THE GAMIFICATION OF (VIOLENT) EXTREMISM

AN EXPLORATION OF EMERGING TRENDS, FUTURE THREAT SCENARIOS AND POTENTIAL P/CVE SOLUTIONS

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LIST OF ACRONYMS

C&N Communication and Narratives Working Group

CT Counter-terrorism

EU European Union

FPS First-person shooter

IM First Identitarian Movement

IS Islamic State

MS Member States

NFTs Non-fungible tokens

PBLs Points, badges and leaderboards

P/CVE Preventing and countering violent extremism

RAN Radicalisation Awareness Network

RAN PS Radicalisation Awareness Network Policy Support

INTRODUCTION

The intersection between (violent) extremism and video-gaming – spanning across jihadist, far-right, and other types of ideologies – is long-standing, though is an area that is under-researched. As part of this, particularly scant attention has been paid to the concept of 'gamification'; i.e. the application of gaming and game-design principles within non-gaming environments (Lakhani and Wiedlitzka, 2022). The primary objective of this paper is to provide an understanding of how (violent) extremism can be (and has been) gamified, what emerging trends and future scenarios might be, and the potential influence (or lack thereof) that gamification has within (violent) extremism. On the basis of this understanding, this paper will outline relevant concepts of action through preventing and countering (violent) extremism (P/CVE) considerations and offer policy (and broader) recommendations on how to account for the element of gamification and potential actions to prevent and counter the phenomenon.

Through existing literature and open-source materials – including academic articles, research reports, policy documents, newspaper articles, investigative journalism, government inquiries and previous relevant Radicalisation Awareness Network (RAN) Policy Support (PS) deliverables, etc. – this paper will investigate the following key questions: what is gamification of (violent) extremism, what are the current and future threats it presents to the European Union (EU), and how can it be countered? In order to address this, the paper is organised into the following sections.

SECTION 1 ('CONCEPTUALISATION OF GAMIFICATION')

Section 1 ('Conceptualisation of gamification') will provide a conceptual overview of gamification, including outlining a working definition, in order to provide a foundation for the remainder of the paper. This section will also outline the concept's origins and examine how these can be applied to the context of (violent) extremism. There will additionally be a contextualisation of the phenomenon in regard to the threat of (violent) extremism within EU Member States (MS) overall.

SECTION 2 ('CURRENT AND FUTURE THREATS')

Section 2 ('Current and future threats') will discuss the potential ways in which (violent) extremism can be gamified, predominantly through outlining a range of current examples. These examples are by no means exhaustive, but do provide a sufficient overview regarding the types of gamification approaches taken within this context, by both (violent) extremist organisations and individuals. This section will conclude by considering the emerging trends and conceivable future scenarios in this field.

SECTION 3 ('ADDRESSING GAMIFICATION WITH P/CVE')

Section 3 ('Addressing gamification with P/CVE') outlines how gamified (violent) extremism can be addressed in P/CVE programming and whether or not it requires specifically tailored responses. This section will also inform discussions on whether current responses are fit for purpose and how these approaches potentially need to be tailored or evolve in order to deal with the threat posed by the gamification of (violent) extremism more effectively.

SECTION 4 ('POLICY AND RECOMMENDATIONS')

Section 4 ('Policy and recommendations') will then consider any current policy which relates to the gamification of (violent) extremism across EU MS. This will be followed by a number of relevant recommendations for policymakers stemming from existing research and literature. This includes providing recommendations for P/CVE based on promising

approaches. This section will also discuss the current state of work in this area of study and make relevant research-related recommendations.

CONCLUSIONS

Finally, a 'Conclusions' section will discuss the potential value and limitations of gamification as a concept in relation to (violent) extremism. This is underpinned by the consideration of whether gamification is purposeful or relates to actions undertaken by those familiar with a particular subculture, i.e. gamers.

CONCEPTUALISATION OF GAMIFICATION

The video-gaming sector is considered to be one of the fastest growing industries (Lakhani, 2021). Estimates for the previous year, 2021, include around 2.8 billion gamers globally and revenues in the region of USD 189 billion (Gilbert, n.d.). When specifically considering online gaming, it is thought that by 2025 'audiences are projected to surpass 1.3 billion' and revenue will be around USD 19 billion (Clement, 2022). As outlined by Lakhani (2021: 3), there are various positive economic, health, social, and psychological benefits of gaming; however, 'as technology develops, so do the associated harms, with new challenges constantly presented.' Here, the intersections with (violent) extremism are of particular concern.

