gaming and social media use are directly related to Internet addiction, aggression and social withdrawal (Quwaider, Alabed & Duwairi, 2019). However, both strands of research conclude that playing video games impacts the players’ behaviour and emotion (Quwaider, Alabed & Duwairi, 2019).

Looking at the negative impact of video games on players’ behaviour, studies show that Massively Multiplayer Online Role-Playing Games (MMORPGs) are related to anxiety and withdrawal and when playing a violent character in these MMORPG (often fantasy) games, violence is more present in players’ real life (Strasburger et al., 2013 in Quwaider, Alabed & Duwairi, 2019). Violent video games can also lead to more aggressive behaviour because of the increase of graphic and bloody scenes and the “quality of the description of violent acts” (Barlett, et al., 2018 in Quwaider, Alabed & Duwairi, 2019, p.578). Hence, online games and violent behaviour are not always far apart. Precisely the fact that gamification can change behaviour is one reason industries are interested in using it.

3.2 MDA framework

Scholarly work immersed with gamification approach the concept of gamification via the MDA framework (Kim, 2015; Hunnicke, LeBlanc & Zubek, 2004; Robson, Plangger, Kietzmann, McCarthy & Pitt, 2015). The MDA model stands for mechanics, dynamics, and

aesthetics and unpacks the consumption of games by breaking them into three distinct components. In game design literature, these three gamification principles – mechanics, dynamics and aesthetics – are used to ‘build’ a game and to gamify a non-game context (Kim, 2015; Hunicke et al., 2004; Robson et al., 2015). These principles combined form the MDA framework, in which several game techniques together make gamification possible. The gamification principles used by game designers (mechanics, dynamics and aesthetics) correspond to the following three counterparts for someone playing the game: (a) rules, (b), system, and (c) fun (Kim, 2015).

3.2.1 Game mechanics

Mechanics (the rules) refer to the various “actions, behaviours and control mechanisms afforded to the player within a game context” (Kim, 2015, p.18). Here, the designers of gamification can set specific goals and types of interactions to which players have to abide to play the game. Examples can be *setup mechanics* which is the setting of a game (e.g., opponents, time constraints, computer-controlled allies and enemies), *rule mechanics* which determines the goal to be pursued in a gamified experience (e.g., actions a player has to undertake to reach a certain goal, effects in certain situations, rewards when accomplishing a certain level or completing a certain action) and *progression mechanics*, the feedback loop for a player to know where a players stands in relation to the goal (how successful is the player, what social standing has the player in the game community, which achievements and rewards (e.g., points, levels, scores) are attributed to the player) (Robson et al., 2015).

Combined, these game mechanics determine how to win or lose, who you are playing with or against, where the experience takes place and what players can achieve and win (Robson et al., 2015). The MDA framework describes six game mechanics which influence the motivation and engagement of the user, namely: points, levels, challenges, virtual goods, leaderboards, gifting, and charity (Mattaloui, Hanner & Zarnekow, in Stieglitz et al., 2017).

3.2.2 Game dynamics

Where game mechanics are developed by the designer, game dynamics are produced by the player. Here, the player chooses how to follow the mechanics, which shows the behaviour of the gamer. This is where tapping into the motivational drivers of individuals involved in a gamified experience comes to play. The majority of work on gamification describe six game dynamics, namely: rewards, status, achievement, self-expression, competition and altruism (Mattaloui, Hanner & Zarnekow, in Stieglitz et al., 2017; Kim, 2015; Hunicke et al., 2004;

Robson et al., 2015). For a successful gamified experience, it is important that gamification designers use and satisfy these desires by using the appropriate game mechanics.

3.2.3 Game aesthetics

Game dynamics work simultaneously with game aesthetics, also called *emotions*. The aesthetic components of a game create player experiences. While individuals playing games often call games ‘fun’, game design literature lists several aesthetic elements to appeal to different players. These elements are “sensation (game as sense-pleasure), fantasy (game as make-believe), narrative (game as drama), challenge (game as obstacle course), fellowship (game as social framework), discovery (game as uncharted territory), expression (game as self-discovery) and submission (game as pastime)” (Hunicke et al., 2004, p.1). Each game and each gamified experience focuses on multiple aesthetic goals. Thus, some gamified experiences focus more on fellowship (e.g., MMORPG games, Pandemic), while others are grounded in challenge and competition (e.g., Call of Duty, Monopoly, Fortnite).

3.2.4 A gamified experience

Together, these gamification principles form the MDA framework which can create a gamified experience (Robson et al., 2015). According to Robson et al. (2015) and Mattaloui, Hanner & Zarnekow, (in Stieglitz et al., 2017), successful gamification motivates the user towards certain behaviour and can only be achieved when several elements of all three principles are present. Hence, all game principles are interrelated and when combined well, they can result in emotional responses and behavioural change aimed for by the designer.

3.3 Gamification for behavioural change

Examining the studies engaging with this topic, gamification is primarily used to engage with the stakeholder and motivate the involved party to change their behaviour (Brachman & Levine, 2011; Owen, 2012; Robson et al., 2015). Examples of how companies use game-like attributes to engage with their customers are frequent-flier-miles by airlines allowing people to earn free flights or upgrade their flight. It can also mean receiving stars with every purchase to get a free drink or be able to compete with friends on Facebook by driving in an eco-friendly way when using a Nissan Leaf car (Brachman & Levine, 2011; Robson et al., 2015).

By tapping into reinforcements and emotions, gamification can enhance the motivational drivers of human behaviour and modify it (Robson et al., 2015). Positive, negative, intrinsic, and extrinsic reinforcements all motivate behavioural change (Skinner, in

Robson et al., 2015). External reinforcements can be rewards, status-building, or money (positive reinforcement), but also exclusion, punishment, or unsatisfying outcomes (negative reinforcements), which motivates individuals to change their behaviour (Robson et al., 2015). Using emotions (intrinsic reinforcement) also works well in a gamified experience, because pleasurable and positive emotions trigger synapses in our brain's pleasure centre, releasing dopamine in our body which makes us feel good (Owens, 2012). Hence, feelings of accomplishment, winning, success, or satisfaction in a gamified experience motivates individuals to repeat their behaviour to experience these desired outcomes (Robson et al., 2015). These feelings combined with increased concentration, competition and experienced heightened function can be addicting (Owens, 2012). Hence, gamification is not merely 'fun', but serves as a powerful tool, especially when used for recruitment and indoctrination by terrorist organizations (Owens, 2012).

3.4 Al-Qaeda and gamification

AQ and its global supporters use gamification in multiple ways. First, forums and chat rooms are flooded with gamification and gamification language, like points, level-elements and rankings. However, AQ does not use this solely to enhance participation and increase loyalty but employs this as well to arouse hatred and encourage violence (Brachman & Levine, 2011). On these hard-line Islamist sites, users are rated through 'rep power' based on the quality of their posts. The higher your 'rep power', the higher your reputation points. Your reward can be a change in the colour of your username, access to private chat groups, an avatar, or simple more 'thanks' responses from other members. Earning reputation, power or legitimacy on online Islamic extremist websites like Salafi Media encourages users to keep posting, clicking, and spending more time on these Islamist online spaces. Anwar al-Awlaki has used gamification by offering himself as the prize (Brachman & Levine, 2011).

Idolizing al-Awlaki seems to be successful, as followers compete with each other to get in to contact with al-Awlaki and collect videos and lectures of the AQ leader. Doing so, several scholars have argued that AQ has gamified following them as a terrorist organization and engaging in terrorism (Owens, 2012; Brachman & Levine, 2011).

There are several examples of lone wolf attacks that have been affiliated with AQ, like Nidal Malik Hasan (the Fort Hood shooter, killing 14 soldiers in 2009) and Faisal Shahzad, (arrested for the attempt to detonate a car bomb on Times Square in 2010). Furthermore, the Tsarnaev brothers detonated two bombs during the 2013 Boston Marathon. All three perpetrators were influenced and encouraged by both Awlaki and *Inspire* to take their virtual

would-be-jihadist identity into action (Brachman & Levine, 2011; Holt et al., 2019). Indeed, the Tsarnaev brothers frequently read *Inspire* and used the magazine to construct the bombs (Holt et al., 2019) subsequently putting *Inspires*' challenge (making a bomb) into action.

However, gamifying reality is not an invention of AQ. Before, games were used as a training tool to help prepare US soldiers to fight on the ground, now it has broadened its uses since people expect reality to match their game environment more and more (Owens, 2012). Thus, even though most users limit their extremist ideas to virtual space, gamification on Islamist online spaces for some can translate to the physical space (Brachman & Levine, 2011). Hence, it would be worthwhile analyse gamification employed in AQ propaganda critically.

3.5 Gamification language in *Inspire*

Research shows that not only the game or the graphics themselves influence players' behaviour, but also the language used in games (Ivory & Kaestle, 2013). Words like 'adventure', 'reward', 'points' and 'levels' are common words used in games that can be employed in a non-game environment. Using game-language provides AQ with a unique possibility to present their jihadi viewpoint and challenge the 'good' and 'bad guys' narrative dominating in the West (Lakomy, 2019). To understand the presence and impact of gamification language, Skillicorn and Reid (2014) mapped language patterns of *Inspire* (magazine of AQ), *Dabiq* (magazine of IS), and *Azan* (magazine of the Taliban). Skillicorn and Reid (2014) decomposed force vectors into components along x and y axes using singular value decomposition. Combined with a list of gamification language extracted from books and websites focusing on gamification, the research mapped (amongst other semantic models) the frequency of gamification language in these magazines. Tracing gamification language like 'levels', 'competition', and 'rewards', the research concludes that *Inspire* displays high levels of this semantic model, although varying from issue to issue (Skillicorn & Reid, 2014).

Skillicorn and Reid (2014) conclude that gamification language is used as a strategy in jihadist propaganda to influence the reader. Not only readers already sympathetic to the jihadist ideology are targeted, also non-jihadists living in Western countries are addressed. Gamification language can be used to radicalise and to "motivate and desensitize readers to the human consequences of violent attacks" (Reid, 2012 in Skillicorn & Reid, 2014). To do this, *Inspire* focuses on the process instead of the consequences. By using gamification

language, they can downplay the effects of violent acts whilst motivating individuals to take these actions (Skillicorn & Reid, 2014). Hence, jihadists not only try to influence readers with jihadist ideology, but also try to make them act on it (Skillicorn & Reid, 2014).

However, Skillicorn and Reid's (2014) research focuses on analysing textual components of three jihadist magazines to assess whether the magazines are used as tools for propaganda and consequently compares the magazines to one another. Hence, their research is solely concentrated on empirical quantitative examination, looking at the frequency of occurrence of certain words or word groups. Only two paragraphs are dedicated to the use of gamification in *Inspire*. No interpretation is given as to *how* AQ uses gamification, by tracing gamification techniques present in *Inspire*. This research aims to fill this gap by analysing *Inspire* textually through examining the use of game-lexicon in relation to the gamification principles as described in the MDA framework. Doing so enables this research to demonstrate if the combination of game-lexicon and gamification principles possibly present in *Inspire* are intentionally used by AQ to address lone-wolf terrorists and incite them to action. If yes, this might refer to the use of gamification by AQ.

3.6 Concluding the literature review

The literature described above points to several, mainly recent, developments. First, the increasing use of the internet by AQ as part of their online media strategy. Second, the upsurge of attention by AQ to radicalise and recruit lone-wolf terrorists in the West as part of their new military and operational strategy. Finally, the increasing deployment of online gamification by AQ to appeal to aspiring jihadists and lone-wolf terrorists and incite them to violence (Bisschop, 2011; Lakomy, 2019; Skillicorn & Reid, 2014). The minor available research on the increasing usage of gamification elements by extremist organizations like AQ makes this area of research more pressing. Hence, studying the use of gamification principles and the corresponding gamification language in *Inspire* is of crucial importance if we want to understand AQ's ability to address lone-wolf terrorists as well as further consequences; radicalisation and extremist violence.