VIDEO GAMES AND (VIOLENT) EXTREMISM

Within EU (and for that matter, global) policy, security, and counter-terrorism (CT) circles, there is growing concern for the intersection between video-gaming and (violent) extremism (EU, 2020; RAN, 2021). Although the general overlaps between video games and (violent) extremism have existed for decades (Conway et al., 2021), and there is some important and insightful research, this intersection was described by a RAN Communication and Narratives Working Group (C&N) in 2020 as 'poorly understood' (RAN, 2020: 1). Furthermore, as argued in a recent RAN PS paper on video games and (violent) extremism (Lakhani, 2021: 3), 'there is a distinct lack of (particularly empirical) research and literature in this area of study …', with work at an emergent stage.

Saying that, of late, increasing work has been dedicated to better understanding the phenomenon, including the establishment of specific interdisciplinary and cross-sector partnerships, such as the Extremism and Gaming Research Network (EGRN). Within the aforementioned C&N Conclusions Paper, a framework was also developed which set out the intersection between video-gaming and (violent) extremism (RAN, 2020). This essentially consisted of six 'types of video game strategies related to extremist activity', including:

1. 'production of bespoke games' (i.e. (violent) extremists producing their own games);
2. 'modding mainstream games' (i.e. making changes to existing games, e.g. fighting as Nazis);
3. 'in-game chat' (i.e. using text or voice chat within games to connect with other like-minded people or in an effort to disseminate propaganda/ideologies, radicalise, and recruit);
4. 'gaming adjacent communications platforms' (i.e. using platforms like Twitch or Discord to connect with other like-minded people and form communities, or in an effort to disseminate propaganda/ideologies, radicalise, and recruit. Please note, according to most recent research, the radicalisation and recruitment aspect does not appear to be the most prominent aspect, although more research on this is needed) (Lakhani, 2021);
5. 'gaming cultural references' (e.g. appropriating images and other material from well-known video games within other types of propaganda); and,
6. 'gamification'.

It is the last concept, i.e. the 'gamification' of (violent) extremism, that this paper is concerned with.

WHAT IS GAMIFICATION?

Although there has been a relatively rapid increase in the number of 'gamified' approaches and applications in recent years, a universally accepted understanding of the concept is non-existent (Sailer et al., 2017). This is similar to concepts such as 'terrorism' and 'extremism', where an agreed-upon definition does not appear to be feasible. Gamification has, since its earliest conception, been a term and concept that has been 'heavily contested', which has led to a plethora of varying

definitions (Deterding et al., 2011). Looking through these definitions, however, there are some distinct parallels and agreements on some general aspects of its being. At its very core, gamification can be described as:

> 'the use of game design elements in non-game contexts' (ibid.: 11).

CONCEPTUALISING GAMIFICATION

The notion of implementing gaming and game-design principles within non-gaming environments can be traced back several years, but principally existed to address some serious business challenges that emerged at the beginning of the twenty-first century. This eventually led to the conceptualisation of 'gamification' a decade later around 2010 (Kim and Werbach, 2016), where its benefits were better understood (Sailer et al., 2017). In essence, gamification is about 'facilitating behavioural change' (Schlegel, 2020), and harnessing the 'motivational potential of video games' (Sailer et al., 2017). Here, there is the 'implementation of elements familiar from games to create similar experiences as games commonly do' (Hamari and Koivisto, 2015: 333). It is about fostering goal-directed behaviour, i.e. motivation (Sailer et al., 2017), and making non-gaming environments more enjoyable and engaging (Deterding et al., 2011).

Small to global brands like Nike and Coca Cola, including rappers like Jay-Z (Robson et al., 2016), have realised the worth in implementing gamification to address various challenges, including customer satisfaction, brand loyalty, generating sales, increasing employee performance (Kim and Werbach, 2016), and the value it holds for employees (Mitchell et al., 2020). An example of this type of gamification is McDonald's partnership with popular global board game, Monopoly. The gamified experience consists of customers purchasing certain food items from the franchise which have Monopoly-themed stickers attached. Once peeled, some of the stickers reveal prizes which consist of food, cash, holidays or other winnings. Similar to the concept of the original Monopoly game, special prizes are also available for those customers who collect full sets of stickers, e.g. all of the railway stations. This type of gamification solidifies commitment to the organisation and encourages customers to either purchase items or maintain loyalty to the brand. Due to the success of gamified strategies as business solutions, the 'implementation of gamification or gamified applications and systems have diversified into numerous sectors, including finance, education, government, health, news, entertainment, marketing and advertising, public engagement, environmental protection, amongst others' (Lakhani and Wiedlitzka, 2022: 3). This has also, unfortunately, transcended into aspects of (violent) extremism.

GAMIFICATION AND (VIOLENT) EXTREMISM

When looking at research on the general intersection between (violent) extremism and video games, there have been various (often anecdotal) examples that relate to various groups, movements, and ideologies – including jihadists, far-right violent extremists, and ethnonationalist groups (Lakhani, 2021). An example of this is the use of imagery and other culturally relevant aspects from the popular video game franchise Call of Duty within IS propaganda, including memes (Dauber et al, 2019). 'As such, the search for any one narrative being used by such a varied group in such a varied array of circumstances would be an exercise in futility' (RAN, 2020: 4).

It is much the same when focussing on gamification specifically. Although it appears, at least anecdotally, that the predominant use of gamification emanates from the far-right, there should be no underestimation of others' use of the concept. This includes: the jihadist groups who use rewards (points, levels, content unlocking, etc.) on numerous websites (Kim and Werbach, 2016), including al-Qaeda-affiliated groups that build 'reputation points' and rankings into forums (Brachman & Levine, 2011); the release of video calling for action from Islamic State's (IS) Al Hayat Media Center in 2020, which outlined a 'mission briefing' similar to that found in 'a mission-oriented first-person shooter video game' (Wicks, 2020); and the likening to real-world warfare of games like

Call of Duty by IS recruiters (McDonald, 2018). In fact, it can be argued that IS often sets trends with wider jihadist groups, whereby the adoption of gamification will be part of a wider aesthetic 'migrating downstream' (Dauber et al, 2019: 17). In terms of far-right usage, in addition to the examples discussed throughout the remainder of this paper, the 2011 Oslo attacker, Anders Breivik, can be considered as one of the first to include this concept within his assault, with it being reported that he 'gamified elements of his attack and was a keen gamer himself, where it is thought that he trained for his assault using popular First Player Shooter (FPS) franchise, Call of Duty' (Lakhani and Wiedlitzka, 2022: 11). It is reported that he even imagined himself as an avatar (Schlegel, 2021).

When considering gamification within the context of (violent) extremism, many of the conceptual underpinnings derived from its origins in business can be applicable to and useful in these types of situations. As argued by RAN, '[g]amification has the potential to bring about increased engagement and identification with extremist content' (RAN, 2020: 3). Wider work has loosely grouped the different gamification approaches (violent) extremists take as either 'top-down' or 'bottom-up' (Schlegel, 2021). Top-down gamification refers to the 'strategic use of gamified elements by extremist organisations to facilitate engagement with their content' (Schlegel, 2021: 4). This includes, as one example, the development (or at least proposition) of mobile applications (apps) which offer points for the undertaking of various tasks, 'in order to recruit, disseminate propaganda, or encourage engagement and commitment, for example' (Lakhani and Wiedlitzka, 2022: 2). In contrast to top-down gamification, ' … bottom-up gamification emerges organically in (online) communities or small groups of individuals …' (Schlegel, 2021: 4). One of the, if not the, most prominent examples of bottom-up gamification is the Christchurch attack which occurred in March 2019 and was 'one of the worst mass shootings in New Zealand's history and its deadliest ever terrorist attack' (Lakhani and Wiedlitzka, 2022: 1). Christchurch was, some argue, used as a loose framework for attacks that came after, with some referring to these as 'copycat attacks', though others have suggested thinking about them as following the same 'cultural script is more accurate' (Macklin, 2022). Nevertheless, these include an attack in April 2019 on a synagogue in Poway, California; two attacks in August 2019 inside a Walmart in El Paso, Texas; a mosque in Bærum, Norway; an attempted attack in October 2019 on a synagogue in Halle, Germany; and more recently an attack in May 2022 in a store in Buffalo, New York – these examples will be discussed further in the next section. As argued by Schlegel (2020a), the perpetrators 'employed both the skills they acquired and the visual style often found in first-person shooter games during their attacks. They blurred the boundary between the real and the virtual world by transporting gaming elements into their attacks. Games are more than a "cool" reference to popular culture, they are, for some, a way to structure reality.'