4. Research methodology

This thesis uses a multimodal approach to understand if gamification is used in *Inspire* to address lone-wolf terrorists. First, *Inspire* is analysed concerning the use of gamification techniques by using the MDA framework. Second, *Inspire* is scrutinized by analysing the presence of game-lexicon.

4.1 Analysing the MDA framework in Inspire through the correlation matrix

This research will examine if the three gamification principles (mechanics, dynamics and aesthetics) are present in this magazine by using the gamification correlation matrix of Bunchball (2010). Bunchball (2010), has developed a correlation matrix where game mechanics and game dynamics are combined to show the interaction between the two. Game designers can drive behaviour by satisfying fundamental desires that everyone has, like desire for reward, status, achievement, self-expression, and competition (Bunchball, 2010). Satisfying these behaviours can be accomplished by applying appropriate game mechanics, enabling the desired experience (Bunchball, 2010).

Hence, the six most common gamification dynamics (rewards, status, achievement, self-expression, competition, and altruism) are interrelated with gamification mechanics. Rewards for example, gives something of value after a certain action or behaviour has occurred. In gamification, earning points (game mechanic) is the main reward mechanism, satisfying the desire to be rewarded for certain behaviour (Robson et al., 2015). Status is achieving prestige, attention or recognition from others, which is driven by all game mechanics but especially when a higher level (game mechanics) is obtained. Achievements occur when people accomplish something difficult or with great effort. Working towards a goal and then accomplishing this goal can be an achievement. Gamification taps into this desire by giving challenges (game mechanic) to overcome. Self-expression is the desire to express your identity, your uniqueness and originality. In gamification, rewards like virtual goods (game mechanic) can allow players to express themselves. Competition is the need to compare ourselves to others and the feeling of satisfaction when we do better than others. Leaderboards is the primary game mechanic used to tap into this desire, but all other mechanics stimulate this as well. Finally, altruism is the need for people to have relationships. By giving or receiving gifts, you feel like you belong to a community. In gamification,

receiving a gift can pull someone into the game in order to redeem this gift⁵. The interaction of these human desires and gameplay gives the following matrix:

Game Mechanics	Human Desires					
	Reward	Status	Achievement	Self Expression	Competition	Altruism
Points	●	●	●		●	●
Levels		●	●		●	
Challenges	●	●	●	●	●	●
Virtual Goods	●	●	●	●	●	
Leaderboards		●	●		●	●
Gifts & Charity		●	●		●	●

Figure 2. Correlation matrix of human desires and game mechanics (Bunchball, 2010, p.5).

In this matrix, the red dots demonstrate which primary human desire is fulfilled by a certain game mechanic, while the blue dots indicate other human desires affected by this game mechanic. Hence points, for example, can be used as a progression game mechanic (as described on p.19) to tap into the human desire to be rewarded but also influences the human desire for status or achievement. In the same way, using virtual goods or challenges as game mechanics fulfils the desire for self-expression.

By using the correlation matrix we can analyse if AQ taps into aspiring jihadists' desire of achievement by putting certain challenges (e.g., mission, overarching goals) to the fore in their text. Similarly, if AQ repeatedly writes about people loyal to the Islamic cause as achieving a certain level of respect, it can indicate that AQ distinguishes between certain accomplishments to appeal to the desire of status. Examining this interaction between game mechanics and game dynamics in *Inspire* will show if AQ uses these gamification principles. The table below shows the specific gamification principles, elements, and game-lexicon searched for in this research.

⁵ Analysing all game mechanics and game dynamics is outside the scope of this research. Furthermore, altruism and virtual goods are difficult to track in an offline medium. Therefore, this study will be limited to the game mechanics of points, levels, challenges, and leaderboards.

Game mechanics	Game dynamics	Game-lexicon
Challenges	<p>1. Are there <i>challenges, tasks, missions</i> or <i>goals</i> indicated for the lone-wolf terrorists which they can operationalise and complete?</p> <p>2. Do these challenges tap into the desire to feel <i>accomplished, achieve</i> something and overcome difficulties and trials?</p>	Opponent, win(ning), quest, pressure, fellowship, tasks, missions, loyalty, goals, others, obstacle, discovery, cooperation, targets, war(s), allies, failing, hunt, resilient, experience, problem.
<u>Leaderboard</u>	<p>1. Is there any form of <i>tracking</i> or <i>records (leaderboard)</i> present in Inspire, in which the lone-wolf terrorists are compared to one another?</p> <p>2. Are there certain conditions present in Inspire in order to 'win' the competition?</p> <p>3. Do these forms of <u>leaderboards</u> tap into the desire to <i>compete</i> with one another?</p>	Rank, compete, compare, track, record, <u>leaderboard</u> , example.
Levels	<p>1. Are there <i>levels</i> present in Inspire? Can lone-wolf terrorists attain a certain 'stage' and is this seen as progress?</p> <p>2. Do these levels or stages connect with the desire to have a certain <i>status</i> or <i>recognition</i>? Are lone-wolf terrorists more praiseworthy or mentioned often if they have achieved a certain level?</p> <p>3. Is there a <i>feedback loop</i> present?</p>	Ranks, progression, status, pride, achievement, ownership, competition, better, strength, victory, worthy, breakthrough, complete, accomplished.

Points	1. Are there ' <i>reward mechanisms</i> ' present in Inspire? 2. Do these reward mechanisms (in the form of points, power, praise, records or results) tap into the desire to be <i>rewarded</i> ?	Rewards, bonuses, earning, badges, praise, value, result, power, record, payoff
Narrative	Is there an <i>epic meaning</i> and greater <i>narrative</i> present in <i>Inspire</i> ? 	
Game aesthetics	Is there a goal represented in <i>Inspire</i> that taps into emotional responses of the readers (e.g., is the gamified experience represented as a challenge, a narrative or fellowship?)	

Table 1. MDA framework research questions.

In short, the presence of the MDA framework unpacked by the correlation matrix will be analysed.

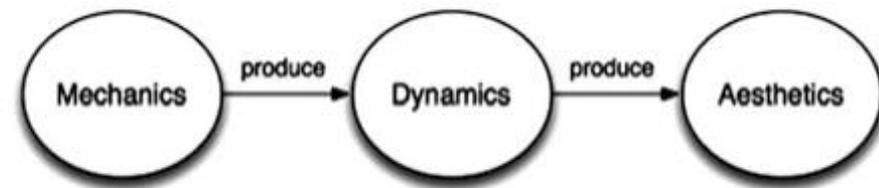


Figure 3. MDA framework (Hunicke et al., 2004)

4.2 Analysing game-lexicon through Discourse Analysis

Discourse analysis cuts various different disciplines and many sociologists and linguists have developed different philosophies around the question what discourse precisely is and how it works. Some scholars conclude that discourse only comprises the written and spoken word, while others argue that sounds and visuals are also discourses (Kress & Van Leeuwen, 2001; Fairclough, 1995). In general however, all discourse theories are concerned with examining communication practices that construct peoples' reality (Schneider, 2013). Hence, as a research method, discourse analysis tries to understand how different forms of communication, often in the form of language, is formed through generally accepted knowledge in a society, but also feeds back into society by shaping or changing such knowledge (Schneider, 2013). Language and its influence over society is, therefore, a mutually reinforced relation.

This philosophy of discourse is grounded in poststructuralism, postmodernism, and social constructivism, which argue that truth is not 'out there', waiting to be explored through scientific tools, but is constructed and reconstructed through interactions. What is therefore believed to be true in a society, depends on the exchange of ideas by members of this society and how this exchange happens (Schneider, 2013). Power relations are essential in discourse, because those who control the discourse can exercise power by shaping reality. Studying discourse in this way does not only uncover how individual opinions come to be formed (the hegemonic discourse), but also shows how discourse "influences people's mentality and prompts them to govern themselves in certain ways, a process called governmentality" (Schneider, 2013, para. 11). Hence, critical discourse analysis can illuminate, for example, the use of power relations by terrorist groups to construct a (social) reality to serve their purposes.

4.3 Critical Discourse Analysis

One particular form of discourse analysis is Critical Discourse Analysis (CDA). CDA is a 'text-only' analysis and often analyses underlying ideologies present in a text that either produces or resists dominance and inequality (Van Dijk, 1993). CDA seeks to show the "hidden effects of power" and draws on Foucault's knowledge/power nexus (Trappes-Lomax, 2004, p.139). In order to do so, CDA examines how texts at micro- (word-based) and macro (social and cultural) level impact the formation of communities and what readers believe about the world. Its primary aim, therefore, is to not only understand the social world but also transform it (Trappes-Lomax, 2004). CDA often examines a specific issue or theme to analyse

the text and give meaning to how such a text (or discourse) constructs reality. This research uses a qualitative method of discourse analysis by focusing on one theme (gamification) and how this is portrayed in *Inspire*. Doing so unveils the hidden meaning of one of AQ's key instrument (*Inspire*) to articulate their interpretation and version of reality. This, in turn, demonstrates how written texts by terrorist groups can build social communities by using specific words and phrases in order to engage them, radicalise them, and recruit them. By using power relations through language, texts can create cultures, social identities, and norms that cross national boundaries.

Conducting critical discourse analysis can be done by going through specific steps. First, the context of the source to be analysed is examined. Questions like 'Where does the source come from?', 'Who produced the source and with what intent?', 'What is the general position of the source?' and 'What specific medium does the source use to get their message across?' are answered first. These context features of *Inspire* can be found in the literature review (Chapter 1.6). Second, *Inspire* will be prepared for analysis. Additional copies were made and the material coded. Hence, all statements, phrases, and words related to certain gaming principles and their corresponding words were categorized accordingly⁶. Thus, the game mechanism 'levels' received a different code than the game mechanism 'challenges'. This research compiled a list with the most frequently used words corresponding to each game principle in order to code the material in *Inspire* correctly and draw proper conclusions (see Appendix A). Finally, the data was interpreted by tying the results together to explain if certain discourse strands in *Inspire* are related to gamification and, if so, *how* these gamification principles are engaged in the text by using specific language.

Just as in any critical discourse analysis, context is vital in this research. Only if certain words are used related to gamification principles in combination with linguistic or grammar features with the intent to steer, activate or incite individuals towards Islamic extremism can we speak of a conscious attempt to use gamification *in the context of* lone-wolf terrorism. Thus, when the word '*level*' is used in *Inspire* in the context of water (e.g., falling water levels in reservoirs due to the presence of AQ), it is highly unlikely that gamification is used. It is important to note that there will always be some form of subjectivity, for example, when identifying the important keywords or when interpreting the text.

⁶ Each game principle comprises related lexicon. The key words used in this research were selected on the basis of a gamification lexicon document retrieved from Professor D. Skillicorn and the strategy map of game mechanics by Orji, Vassileva and Mandryk (2014). The lexicon document from Skillicorn has been cleaned and reduced in order to only use gamification-related words.

4.4 Text selection

For this research, the 17 published online magazines of *Inspire* were collected from jihadology.net. The 17 copies were saved in pdf and analysed accordingly. To fit the scope of this research project, all articles belonging to the *Open Source Jihad* section in *Inspire* were analysed as well as articles specifically addressing the “lone mujahideen” (e.g., article “rulings for the lone mujahideen”, Issue 17, p.20). As argued in the literature review, these sections specifically address potential jihadists and lone-wolf terrorists in the West. This research studies if AQ targets this specific group through the use of gamification. Hence it makes sense to study these specific articles throughout the 17 published issues of *Inspire*. Doing so safeguards that the examination of gamification is *in the context* of the audience of (aspiring) lone-wolf terrorists. Appendix B provides an overview of all *Open Source Jihad* articles in *Inspire*.

5. Gamification in Inspire

The research results described below are divided in the following sections. First, an important game element, stories, will be analysed. Second, the MDA framework is scrutinised with the gamification mechanics and dynamics presented together, followed by the gamification aesthetics. Finally, the Gamification Journey Model closes this chapter⁷.

5.1 AQ's narrative: the great challenge

For any game, storytelling is an essential feature because it embeds the game into a narrative framework (whether real or imaginary), which gives meaning to the game and provides the game with a basic structure (Scheiner, Haas, Bretschneider, Blohm & Leimeister (2013), in Stieglitz et al., 2017) Doing so brings the game to life and gives sense to different in-game actions (Orji, Vassileva & Mandryk, 2014). Without a background story or call to action, game mechanics like levels or competition do not make sense. Hence, an overall goal, call to action or narrative is an important starting point for any gamification experience.

Throughout *Inspire*, AQ demonstrates that it uses the storytelling technique to get individuals inspired and possibly involved in their primary mission: restoring the Islamic rule of the Sharia and fighting the infidels and apostates (Issue 4, p. 23; Issue 5, p.26). In order to attract lone wolf-terrorists, AQ transforms their overall goal into different messages to be broadcasted to individuals susceptible to their cause. Through extreme and deceptive narratives,

⁷ Some justifications need to be made before showing the research results. First, in the context of extremist jihadist literature, the gamification principles, as explained in the literature review, are not always named accordingly. Hence, different words (or synonyms) found in *Inspire* indicated the same gamification principle as defined in gamification literature. For example, *Inspire* does not use the word 'leaderboard', to indicate the game mechanic where users can compare themselves with one another. Instead, 'fields of competition', 'records' and 'scores' were reoccurring words that often indicated the game mechanic of competition. Similar instances where different phrases or terms were found will be explained in the accompanying sections. Second, the research findings of the game mechanics and the game dynamics (human desires) are presented together because of their interrelated nature. Third, for the sake of legibility, references to *Inspire* are according to the issue and page number, hence without the name *Inspire* (e.g., Issue 1, p.1). Fourth, this research section will predominantly use the word (lone) 'Mujahideen' or 'Mujahid' besides the term lone-wolf terrorist. *Inspire* frequently addresses jihadists with the term 'Mujahideen' prior to encouraging these fighters to carry out lone-wolf terrorist attacks. Hence, this research deems it appropriate to address the potential lone-wolf terrorists, targeted by *Inspire*, by the Arabic terms as well. Finally, all quotes and phrases taken from *Inspire* are reproduced in this thesis as found in the magazine (including spelling errors), so as to abide to correct referencing.

Inspire crafts their cause into messages and ‘Open Calls’ (Issue 1, p. 54) to ask individuals to participate. Throughout *Inspire*, three main messages are propagated. First, the U.S. is the greatest enemy (a crusader) and all countries allied with the U.S. (like Israel and Europe) are oppressive and evil as well. Second, defending the Ummah is AQ’s overall purpose and a Muslims’ greatest task (Issue 5, p. 35), which needs to be fulfilled. Finally, through justification narratives, AQ invites individuals to join them in solving this ‘problem’. Here, articles with theological and jurisprudential justifications are used to justify acts of violence and terror (Issue 6, p. 55; Issue 8, p. 40). In Issue 1 (p. 54), an article with ‘Six Open Calls’ summarizes well how AQ’s main goals and missions are broadcasted to specifically address the believers and lone mujahideen to join AQ in their quest for victory over the infidels through violence.

“The 6 calls of Al-Anfal”
1. O you who have believed, when you meet those who disbelieve advancing [in battle], do not turn to them your back [in flight] [al-Anfal: 15]
2. O you who have believed, obey Allah and His Messenger and do not turn from Him while you hear [His order]. And do not be like those who say, “We have heard”, while they do not hear. Indeed, the worst of living creatures in the sight of Allah are the deaf and dumb who do not use reason [al-Anfal: 20-22]
3. O you who have believed respond to <u>Allāh</u> and to the Messenger when He calls you to that which gives <u>you</u> life. And know that <u>Allāh</u> intervenes between a man and his heart and that to Him you will be gathered [al-Anfāl: 24]
4. O you who have believed, do not betray <u>Allāh</u> and the Messenger or betray your trusts while you know [the consequence] [al-Anfāl: 27]
5. O you who have believed, if you fear <u>Allāh</u> , He will grant you a criterion and will remove from you your misdeeds and forgive you. And <u>Allāh</u> is the possessor of great bounty) [al-Anfāl: 29]
6. O you who have believed, when you encounter a company [from the enemy forces], stand firm and remember <u>Allāh</u> much that you may be successful. And obey <u>Allāh</u> and His Messenger, and do not dispute and [thus] lose courage and [then] your strength would depart; and be patient. Indeed, <u>Allāh</u> is with the patient [al-Anfāl: 45-46]

Table 2. “6 Open Calls”

5.1.1 Macro-messages: AQ's great challenge

The 'Six Open Calls' are consequently unpacked in concrete macro-messages which represent the one great challenge: killing all infidels in order to establish the rightful caliphate. Below, several examples provided demonstrate how AQ unpacks her narrative and translates it into one great challenge.

AQs great challenge
<p>"We call on every Muslim who feels any jealousy for their religious beliefs to expel the polytheists from the Arabian Peninsula, by killing all of the crusaders working in embassies or otherwise." (Issue 1, p. 5).</p>
<p>"So fight in the cause of Allāh; you are not held responsible except for yourself. And inspire the believers [to join you] that perhaps Allāh will restrain the [military] might of those who disbelieve." (Issue 1, p. 33)</p>
<p>"Those who believe fight in the cause of Allah, and those who disbelieve fight in the cause of taghut. So fight against the allies of shaytan." (Issue 5, p. 26).</p>
<p>"I would think that it's about time Muslims came together to tear down the obstacles. The most important of these obstacles today is obviously America." (Issue 2, p. 49).</p>
<p>"So the most important of the jihadi actions is the liquidation of their leaders, by murder and assassination." (Issue 5, p.32).</p>
<p>"As for our goal, it is to make the religion of Allah established on earth. Liberate Muslim lands, liberate Palestine. Remove people from being slaves of the tyrants, into worshipping Allah alone." (Issue 14, p. 15).</p>

Table 3. Great challenge in Inspire.

The great challenge is presented as an 'obstacle' that has to be overcome. The disbelievers have to fight this obstacle to reach the main goal and achieve victory. Here, the opponent is the enemy of the Islam, all apostates, disbelievers, and allies of shaytan (Satan), of which America is the greatest enemy (obstacle). The recurring main objectives of AQ throughout the magazines and calls to join jihad embed the different game mechanics and dynamics to come (e.g., challenges, rewards) in a greater story meant to appeal to individuals in the West. This great challenge, unpacked as the main narrative, is also called 'storytelling' or 'epic meaning' by gamification scholars (Stieglitz et al., 2017; Chou, 2016) and represents a core drive in gamification. This

epic meaning makes the player believe that he is chosen to take action and on a journey greater than himself (Chou, 2016). This epic meaning and special call to action are repeatedly seen in *Inspire*, for example in Issue 14, p. 59:

[...] it was your time and Allah has already chosen you. Isn't it enough an honour that Allah choose you among thousands of others who are still waiting? A humble, quiet Mujaahid who set foot to fight in the cause of Allah [...]."

Hence, we see how AQ uses the gamification technique of storytelling to articulate their main story, making clear what the main task (challenge) is, who the opponents are who are invited to AQs' call to action.

5.2 MDA Framework – Mechanics & Dynamics

5.2.1 Challenges and achievements

In order to tap into the internal drive and human desire to achieve mastery, make progress, and develop skills, challenges (i.e. tasks, goals, missions) is an important mechanic. It gives individuals the feeling that they are working towards something, putting all other mechanics in place. Without challenges, reward mechanics, levels, and competition do not make sense.

In *Inspire*, the goals set in place form part of the overall narrative and are stepping stones for lone-wolf terrorists to accomplish AQ's main goal (macro-task) as described above. Challenges are part of the rule mechanics because they determine which actions are to be pursued and which constraints come with them (Robson et al., 2015). In *Inspire*, we see a multitude of goals, missions and tasks set up for potential lone-wolf terrorists to complete, which are all related to the overall goal of AQ (defending the ummah, killing unbelievers). However, we can divide the tasks into three categories: individual challenges, operational challenges, and martyrdom challenges. This research calls these challenges micro-challenges, because through dividing the problem (the macro-challenge) into smaller challenges, AQ transforms their greater cause into manageable problems to tackle and provides the reader with a sense of ownership and control.

5.2.1.1 individual challenges

As part of AQ's call to action to solve the joint problem, AQ has set out individual micro-challenges. These individual challenges have a distinctive character from the other challenges because the individual challenges are non-violent, in contrast to the operational challenges.

Often, developing certain skills and pursuing individual Muslim obligations come to the fore in these individual challenges. The following table shows various individual tasks listed throughout *Inspire*.

<p>“My advice to my Muslim brothers in the West is to acquire weapons and learn methods of war.” (Issue 1, p.17)</p> <p>“Learn how to send and receive encrypted messages.” (Issue 1, p.41)</p> <p>“Memorize the Qu’ran.” (Issue 1, p.24)</p> <p>Prepare yourself mentally and physically for jihad (Inspire 5, p.66)</p> <p>“It is upon this Mujahid to learn the basics that should not be neglected by any Muslim. This includes tawheed, rulings on twahaara, manner of prayer, rulings on fasting and zakat and the fight of jihad (Issue 15, p.33)</p> <p>Read books of important AQ sheiks (Issue 15, p.34)</p>
--

Table 4. Individual challenges.

Throughout *Inspire*, these individual tasks are not only repeated but also placed prior to AQ’s call to action for Muslims to “rise up in defence of their Messenger” (Inspire, 1, p.17). Numerous times, this ‘unlocking-logic’ technique is present in *Inspire*. This technique is part of the ‘achievement-system’, where different goals are set in place for the player to fulfil as pre-requirements to further the macro-challenge (Stieglitz et al., 2017). For example, reading the Qur’an is not directly related to fighting infidels (macro-challenge), but is set out as a conditional micro-challenge to be able to further the main goal, which is defending the ummah. Enhancing the intrinsic motivation of the engaged individual can be done by giving autonomy to them (Pink, 2009, in Stieglitz et al., 2017). Autonomy occurs when people are in control over their activity.

AQ employs this technique by giving their readers options to choose from, giving them the feeling of being in control. The fourth and sixth individual challenges listed in table 3 demonstrate this well. In Issue 5, every mujahid is encouraged to train themselves mentally and physically, but even though some examples are given (e.g., taking courses in chemistry, weaponry and fighting), the readers are allowed to choose to prepare themselves how they see fit. The same applies to the given micro-challenge of reading books published by AQ sheiks (Issue 15, p. 34). Here, several books are promoted for the lone mujahid to “learn the basics that should not be neglected by any Muslim” (Issue 15, p. 33). By giving the choice and control

to the lone mujahid, AQ provides them a sense of ownership over their journey in jihad, motivating the reader to improve what they own (e.g., knowledge or skill) (Chou, 2016).

5.2.1.2 Operational challenges

Operational challenges are tasks set out throughout *Inspire* for the lone mujahidin directly related to violent jihad and executing attacks. These type of challenges are most prevalent in the ‘Open Source Jihad’ section and is a move forward in the path of becoming a jihadist and possibly even a martyr. Hence, where the individual jihad emphasises the call to action to trigger a reader to get involved, the operational challenges are meant to motivate the reader to undertake action and make progression in their AQ journey. When analysing *Inspire*, the magazine shows an inclination to gamify the given operational challenges and micro-tasks that come with it. The table below demonstrates two operational challenges that are gamified.

Making the hidden bomb (Issue 13)		
Process	Challenges	Gamified challenges
Preparation	Learn how to breach security measures like metal detectors, frisking and screening machines. Learn how to make a bomb from <i>Inspire</i> .	Goal: kill as many unbelievers as possible or a high profile American economist.
Logistics	Get the necessary ingredients for the: <ul style="list-style-type: none"> - Main charge - Detonator - Quick burning fuse - Explosion starter 	Challenge: accomplish the to-buy-list
Security	Buy matchsticks from different stores. Securely store your ingredients. Leave no traces.	Challenge: master your skills to outsmart security authorities.
Planning	Aviation: <ul style="list-style-type: none"> - Identify your target 	Challenge: be better than Umar Farouk and Ramzi Yousef

	<ul style="list-style-type: none"> - Choose an airport with lower security measures - Choose a long flight - Detonate the bomb at the highest altitude 	
Execution	<p>Choose from the two selected targets to detonate the bomb:</p> <ul style="list-style-type: none"> - Civil aviation - American high profile economists 	<p>Win competition: Succeed in detonating the bomb on the airplane.</p>

Table 5. From *AQs kitchen: the hidden bomb* (Issue 13, p.66).

The ultimate mowing machine (Issue 2).		
Process	Challenges	Gamified challenges
Preparation	Write a note with responsibility claim.	Outdo the Ford Hood Shooter (brother Hassan) in casualties.
Logistics	Get a 4WD pick-up truck. Get steel blades. Get access to firearms.	Challenge: complete the to-buy-list.
Security	Do the welding of the blades shortly before the attack, to not raise suspicion. Be cautious of informants.	Challenge: outsmart security authorities.
Planning	Pick location and timing carefully. Choose the most crowded area.	Challenge: plan operation and follow the guidelines set by <i>Inspire</i> .

	Study your path of operation.	
Execution	Go to “pedestrian only” location. Use as much speed as possible. Keep fighting until you reach martyrdom.	Challenge: kill as many pedestrians as possible. Seek martyrdom-status and become a hero.

Table 6. Ultimate mowing machine (Issue 2, p. 53).

These two abstracts represent many more operational challenges present in *Inspire*, where the tasks are gamified. Here, the challenges embed several gamification elements like competition with other mujahidin, social engagement and several goals set out to accomplish. Several grammar features and lexicon are in place indicating the challenges to be gamified. First, active and direct speech is used to call the reader into action. Examples are “pick up as much speed as you can”, “leave behind a note” (Issue 2, p.54), “identify your target”, and “find a long flight” (Issue 13, p. 111) These sentences guide the lone mujahid through the process of the operations. Furthermore, the word ‘target’ is used to indicate the disbelievers that need to be hit, and ‘achievement’ to indicate if the challenge was successful (Issue 13, p. 108, 110). Moreover, several rules are put in place which determine the success of the challenge (e.g., did the bomb explode, did the lone mujahid breach security, is there a clear responsibility claim?). On the other hand, AQ again leaves options open and hands over control to the reader to implement the idea in their own way (Issue 2, p. 54). Hence, the operational challenges are not vague, but they indicate precise steps and guidelines to achieve it, while leaving room for creativity for the executer.

5.2.1.3 Martyrdom challenges

Once potential lone-wolf terrorists are called to action and motivated to undertake action (e.g., training with an AK47 (Issue 6, p.47), shooting with a handgun (Issue 8, p.29)), *Inspire* challenges them to undertake martyrdom operations to serve the greater goal. In this stage, the

status and recognition of jihadists and martyrs become increasingly important, as will be discussed in chapter 5.3. Killing unbelievers and accomplishing great martyrdom operations receive a large amount of attention in *Inspire* and is driven by the human desire to feel rewarded and be recognised for certain actions and accomplishments (Bunchball, 2010). Albeit all types of challenges in *Inspire* are related to several common gamification dynamics, particularly martyrdom operations tap into gamification dynamics such as competition, rewards and status. The occurrence of these techniques in *Inspire* will be discussed separately. In the section below, several martyrdom challenges are presented.

“Hence, it should be considered a martyrdom operation. It’s a one-way road. You keep on fighting until you achieve martyrdom.” (Issue 2, p. 54).

“Embrace the mythology of martyrdom and take up arms against the infidel West.” (Issue 5, p.8).

“A mujahid is not only living in the battlefield, but has dedicated the rest of his life to gaining victory in its arena till martyrdom.” (Issue 8, p.58).

“The objective of this workshop is to communicate with those [who] seek martyrdom operations or those who want to execute a slaughter to the enemies of Islam.” (Issue 9, p. 28).

“[...] as long as you take the path of your martyred Amir: fighting Jihād against the crusader enemies and the treacherous murtadeen.” (Issue 13, p.5).

Table 7. Martyrdom operations.

5.2.1.4 The challenge gamified

As discussed in the literature review, gamification is grounded in influencing and changing behaviour (Stieglitz et al., 2017). Giving small challenges to start working towards the main goal is a great way to engage the readers of *Inspire* gradually in AQs quest. The ‘Flow State’ model of Csikszentmihalyi (1997, in Stieglitz et al., 2017) shows how gradually increasing the difficulty of the tasks to be completed in accordance with the individual’s skill involved, increases the levels of engagement. This is what AQ has skilfully crafted throughout the *Inspire* issues. Almost all issues demonstrate all three levels of challenges. The individual challenge is often portrayed as the Muslims’ individual duty and the easiest way to get involved. Next, the operational challenges are practical guides and examples of terrorist acts. Here, the to-buy lists, glossy pictures, infographics and sticky notes, together with elements of competition and different challenges to complete, transform terrorism into a ‘fun’ game to follow along. Finally,

the martyrdom operations require the highest level of skill and mental immersion of a lone mujahid. Hence, through the several types of challenges different ‘levels’ of engagement, reward and status become apparent.

5.2.2 Points and reward mechanisms

Reward mechanism is a strong gamification technique to motivate individuals to perform specific actions or behave in a certain way (Stieglitz et al., 2017). The rewarding systems in place can be as simple as points or badges but can also mean feedback, success, praise, acceptance, and more. Examining reward mechanisms in games often happens on two levels; extrinsic motivation and intrinsic motivation (Stieglitz et al., 2017). Extrinsic motivations are external motivations that are enticed from outward rewards (e.g., trophies, points, money). Intrinsic motivations originate from within and are often the place where a deeper motivation resides. Feelings of self-satisfaction, contentment with oneself, enjoyment, and self-gratification can occur as intrinsic motivations as a consequence of rewards. Robson et al. (2015) argue that a mix of both positive and negative reinforcements (extrinsic and intrinsic rewards and punishment) are crucial for a well-designed gamification experience. This means that desired behaviour is rewarded, while unwanted behaviour is punished (e.g., negative consequences, loss avoidance).

Inspires’ texts show great consistency in using reward mechanisms as both positive and negative reinforcements to influence the behaviour of the reader. There are over 45 instances where the text explicitly refers to rewards being reaped or received when fighting infidels, defending the ummah, or waging jihad. *Inspire* appears to employ two types of rewards, namely religious rewards and worldly rewards. The religious rewards are received when following the path of jihad, which can be executing jihad operations, being part of the army of the Mujahideen in the Middle East, and being “doers of good deeds” (Issue 17, p. 50). However, refraining from jihad and failing to prepare to fight results in negative consequences (Issue, 1, p. 30). The rewards with a religious nature often mention entering the highest levels of paradise, meeting Allah, and eternal pleasure in the afterlife. Relevant here is that martyrdom itself is seen as a great reward because it unlocks even better rewards in paradise. Several examples are given in the table below.

“To enter Paradise you must go through Jihad and be patient on the trials which would face you on your journey towards Allah.” (Issue 1, p. 61).

“And he who fights in the cause of Allah and is killed or achieves victory – We will bestow upon him a great reward.” (Issue 4, p. 17)

“we praised his martyrdom and saw it as a tremendous gift from Allah.” (Issue 6, p. 51)

“All of this also damages the enemy and that is a way to obtain rewards.” (Issue 8, p. 46)

“The shaheed will be granted seven rewards: he will be forgiven of his sins with the first drop of his blood, he will see his place in paradise, he will be saved from the punishment of the grave, he will be saved from the great terror on the day of Judgment, a crown will be placed on his head with jewels that are more beautiful than the earth and everything in it, he will be wedded to 72 from the hoor al-`ayn, and he will be able to intercede on behalf of 70 members of his family.” (Issue 9, 18)

“Don't you want a piece of the reward that comes with that? The Ummah is calling for you.” (Issue 12, p. 15)

Table 8. Reward mechanisms.

The worldly rewards potential lone-wolf terrorists in the West receive are less articulated in the text but operate in the background through interaction with *Inspire*. A small challenge mentioned in *Inspire* is to contact them and contribute to the magazine (Issue 1, p. 65, Issue 6, p.69). This challenge is specifically directed to Muslims living elsewhere, and the reward for reaching out to AQ is for an article submitted to be published. Although this appears to be a questionable reward, it should not be underestimated since recognition and status, facilitated by *Inspire*, is very important for AQ and the lone mujahideen. Likewise, lone-wolf terrorists in the West are praised in *Inspire* and their names and operations repeatedly mentioned. These types of worldly rewards, recognition, and praise, overlap with other gamification techniques present in *Inspire*, namely leaderboard (competition) and levels (status). One example is from Issue 9 (p.9): “It is sufficient that when you are mentioned ... all the praiseworthy actions and loftiness are also mentioned”. This reward mechanism motivates readers to pursue “praiseworthy actions” in order to be mentioned.

Inspire shows usage of reward mechanisms because the mechanisms in play are directly related to the desired behaviour. According to Robson et al. (2015), gamification is pursued when there are motivational mechanisms intentionally put in place to reward desired behaviour and punish unwanted behaviour. The examples given in table 7 illustrate how the rewards lone-

wolf terrorists can receive, are directly related to the desired action. For example, entering paradise is only possible when jihad is performed. Similarly, fighting for Allah and damaging the enemy are ways to receive rewards. There are even ways to receive double rewards. Lone-wolf terrorists who are killed by “people of the books” (Christians, Jews or Sabians) will receive the rewards of two martyrs (Issue 9, p. 22) and Allah is asked to double the rewards of lone-wolf terrorists in the west (Issue 16, p. 2). On the other hand, negative reinforcements serve as a vehicle to punish unwanted behaviour (Issue 1, p. 30, Issue 16, p. 15). These positive and negative reinforcements show how AQ rewards those responding to the call of action and completing challenges and, in doing so, further engages the reader in their journey of jihad.

5.2.3 Leaderboard and competition

Competition is one of the basic human needs (Thiebes et al., in Stieglitz et al., 2017) and can be used as a successful gamification dynamic to increase motivation and engagement. This increased engagement and motivation often leads to higher performance levels when setting in a competitive environment (Bunchball, 2010). Leaderboards are an effective way to display results, show winners and losers and display which levels and rewards are achieved and hence, taps into the desire to compare our performances to other players’ performances (Bunchball, 2010). This gamification technique is often transformed into a type of progress indicator, like a high-score-table, a leaderboard, or track-display.

Inspire shows high usage of competition amongst the mujahideen through textual references. Common gamification lexicon in the context of competition are words like winning, losing, progress, examples, scores, competition, results, record and race (see p. 26) Numerous phrases and paragraphs in *Inspire*, directed to the lone mujahideen, refer to these words and direct the lone mujahideen to “the fields of competition” (Issue 2, p. 64) and urge them to compete with other “heroes” in the battlefield (Issue 4, p. 17). AQ taps into the desire to compete with one another and achieve heroism in the eyes of other AQ followers by setting certain jihadists and martyrs as examples and heroes on the one hand while speaking of losers and failures on the other hand. Doing so motivates the reader to join AQ in their jihad journey in two ways. First, positive reinforcements are given to potential lone-wolf terrorists by pointing them towards the attractive sides of waging jihad by repeatedly acknowledging and praising Muslims brothers who have executed terrorist operations. These “noble fighters” and “great leaders” (Issue 6, p. 7) are set as role models and receive high ranks in AQ. Writing down their names in *Inspire* and recording their actions in the magazine, demonstrates that their achievements and ‘scores’ are applauded and remembered, encouraging others to reach this

stage too. Indeed, in almost all *Inspire* issues, martyrs, leaders and loyal soldiers are celebrated as heroes and their deeds mentioned, allowing them to gain status and reputation (e.g., Issue 4, p. 7, Issue 4, p. 17; Issue 5, p.28; Issue 6, p. 17; Issue 8, p. 8-17; Issue 9, p. 16; Issue 10, p. 4; Issue 12, p. 56; Issue 14, p. 13; Issue 17, p. 11). Second, negative reinforcements are given by picturing the enemy (e.g., America) and slackers (people who do not join jihad) as losers (Issue 2, p. 65). By using rhetorical figures, *Inspire* equates certain states (e.g. America, Israel and France) and non-jihadists with losers, while mujahideen are pictured as “the caravan of champions” (issue 2, p. 65). This black-white relation, in turn, shapes AQ’s argument that because apostates, infidels and deserters are the enemies, they are losing the battle (Issue 9, p. 22; Issue 12, p. 39), while AQ will attain victory (Inspire 17, p. 14). Only by joining other lone mujahideen, will a potential lone wolf terrorist find himself on the winning side. Contrarily, wrongdoers and traitors will receive their book of deeds and be judged for it (Issue 4, p. 63).

Hence, competing with others will not only prevent one from getting punished but will also be rewarding, since a great fighter will be envied by others (Issue 5, p, 22) and recorded in the history books (Issue 6, p. 50). The game dynamic of competition is well illustrated in Issue 17 (p. 17), where a scoreboard is mapped out, analysing several lone jihad operations, where the killings, strengths, and weaknesses of the lone jihadists are measured out and compared.

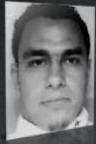
ANALYZING LONE JIHAD OPERATIONS				
	 ORLANDO OPERATION	 NIECE OPERATION	 9/17 OPERATIONS	 WESTMINSTER OPERATION
Country	America	France	America	Britain
Name of Executor	Umar Sideeq Mateen	Muhammad Al-Huwayj	Ahmad Khan Raheemy & Dahir A'dan	Khalid Masoud
Target Priority	First Priority.	Third Priority.	First Priority.	Second Priority.
Inspire Guide Edition	1 st	2 nd	4 th	5 th
Means of Targeting	Firearm	Truck & Firearm	Explosives & Knife	Car & Knife
Fatalities	50	84	---	5
Strengths	<ol style="list-style-type: none"> Using means available at hand. Simple Operation Operation was performed on an enclosed area, thus favouring taking hostages. Killed many of the trapped hostages, due to the enclosed space. The executor was proficient in using firearms. 	<ol style="list-style-type: none"> The executor used a new means to execute the operation, and thus had the element of surprise. His means of execution resulted many fatalities. He incorporated two means of an act: ramming a truck in the crowd & a firearm. Selected appropriate place and time for the operation. Prepared his operation well. 	<ol style="list-style-type: none"> Many operations were performed on the same day. The operation occurred immediately after the 9/11 remembrance ceremony. Used explosives as a weapon to terrify the enemy. In Minnesota, the executor's cover was well chosen - dressed as a police officer. 	<ol style="list-style-type: none"> He used the weapon which was readily available at hand. He had courage and strong-will. Chose a place where the authority of the country is found.
Weaknesses	Targeting a specific group of people, this deviates from the actual intended message from the operation.	---	<ol style="list-style-type: none"> The bomb was not placed in an area where it could have inflicted great damage to the enemy. The aftermath of the operation was not properly planned. 	Executing both operations at the same time ... It could have been that the ramming operation on the bridge could have jeopardized the operation in parliament.

Figure 4. Leaderboard in *Inspire* (Issue 17, p. 17).

The table below illustrates various examples in *Inspire* where competition is used as a game dynamic.

<p>“The different branches have good competition in fighting the Americans and their allies. All of them want to win the race of destroying the idol (i.e., America) and to have the greatest share in that effort.” (Issue 1, p. 14).</p> <p>“Almost no mujahid goes forth to the fields of competition without passing through this stage of indecision and lingering.” (Issue 2, p. 64)</p> <p>“Oh, I wish I had not been given my record! And had not known what is my account. I wish it [i.e., my death] had been the decisive one [i.e., the end of life and not a gateway to eternal life].” (Issue 4, p. 63)</p> <p>“If history recorded the great stand of <u>Mu'tasim</u>, why won't it write down the great stands of our Al-Qaeda leaders.” (Issue 10, p. 34)</p> <p>“A small operation could surpass the biggest operation you can think of in <u>Ajr</u> (reward).” (Issue 10, p. 57)</p> <p>“The men heard of them and wished to emulate. The heroes heard of them from far and wished to achieve what they achieved.” (Issue 14, p. 35)</p>
--

Table 9. Competition in *Inspire*.

By tapping into the natural human desire to compete with one another for status and recognition, AQ enables mobilization of potential sympathisers to pick up their weapons and join their call for jihad. Where competition is first most triggered by leaderboards and rankings, it also taps into the desire of status, which is the main element of the following gamification technique; levels.

5.2.4 Levels and recognition: the feedback loop

Just as leaderboards, can levels increase competitiveness in a gamified environment because it indicates a users' performance, and hence, comparison with other players becomes possible (Scheiner et al. in Stieglitz et al., 2017). As a gamification mechanic, levels are either used as sections, where micro-challenges divide the different sections of a game, while the level of difficulty remains constant, or as stages, where the difficulty of the game increases with every stage (Scheiner et al., in Stieglitz et al., 2017). Besides competition, levels mainly pick up on people's longing for social acceptance, envy, and social feedback (Chou, 2016). A great way to receive this is by gaining status or reputation. This gamification dynamic of status is, in turn, encouraged by incorporating levels or stages for the player to reach out to and achieve. Levels

are therefore an ideal gamification mechanic to get individuals involved and motivate them to stay engaged, because to reach the desired prestige and recognition, people need to respond to the call of action and immerse themselves with the given challenges, to receive the desired respect and status by others (Stieglitz et al., 2017).

A vital game element that needs to be embedded in levels to achieve gamification is the feedback loop. A feedback loop is a positive or negative reaction to a certain action taken. The better, faster, or stronger the action, the better (social) feedback a player gets, which is often levelling up or receiving a higher status. Negative feedback can be given when a player neglects the game or performs poorly, reducing his status, or taking away rewards. Hence, the feedback loop, as part of levels is pivotal to motivate the player to change his behaviour when needed through giving continuous feedback (Liu, Alexandrova & Nakajima, 2011).

5.2.4.1 *The four phases of a player's journey in Inspire*

A short examination of a player's journey is given to understand how *Inspire* implements levels and the feedback loop. Chou (2016) offers four phases of a player's journey, which begins with discovery. In this phase, the player gets introduced to the epic meaning of the game and is called to participate. In the second phase named 'onboarding', the player gets to understand the rules of the game and the mechanics, and becomes familiar with the tools. Here, players are trained on how to use the game and are ready to continue on their journey alone. 'Scaffolding' is the third phase, where the players use all the learned rules and equipment to master the game and achieve as many rewards and levels as possible. The player is very engaged and has attained a high status. The final stage is the 'endgame', where players have done "everything there is to do at least once" (Chou, 2016). In this phase, the game either finishes or the player sticks around in order not to lose all their rewards, badges and points.

Similarly, *Inspire* offers potential sympathisers these four phases and transforms them into four stages (i.e. levels). The first level is for individuals eager to join AQ and jihad. These beginners have to learn Islam according to *ahl as-Sunnah* (Issue 2, p. 44), memorize the Quran (Issue 1, p. 24) and learn about jihad (Issue 5, p. 66). When they have discovered this true calling, they can level up and become a mujahideen. As a fighter for the cause of Allah, they are now 'on board' and can become experts in the use of tools. In this phase, they can improve their knowledge and skill by following the footsteps of Muslim brothers more experienced than them (Issue 17, p. 14). If they become experts in making bombs, buying handguns or outsmarting security, they can operationalise their skills and become masters. Masters are those mujahideen who have operationalised jihad and receive status and prestige. Examples of these

masters are Faisal Shahzad (Times Square bomber), Nidal Hasan (Ford Hood shooter), and Umar Farouk (Underwear bomber). This third phase comes with high status and prestige, because reaching the level of mujahidin is a great success, even if you get arrested, like Roshonara Choudry and Nidal Hasan (Issue 5, p. 12). Similarly, Khalid Sheikh Muhammed is seen as the “mastermind” behind the 9/11 attacks (Issue 15, p. 35) and Naser Jason Abdo as a hero (Issue 8, p. 8). However, the highest level to attain is that of a martyr. Martyrdom is the final stage of AQs journey of jihad and the endgame for those striving for the “highest levels of paradise” (Issue 1, p. 33). Martyrs like Abu Ayman al-Masri and Samir Khan are praised for reaching the status of martyrdom, which is seen as “one of the two best things” (Issue 9, p. 22). Indeed, *Inspire* does differentiate in rank, status, and levels for ‘Muslim brothers’ to achieve.

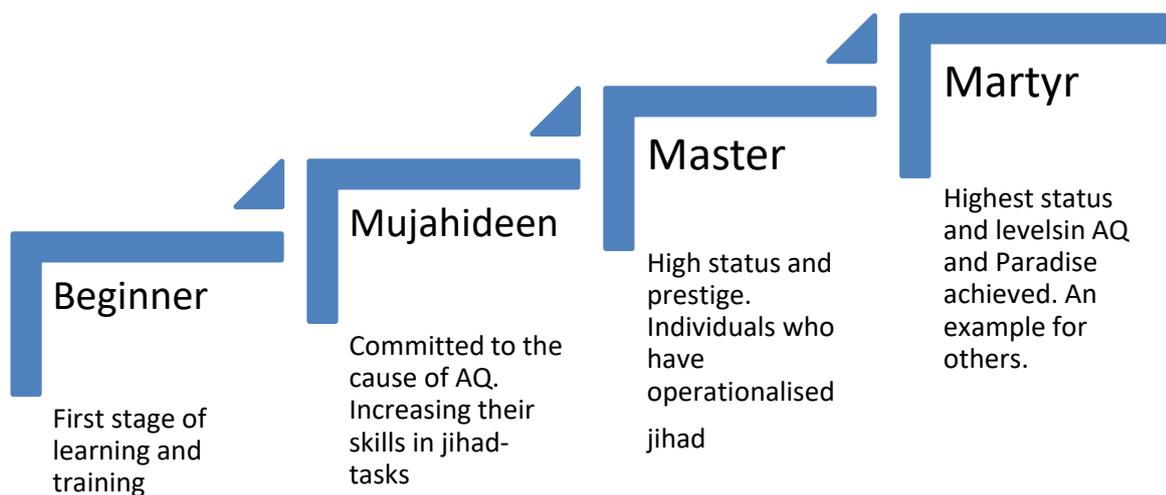


Figure 5. Staircase of status in *Inspire*.

The table below provides some examples of how levels are introduced in *Inspire* related to status and prestige, both on the level of heroic mujahideen, as well as differences in levels of operations and successes.

<p>“So who among us would want anything different to what the greatest of mankind <u>صلى الله عليه وسلم</u> desired for himself three times, even though he is the owner of the highest status in paradise.?” (Issue 4, p. 28)</p> <p>“We ask Allah <u>subhanne we te’alla</u> to raise <u>Abdur-Rahmaan Al Awlaki</u> to the highest status of <u>shuhada</u>.” (Issue 9, p. 20)</p> <p>“There are a hundred levels in Paradise specially prepared by Allah for the mujahideen in His cause. Between each level and the next is the difference between the heaven and earth. And how many levels are reserved for those who prefer sitting on their hands than breaking the back of the enemies of Allah?!”(Issue 9, p. 53)</p> <p>“Allah has prepared great rewards and high status in Jannah for those who perform Jihad with pure intentions.” (Issue 10, p.40)</p> <p>“The Blessed Boston Bombings (BBB) have been an absolute success on all levels and domain.” (Issue 11, p. 19)</p> <p>“Accomplished with high precision and excellence, passing through the stages and steps of a successful assassination operation. Making it succeed in an exceptional level”. (Issue 14, p. 41).</p> <p>“We ask Allah to accept him and raise his status among martyrs.” (Muhammed Abdul <u>haziz</u>) (Issue 14, p. 55)</p>
--

Table 10. Status in Inspire.

Besides mentioning different levels of skills, ranks and status of individuals, *Inspire* also gamifies their Open Source Jihad terrorist school by levelling the challenges as easy (Issue 10, p. 51) or average (Issue 8, p. 32), dividing OSJ operations into different stages and levels (Issue 14, p. 64) and reviewing methods of jihad by their level of success or failure (Issue 1, p. 48-53). The levelling of challenges as easy, average or hard and the differentiation in status and prestige including leaderboards, ensures the reader to know where he stands in relation to others, creating a feedback loop.

5.3 MDA Framework – Aesthetics

The final element of the MDA framework is game aesthetics. The aesthetic components of a game are the emotional responses triggered in players interacting with the game (Robson et al., 2015). Evoking emotional responses in people interacting with a game is important because it increases their motivation and engagement (Hunicke et al., 2004).

1. Sensation <i>Game as sense-pleasure</i>	5. Fellowship <i>Game as social framework</i>
2. Fantasy <i>Game as make-believe</i>	6. Discovery <i>Game as uncharted territory</i>
3. Narrative <i>Game as drama</i>	7. Expression <i>Game as self-discovery</i>
4. Challenge <i>Game as obstacle course</i>	8. Submission <i>Game as pastime</i>

Figure 6. Gamification aesthetics.

Games typically pursue one or two of these aesthetics as the main gameplay element which makes the game ‘fun’ for the player (Hunicke et al., 2004). Hence, game-designers first most focus is to select the appropriate game mechanics and dynamics to appeal to the player’s emotions, while for the player, the emotional experience is the game element he or she notices (Robson et al., 2015). Therefore, aesthetics represent the goal towards which a gamified experience works.

Inspire incentivises readers’ emotional responses by transforming violent jihad into a game-like adventure in which Challenge (game as obstacle course) and Narrative (game as drama) are the two most important aesthetic features. Assigning readers tasks to complete, including playful questions such as “how many ingredients can you find in your kitchen” (Issue 1, p. 33) makes following AQ an obstacle course and a great adventure to undertake. Through placing the challenges in a bigger narrative, AQ turns their call to action into a playful epic meaning, blurring the boundaries between real and fake.

5.4 The Gamification journey of *Inspire*

Applying the above-examined gamification techniques from the MDA-framework to *Inspire* shows that a gamification loop is present. The idea of a gamification loop is to arrange the different game principles in a certain way to drive user engagement and motivation (Liu, Alexandrova & Nakajima, 2011). A gamification loop is an iterative process and starts with challenges accompanied by specific conditions for winning. When goals or challenges are achieved, the user gets rewarded. Based on achievements, leaderboards are created to compare the players and drive competition. Tracking records and achievements on leaderboards leads to different levels, representing the position and status a player enjoys, providing a feedback loop.

With the data on gamification techniques present in *Inspire*, we can draw a gamification

'loop', presented here as a possible gamification journey a reader and possible lone-wolf terrorist goes through. Through the gamification journey, it becomes clear that all gamification principles from the MDA framework are present in *Inspire* and are consciously built-in tools to address Muslim brothers in the West to encourage these individuals to turn to lone-wolf terrorism.

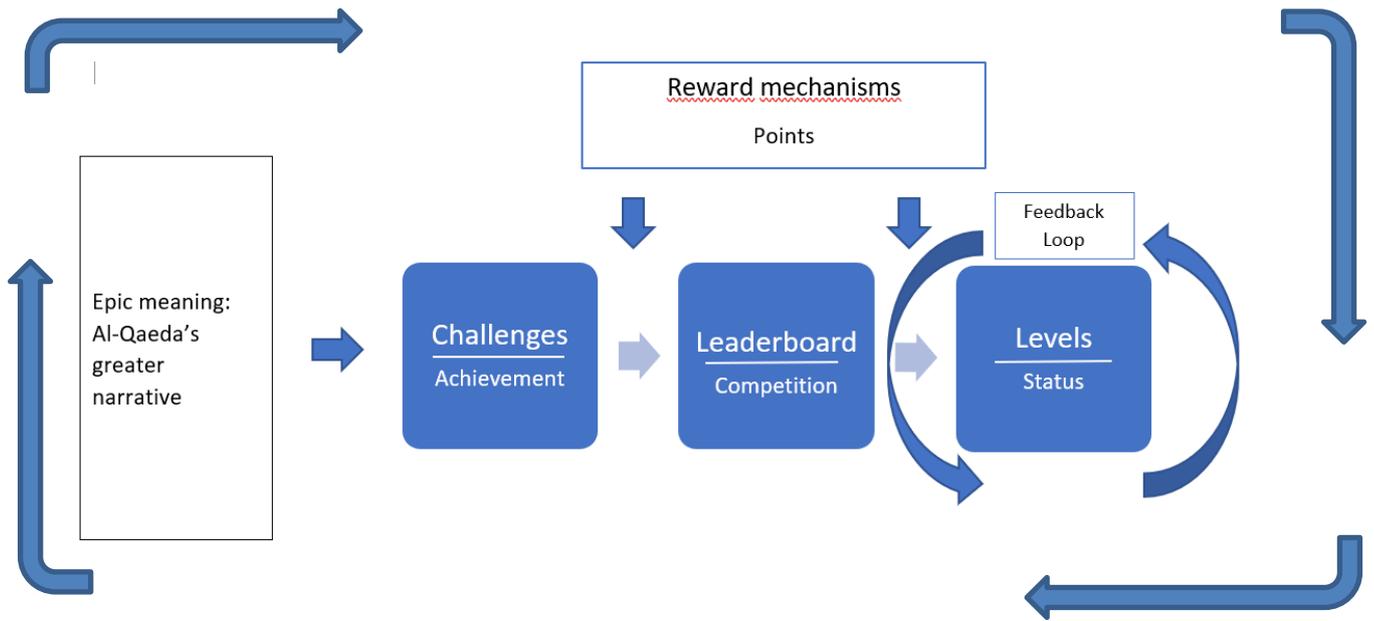


Figure 7: AQ's gamification journey.

6. Conclusion

This research aimed to examine the role of gamification in AQ's magazine *Inspire* as a tool to address, inspire, and incite (potential) lone-wolf terrorists to join AQ's call for jihad. With self-radicalised lone-wolf attacks increasing in the West and the threat of this lone-wolf terrorism extremely difficult to prevent by counterterrorism organisations and intelligence communities, it is essential to examine and unveil incentivising structures present in terrorist organisations' propaganda. This study has sought to do so by analysing the presence and use of gamification principles in *Inspire*. By driving user engagement and behavioural change, gamification is a powerful and intriguing tool when designed in the right way. The limited available research in this area demonstrates that AQ incorporates gamification both online and offline. However, little to no qualitative research exists on the application of gamification principles in AQ's widely disseminated magazine *Inspire* to address one of AQ's main target groups; Muslim brothers in the West.

In order to answer the research question of how AQ uses gamification in *Inspire* to address these Muslim brothers in the West and possibly incites them to lone jihad terrorism – consequently turning these Muslim brothers into lone-wolf terrorists – this study employed critical discourse analysis on the English-language magazine *Inspire*. By tracing the gamification principles from the well-known MDA framework and the corresponding game-lexicon, this research analysed the extent to which AQ used gamification in the magazine. As such, this research aims to make a scholarly contribution in two ways. First, the study adds to the very limited academic literature on the use of gamification techniques in terrorist propaganda like *Inspire*. Second, the research findings contribute to knowledge of AQ's incentivising strategies to address lone-wolf terrorists and drive lone-wolf terrorism.

The study results show that every gamification principle from the MDA framework is present in *Inspire*, and is directed to the reader to steer him towards lone-wolf terrorism. Throughout *Inspire*, AQ gamifies their narrative and tasks, creating a gamification loop where all elements of the MDA framework are present. Assigning challenges to complete with the necessary rules and conditions for winning, encouraging competition through incorporating elements of leaderboards like keeping records and recording achievements of fellow Muslim brothers, differentiating mujahideen on different levels according to their deeds to motivate their strive for status and recognition, and mentioning rewards when accomplishing tasks and levels are all present in *Inspire*. Hence, we can conclude that AQ uses gamification to address potential lone-wolf terrorists. Driven by extreme Islamist ideology, AQ subtly guides the

S2375974

reader on the path of jihad, making self-radicalisation and the process of becoming a lone-wolf terrorist an easy to follow and a playful journey.

Bibliography

Ahmed, S. (2020). *The 'War on terror', state crime & radicalization: A constitutive theory of radicalization*. New York, US: Springer International Publishing.

Atwan, A. B. (2006). *The secret history of Al Qaeda*. London, UK: Saqi Books.

Bermingham, A., Conway, M., McInerney, L., O'Hare, N., Smeaton, A. F. (2009). Combining social network analysis and sentiment analysis to explore the potential for online radicalization. *Advances in Social Networks Analysis and Mining*. DOI: 10.1109/ASONAM.2009.31

Bloom, M., Horgan, J. & Winter, C. (2016). Depictions of children and youth in the Islamic state's martyrdom. *CTC Sentinel*, 9(2), 29-34.

Bouhana, N. & Wikström, P. H. (2011). Al Qa'ida-influenced radicalization: a rapid evidence assessment guided by situational action theory. *Department of Security and Crime Science, Occasional Paper 97*. Retrieved from: <https://www.gov.uk/government/publications/al-qaida-influenced-radicalisation-a-rapid-evidence-assessment>

Brachman, J. & Levine, A. (2011, April 13). The world of holy warcraft. How al Qaeda is using online game theory to recruit the masses. Retrieved from: <https://foreignpolicy.com/2011/04/13/the-world-of-holy-warcraft/>

Bunchball.Com (2010). Gamification 101: an introduction to the use of game dynamics to influence behavior. Retrieved on 14 May 2020 on: <https://www.bunchball.com/gamification101>

Chou, Y. K. (2016). *Actionable gamification. Beyond points, badges and leaderboards*. Columbia, Canada: Leanpub Publishing.

Council of the European Union (2002). Council framework decision of 13 June 2002 on combatting terrorism. *Official Journal of the European Communities*, L164/3.

Desjarlais, M. & Willoughby, T. (2010). A longitudinal study of the relation between adolescent boys' and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis? *Computers in Human Behavior*, 26(5), 896-905. DOI:10.1016/j.chb.2010.02.004

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. *MindTrek '11, Conference Paper*, 9–15. DOI: 10.1145/2181037.2181040

Droogan, J. & Peattie, S. (2018). Reading jihad: Mapping the shifting themes of *Inspire* magazine. *Terrorism and Political Violence*, 30(4), 684-717, DOI: 10.1080/09546553.2016.1211527

Dziewanowski, J. (2019). AQAP Inspire magazine as a tool motivating terrorist activities. *Przegląd Bezpieczeństwa Wewnętrznego*, 11(20), 339 – 352.

Fairclough, N. (1995, 1st ed.). *Critical discourse analysis: the critical study of language*. New York, US: Longman Publishing.

Geeraerts, S. B. (2012). Digitalization of youth. *Social Cosmos*, 3(1) 25-32.

Global Web Index (2018). *Flagship report on the latest trends in social media*. Retrieved from: <https://www.globalwebindex.com/reports/social-h1-2018>

Gill, P., Horgan, J. & Deckert, P. (2014). Bombing alone: tracing the motivations and antecedent behaviors of lone-actor terrorists. *Forensic Science*, 59(2), 425-435. DOI: 10.1111/1556-4029.12312.

Global Web Index (2018). *Flagship report on the latest trends in social media*. Retrieved from: <https://www.globalwebindex.com/reports/social-h1-2018>

Gough, C. (2019, August 9). Number of video gamers online 2014-2021. *Statista*. Retrieved from: <https://www.statista.com/statistics/748044/number-video-gamers-world/>

Gunaratna, R. (2002). *Inside Al Qaeda: Global network of terror*. New York: Colombia University Press.

Hamblet, M. (2017). The Islamic's state virtual caliphate: Jihad in the West. *Middle East Quarterly*, 24(4), 1-8. Retrieved from: <https://www.meforum.org/6894/the-islamic-state-virtual-caliphate>

Heickerö, R. (2014). Cyber terrorism: Electronic jihad. *Strategic Analysis*, 38(4), 554-565. DOI: 10.1080/09700161.2014.918435

Helfstein, S. (2012). Edges of radicalization: Ideas, individuals and networks in violent Extremism. *The Combating Terrorism Center at West Point*. Retrieved from: <https://www.jstor.org/stable/pdf/resrep05592.pdf?refreqid=excelsior%3Af206f55521f8b40d43edf5701c6789cc>

Holbrook, B. D. (2014). *The Al-Qaeda doctrine: the framing and evolution of the leadership's public discourse*. New York: Bloomsbury Academic

Holt, T. J., Freilich, J. D., Cherman, S. M., Mills, C., Silva, J. (2019). Loners, colleagues or peers? Assessing the social organization of radicalization. *American Journal of Criminal Justice*, 44(1), 83-105. DOI: 10.1007/s12103-018-9439-5

Hunicke, R., LeBlanc, M., & Zubek, R. (2004). MDA: A formal approach to game design and game research. *Proceedings of the Challenges in Game AI Workshop, Nineteenth National Conference on Artificial Intelligence*.

Ivory, A. H. & Kaestle, C. E. (2013). The effects of profanity in violent video games on Players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224 – 241. DOI: 10.1080/08838151.2013.787078

Jenkins, B. M. (2007) Building an army of believers. jihadist radicalization and recruitment (Technical Report No. ADA465567). Retrieved from RAND cooperation website: <https://apps.dtic.mil/docs/citations/ADA465567>

Kim, B. (2015). Understanding gamification. *Library Technology Report*, 51(2), 5-35.

Kingsley, T.L. & Grabner-Hagen, M. M. (2015). Questing to integrate content knowledge, literacy, and 21st-century learning. *Journal of adolescent & adult literacy*, 59(1), 51-61. DOI: 10.1002/jaal.426

Kress, G. R. & Van Leeuwen, T. (2001). *Multimodal Discourse: The modes and media of contemporary communication*. London, UK: Bloomsbury Academic.

Lakomy, M. (2019). Let's play a video game: Jihadi propaganda in the world of electronic entertainment. *Studies in Conflict and Terrorism*, 42(4), 383 – 406.

Liebermann, J. & Collins, S. (2008). Violent Islamist extremist, the internet and the homegrown terrorist threat. *United States Senate Committee on Homeland Security and Governmental Affairs*. Retrieved from: <https://www.hsdl.org/?abstract&did=485776>

Liu, Y., Alexandrova, T. & Nakajima, T. (2011). Gamifying intelligent environments. *Ubi-MUI '11: Proceedings of the 2011 international ACM workshop on Ubiquitous meta user interfaces*, 7-12. DOI: 10.1145/2072652.2072655

Malthaner, S. (2017). Radicalization. The evolution of an analytical paradigm. *European Journal of Sociology*, 58(3), 369-401.

Mattaloui, A., Hanner, N., & Zarnekow, R. in Stieglitz, S., Latteman, C., Robra-Bissantz, S., Zarnekow, R., Brockmann, T. (Eds.) (2017). *Gamification. Using game elements in serious contexts*. Cham, Zwitterland: Springer.

McCauley, C., & Moskalenko, S. (2012). Recent US thinking about terrorism and counterterrorism. *Terrorism and Political Violence*, 22(4), 224–245.

McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world*. New York, NY: Penguin Press.

Michael, G. (2012). *Lone wolf terror and the rise of leaderless resistance*. Nashville, Tennessee: Vanderbilt University Press.

Orav, A. (2015). Religious fundamentalism and radicalization. *European Parliament*. Retrieved from European Parliamentary Research Service Blog website: <https://epthinktank.eu/2015/03/18/religious-fundamentalism-and-radicalisation-a-documentary-overview/>

Orji, R., Vassileva, J., Mandryk, R. L. (2014). Modeling the efficacy of persuasive strategies for different gamer types in serious games for health. *User Model User-Adap Inter* 24, 453–498 DOI 10.1007/s11257-014-9149-8

Owens, M. D. (2012). It's all in the game: Gamification, games and gambling. *Gaming Law Reviews and Economics*, 16(3), 114-118.

Pantucci, R (2011). A typology of lone wolves: Preliminary analysis of lone Islamist terrorists. *Developments in Radicalization and Political Violence*, 44-45.

Perešin, A. (2014). Al-Qaeda online radicalization and the creation of children terrorists. *Zaprimljeno. Svibnja*, 20(1), 85-100.

Quwaider, M. Alabed, A. & Duwairi, R. (2019). The impact of video games on the players behaviors: A survey. *Procedia Computer Science*, 151, 575-582. DOI: 10.1016/j.procs.2019.04.077

Reed, A. & Ingram, H. (2017). Exploring the role of instructional material in AQAP's *Inspire* and ISIS' *Rumiyah*. *Europol Report*.

Reed, H. (2019). 5 Brands using gamification to drive shopping. Retrieved on June 4, 2020 on: <https://thecurrentdaily.com/2019/07/11/5-brands-using-gamification-to-drive-shopping/>

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., Pitt, L. (2015). Is it all a game? Understanding the principles of gamification. *Business Horizons*, 58(4), 411-420.

Rogers, A. E. (2017). Children and extreme violence. Viewing non-state armed groups through a brand marketing lens: a case study of Islamic State. *United Nations University*. Retrieved from: <https://collections.unu.edu/view/UNU:6292>

Rudner, M. (2017) "Electronic Jihad": The Internet as Al Qaeda's Catalyst for Global Terror, *Studies in Conflict & Terrorism*, 40:1, 10-23, DOI: 10.1080/1057610X.2016.1157403

Sageman, M. (2017). *Turning to political violence. The emergence of terrorism*. Philadelphia, US: University of Pennsylvania Press.

Scheiner, C., Haas, P., Bretschneider, U., Blohm, I. & Leimeister, J. M., in Stieglitz, S., Latteman, C., Robra-Bissantz, S., Zarnekow, R., Brockmann, T. (Eds.) (2017). *Gamification. Using game elements in serious contexts*. Cham, Zwitserland: Springer.

Schneider, F. (2013, May 13). How to Do a Discourse Analysis. *Politics East Asia*. Retrieved from: <http://www.politicseastasia.com/studying/how-to-do-a-discourse-analysis/>

Schuurman, B., Bakker, E., Gill, P., Bouhana, N. (2018). Lone actor terrorist attack planning and preparation: a data driven analysis. *Journal of forensic sciences*, 63(4), 1191-1200, DOI:10.1111/1556-4029.13676

Skillicorn, D. B. & Reid, E. (2014). Language use in the Jihadist magazines Inspire and Azan. *Security Informatics*, 3(9), 1-16.

Spaaij, R. (2010). The enigma of lone wolf terrorism: An assessment. *Studies in Conflict & Terrorism*, 33(9), 854-870, DOI: 10.1080/1057610X.2010.501426

Spaaij, R. (2015). Lone actors – an emerging security threat. *NATO Science for Peace and security Series E: Human and Societal Dynamics*, 123, 120 – 131.

Trappes-Lomax, H. (Ed.). (2004). *The handbook of applied linguistics*. Hoboken, NJ: Blackwell Publishing.

Ungerleider, N. (2011). Welcome to jihadville. *Fast Company*. Retrieved from: <https://www.fastcompany.com/1749266/welcome-jihadville>

UNODC (2012) The use of the internet for terrorist purposes. *United Nations Report*, Vienna.

US Intelligence community (2019). Worldwide threat assessment. *Statement for the record*.

Van Den Bos, K. (2018). *Why people radicalize*. New York: Oxford University Press.

Van Dijk, A. (1993). Principles of critical discourse analysis. *Discourse & Society*, 4(2), 249-283.

Venhaus, J. M. (2010). *Why youth join al-Qaeda*. (Special Report No. 236). Retrieved from: United States Institute of Peace website: <http://www.usip.org/publications/2010/05/why-youth-join-al-qaeda>

Vidino, L., & Brandon, J. (2012). Countering radicalization in Europe. *The International Centre for the Study of Radicalization and Political Violence*. Retrieved from: <https://icsr.info/wp-content/uploads/2012/12/ICSR-Report-Countering-Radicalization-in-Europe.pdf>

Wiskind, C. (2016). Lone wolf terrorism and open source jihad: an explanation and assessment. *International Institute for Counter-Terrorism*, 1-52.

Zelin, A. Y., & Fellow, R. B. (2013). The state of global jihad online. A qualitative, quantitative and cross-lingual analysis. *Washington Institute for Near East Policy*, 1-24.

Appendix A

Each game principle comprises related lexicon. The key words used in this research were selected on the basis of a gamification lexicon document retrieved from Professor D. Skillicorn and the strategy map of game mechanics by Orji, Vassileva and Mandryk (2014). The lexicon document from Skillicorn has been cleaned and reduced in order to only use gamification-related words suited for this thesis. Combined with the game mechanic strategy map, the following chart was drawn, where key gamification words were appropriated to different gamification mechanics:

Gamification mechanics	Gamification language
Points	Rewards, bonuses, earning, badges, praise, value, result, power, record, payoff
Levels	Ranks, progression, status, pride, achievement, ownership, competition, better, strength, victory, worthy, breakthrough, complete, accomplished
Challenges	Opponent, win(ning), quest, pressure, fellowship, tasks, missions, loyalty, goals, others, obstacle, discovery, cooperation, targets, war(s), allies, failing, hunt, resilient, experience, problem
Virtual goods	Access, benefits, keeping, investment, right(s), consumption, limited

Appendix B

Inspire magazine	Open Source Jihad
Issue 1	<ul style="list-style-type: none"> - “Make a bomb in the kitchen of your mom”, - The AQ Chef “How to use Asrar al-Mujahideen: Sending & Receiving Encrypted Messages”, Terrorist
Issue 2	<ul style="list-style-type: none"> - “The ultimate mowing machine”, Yahya Ibrahim - “Asrar Al-Mujahideen 2.0 extras”, Terrorist
Issue 3	Special issue
Issue 4	<ul style="list-style-type: none"> - “Destroying Buildings”, AQ Chef - “Training with the AK”, - Abu Salih “Advice for those who want to help Al-Malahem Media”, Terrorist
Issue 5	<ul style="list-style-type: none"> - “Training with the AK 2”, - Abu Salih
Issue 6	<ul style="list-style-type: none"> - “Training with the AK”, Abu Saleh - “Making acetone peroxide”, Dr Khatee
Issue 7	Special issue
Issue 8	<ul style="list-style-type: none"> - “Training with the handgun”, Abu Saleh - “Remote control detonation”, Dr. Khateer
Issue 9	<ul style="list-style-type: none"> - “The convoy of martyrs: Rise up and board with us” - “It is your freedom to ignite a firebomb”, The AQ Chef - “Qualities of an urban assassin”, Uthman Ibn Al-Ightiyal
Issue 10	<ul style="list-style-type: none"> - “Torching parked vehicles”, Ibnul Irhab - “Causing road accidents”, AQ Chef - “You ask, we answer”, AQ Consultant
Issue 11	Special issue
Issue 12	<ul style="list-style-type: none"> - “Car bombs inside America”, AQ Chef - “Car bomb: Field data”, AQ Chef
Issue 13	<ul style="list-style-type: none"> - “The hidden bomb” “Breaching security barriers”, The AQ Chef - “Making the hidden bomb”, The AQ Chef - “Field Tactics” External Operations Reconnaissance Team

Issue 14	<ul style="list-style-type: none"> - "Assassination Operations" "Designing a timed hand grenade", The AQ Chef - Assassinations Field Tactics" Reconnaissance Team
Issue 15	<ul style="list-style-type: none"> - "Professional Assassinations", Prepared by the External Operations Team - "Home Assassinations: Parcel Bomb, Magnet Car Bomb, Door- Trap Bomb", The AQ Chef
Issue 16	Special issue
Issue 17	<ul style="list-style-type: none"> - "Train derail", AQ Chef - "Designing train derail" AQ Chef - "Field tactics", External Operations Team - Passenger train routes in America

Appendix C

The table below provides a full list of all individual, operation and martyrdom challenges present in the 17 issues of *Inspire*. Quotation marks are used for all direct speech and citations taken from *Inspire*. Challenges and operations present in *Inspire* but not literally adopted from the text have no quotation marks.

Challenge	<i>Inspire</i> Issue
“We call on every Muslim who feels any jealousy for their religious beliefs to expel the polytheists from the Arabian Peninsula, by killing all of the crusaders working in embassies or otherwise.”	Issue 1, p.5
“And we call on every soldier working in the crusader armies and puppet governments to repent to Allāh and follow the example of the heroic mujāhid brother.”	Issue 1, p.5
“As for the mujāhidūn, they will – Allāh willing – persist in their fighting of the oppressors in Iraq and Afghanistan, in order to achieve truth, cancel falsehood and help the Muslims, especially in Palestine, and in order to defend weak and disaster-stricken people in Asia, Africa and South America who have neither strength nor power.”	Issue 1, p.10
“My advice to my Muslim brothers in the West is to acquire weapons and learn methods of war.”	Issue 1, p.17
“O Muslims rise up in defense of your Messenger : <i>واوسلم عليه الله صلى</i> a man with his knife, a man with his gun, a man with his rifle, a man with his bomb, by learning how to design explosive devices, by burning down forests and buildings, or by running over them with your cars and trucks. The means of harming them are many so seek assistance from Allāh <i>جل جلاله</i> and do not be weak and you will find a way.”	Issue 1, p.17
Assassinate: Girt wilders, Lars Vilks, Molly Norris and others.	Issue 1, p.25
Sent and receive encrypted messages.	Issue 1, p.41
“Learn the language, bring a companion.”	Issue 1, p.44
“Prepare for jihad!”	Issue 1, p.47
“O you who have believed, obey Allāh and His Messenger and do not turn from Him while you hear [His order]. And do not be like those who say, “We have heard,” while they do not hear. Indeed, the worst of living	Issue 1, p.54

creatures in the sight of Allāh are the deaf and dumb who do not use reason.”	
“Hence, my advice to you is this: you have two choices: either hijra or jihād. You either leave or you fight. You leave and live among Muslims or you stay behind and fight with your hand, your wealth and your word.”	Issue 1, p.58
Memorize the Qu'ran.	Issue 2, p.25
“Working together is an objective for us, and our goal is the establishment of an Islamic state that follows the way of the Messenger of Allah.”	Issue 2, p.43
“I advise them to learn Islam according to the creed of ahl as-Sunnah.”	Issue 2, p.44
“Second: They should strive to follow the command of the Messenger of Allah ﷺ who warned Muslims from living amongst non-Muslims. They should either immigrate or fight Jihad in the West by individual Jihad or by communicating with their brothers in the lands of Jihad.”	Issue 2, p. 44
“Third: The operations of our brothers, Nidal Hassan and Umar al-Farouk, may Allah grant them steadfastness, are great heroic acts so whoever may add himself to this great list should do so and we ask Allah to grant them success.”	Issue 2, p.44
Use a pick-up truck as Mowing machine (OSJ).	Issue 2, p.54
Take care and precautions with technology and online equipment. Eliminate electronic devices.	Issue 2, p.55
develop weapons of mass destruction (brothers in chemics)	Issue 2, p.57
Use Asrar al-Mujahideen 2.0 to establish communication	Issue 2, p.58
“Allah says: {O you who have believed, do not take the Jews and the Christians as allies. They are [in fact] allies of one another. And whoever is an ally to them among you – then indeed, he is [one] of them.”	Issue 3, p.11
“Dear Muslim hasten to join the ranks of the mujahidin or to form cells to perform operations against the disbelievers in their own land.”	Issue 3, p.11

“My brothers: know that jihad is your duty as well, and that you have an opportunity to strike the leaders of kufr and retaliate against them on their own soil, as long as there is no covenant between you and them.”	Issue 4, p.17
“So, my brothers, you must get ready to perform your vital role in the global jihad against the leaders of kufr; and refer - if you wish - to my speech in the English language entitled "A Call to Arms.”	Issue 4, p.17
Destroy buildings - AQ chef OSJ	Issue 4, p.39 - 41
Know how to use an AK weapon OSJ	Issue 4, p.42
“So the most important of the jihadi actions is the liquidation of their leaders, by murder and assassination.”	Issue 5, p.32
“The short-term plan consists of targeting Crusader-Jewish interests, as everyone who attacks the Muslim ummah must pay the price - in our country and theirs, in Iraq, Afghanistan, Palestine and Somalia, and everywhere we are able to strike their interests.”	Issue 5, p.34
“And the long-term plan is divided into two halves: the first half consists of earnest, diligent work to change these corrupt and corruptive regimes.”	Issue 5, p.34
“Therefore this is the true path. So don't let its difficulties avert you since fighting is the fate of the victorious group.”	Issue 5, p.63
Prepare yourself in education on weaponry and chemistry.	Issue 5, p.65
Prepare yourself in physical training.	Issue 5, p.66
Training with the AK	Issue 6, p.37
Make acetone peroxide OSJ	Issue 6, p.39
“Regarding the priority of arenas in which we must strike the enemy, the list of priority arenas is as follows: A. Wherever you hurt the enemy the most and inflict upon him the heaviest losses. B. Wherever you arouse Muslims the most and awaken the spirit of jihad and Resistance in them: The countries on the Arabian Peninsula, the Levant, Egypt and Iraq: + a whole list of 7 other 'arenas' to strike.”	Issue 8, p.18
OSJ school: train with a hand gun	Issue 8, p.29

OSJ school: how to do remote control detonation	Issue 8, p.32
“The populations of the nations that are at war with the Muslims and especially those who are at the lead such as the U.S., Britain and France should be targeted by the mujahidin in operations that employ explosives, poisons, firearms and all other methods that lead to inflicting the greatest harm on them and this is among the greatest deeds a Muslim can worship Allah with in our day and time.”	Issue 8, p.47
Call of duty	Issue 9, p.10
“The classical jihadi operations usually require to go through three stages: - Selecting the target and gathering the information - Preparing for the operation - Executing the operation.”	Issue 9, p.28
“Work field: planet Earth - Required information that must be known about the mujahideen who will contact us. 1- Nickname 2- Country of residence 3- Possessed passports 4- Educational attainments 5- Languages in command 6- Experiences 7- Age 8- Personal status 9- Health condition 10- Security condition Joining terms: 1- Islam 2- Maturity 3- Ability 4- Full dedication 5- Complete readiness to execute the mission 6- Listening and obeying Targets: 1- Personalities who are at war with Islam and Muslims 2- Economic targets belonging to the enemy 3- Military targets belonging to the enemy 4- Media targets belonging to the enemy Targets according to priority: - American targets - Israeli targets - French targets - British targets - Apostate regimes targets in the Muslims’ lands.”	Issue 9, p. 28

<p>“Here is the answer to that question. We are mentioning here three points in details and they are as follows: 1- Ask for the assistance of Allah - glorified is He above all- and depend on Him. 2- Choose the right time and suitable circumstances. 3- Use the ember bomb.”</p>	Issue 9, p.30
Make an ember bomb	Issue 9, p.32
Practice skills to become a good assassin	Issue 9, p.36-38
“I urge Muslims to distribute all issues of this magazine so as to spread the word of truth and not to waste the blood of our beloved Shuhadaa writers.”	Issue 10, p.3
Target list	Issue 10, p.15
“Important targets for individual jihad: American and allied interests, European allied countries.”	Issue 10, p.24
“Al-Qaeda's main goal in this stage – at least – is to aid every oppressed muslim in this world regardless of his madhhab and race. As for its long-term goal, is to reestablish the Islamic Caliphate through Jihad in the cause of Allah and to implement the Shari'ah of Allah in the whole land of Allah, Biidhnillah.”	Issue 10, p.35
“This is your day, so rise to the challenge and become a part of history in the making.”	Issue 10, p. 38
6 tasks for the lone mujihad	Issue 10, p. 46
Operation no parking (OSJ)	Issue 10, p. 51
Causing road accidents (OSJ)	Issue 10, p. 54
“Every Muslim will see that it is his obligation to fight with all his power against America.”	Issue 12, p.26
“America is our first target, followed by United Kingdom, France and other crusader countries.”	Issue 12, p.70
“Be creative in your Jihad. This is 'Open Source Jihad'. Surprise the enemy, don't follow a particular protocol.”	Issue 12, p. 70
Making a hidden bomb	Issue 13, p. 68
“We have sketched the targets as a part of a complete program we have presented to the Lone Mujahid.”	Issue 13, p. 108
“The existence of America, policing the world vanishes any hope for the Mujahideen conquering any part of this earth. This is because America is the one that unites coalitions, plans plots and	Issue 14, p. 43

trigger strikes against the Mujahideen. They do not want the Laws of Allah to remain on Earth. That is why we have to converge all our efforts in defeating America.”	
3 TASKS listed to attain the desired outcome: a worldwide caliphate	Issue 14, p.43
“That is why we have dedicated this issue and in later issues a complete comprehensive assassination program appropriate for a Lone Mujahid. We encourage you to read and understand the following in order to achieve your goals as desired. Among the necessary things for a Lone Mujahid to learn concerning this topic is, the stages and phases of an assassination operation. The series of steps, from inception to execution. We divide an assassination operation into the following stages.”	Issue 14, p. 66
Make a hand-granade.	Issue 14, p. 72
Specific targets to hit as a task.	Issue 14, p. 84
“I would like to specifically point out the Lone Mujahid. Who fights alone in the land of the enemy without the assistance of a jihad group. It is upon this Mujahid to learn the basics that should not be neglected by any Muslim. This includes tawheed, rulings on twahaara, manner of prayer, rulings on fasting and zakat and the fiqh of jihād. He should also understand and learn the rulings of martyrdom operations, raiding the enemy and tatarus and the rulings on giving allegiance.”	Issue 15, p.33
“Of the contemporary scholars whom the Mujahid is advised to read and study their books which talk more about what the Mujahid needs during his path include; Shaikh Hamuud aluqla al-shuaiby, Sheikh Muhammad Al-maqdisy, Sheikh Abu qatada Al-falastiny, Sheikh Suleiman Al-alwan. And also the Shuyookh in the jihādi battlefields such as; Sheikh AtiyyatuLLah, Sheikh Abu Yahya Al-liby, Sheikh Usama bin Laden, Sheikh Ayman Ad-dhwahiri, Sheikh Musab Azzarqawi and among many others.”	Issue 15, p. 34
Professional assassinations (OSJ)	Issue 15, p. 66
Making parcel bombs (OSJ)	Issue 15, p. 74
Magnetic car bomb (OSJ)	Issue 15, p. 80
The door trap bomb (OSJ)	Issue 15, p. 86

“And to our brothers, the heroes of Lone Jihad, we urge you to target America.”	Issue 16, p. 8
“Three things can be targeted: 1 – The Vehicle itself used for transportation. 2 – Its line of transport and pathway. 3 – Stations, terminals or transit points.”	Issue 17, p. 11
“After this quick review, in which we show the importance of focusing on specific kinds of targets, I urge my Mujahideen brothers everywhere, especially the Lone Jihad heroes; I say to them: Target America, by Allah they are in a great predicament.”	Issue 17, p. 13
“Accomplish your goals with secrecy. Attain the highest level of perfection in your actions.”	Issue 17, p. 15
“Be perfect in your choice of targets, so that you may damage your enemies more. Be professional in your choice of weapons.”	Issue 17, p. 15
Train derail operations (OSJ)	Issue 17, p. 64