CONCEPTUALISATION OF GAMIFICATION WITHIN EUROPEAN UNION POLICY

From open-source investigation there does not yet appear to be EU policy specifically related to the gaming issue or to the gamification of (violent) extremism. The new Digital Services Act (European Commission, 2022) is the legislative framework within which the EU will likely seek to address any concerns around online gaming and the spread of (violent) extremism. However, this act appears to be more specifically focused on the social media platforms, algorithmic amplification and targeted advertisement, as well as the new government expectations for content moderation. It seems that in some cases security organisations are working more specifically on investigating the online gaming world and gathering intelligence on the potential threat it poses, but this is often classified work and has not yet translated into policy. Different EU MS have adopted different levels of concern regarding the issue, dependent on their context and their understanding of the threat, and it remains to be seen how effectively the Digital Services Act will be enforced.

CURRENT AND FUTURE THREATS

This section will begin by discussing the potential ways in which (violent) extremism can be gamified by outlining a range of current examples. These examples are by no means exhaustive, but do provide an overview regarding the types of gamification approaches taken within this context, by both (violent) extremist organisations and individuals. There is also the inclusion of a 'case study' which depicts one of the best-known and referred-to cases of bottom-up gamification, i.e. the Christchurch attack in 2019. This case study includes the consideration of subsequent gamification that occurred after the attack by various online (violent) extremist communities. This section will conclude by contemplating the emerging trends and conceivable future scenarios in this field.

CURRENT THREATS

It is useful to revisit and place the examples of gamification within the broad framework presented by Schlegel (2021), which considers the concept as either 'top-down' or 'bottom-up'. In terms of top-down, which includes gamification that is enacted by (violent) extremist organisations, there are various examples that demonstrate this across different groups and ideologies. There are even points of convergence between far-right and jihadist groups, demonstrated in the mobile phone/tablet applications (app) planned (though not released) by the Identitarian Movement (IM), and IS's app released for children. IM's Patriot Peer app was aimed at 'connecting like-minded individuals and facilitating networking within the movement' (Schlegel, 2020: 13), where the developers aimed to turn 'resistance into a game' (ibid.: 14). The app relies on a core aspect of gamification: i.e. points, badges, and leaderboards (PBLs) (Lakhani and Wiedlitzka, 2022). Users of the app would attain points and move up the rankings and leaderboard by undertaking various tasks which included networking (connecting with others on the app and in person – facilitated through the app), visiting sites deemed to be of cultural heritage, and 'disrupting cultural or political events of adversaries or by disturbing the operation of boats used to rescue refugees in the Mediterranean Sea' (Schlegel, 2020: 13).

IS's app (for both desktop computers and the Android mobile operating system), Huroof, was developed to gamify teaching Arabic to young children and was widely publicised though various official IS outlets (Lakomy, 2019). The app, which featured nasheed music, 'combines bright colors, pictures of grass, trees, clouds, trains, balloons, as well other "classic" graphics used in books for children, with "militaristic vocabulary," … and illustrations of guns, bullets, rockets, cannons, or tanks' (ibid.: 394). Although the value and effect of gamification is relatively unknown and somewhat contested, as discussed in the next section, the intention of this app was 'arguably in a bid to reinforce commitment to Islamic State ideologies, aims, and objectives' (Lakhani, 2022).

In terms of bottom-up gamification, one example often not discussed within this context was the 'Punish a Muslim Day' leaflets sent out anonymously[1] across the United Kingdom. The material outlined that on 3 April 2018[2,] people would be rewarded with a points-based system based on different actions taken (Maza, 2018). These included: 'Verbally abuse a Muslim' (10 points); 'Pull the head-scarf off a Muslim "woman"' (25 points); 'Throw acid in the face of a Muslim' (50 points); 'Beat up a Muslim' (100 points); 'Torture a Muslim using electrocution, skinning, use of a rack' (250 points); 'Butcher a Muslim using gun, knife, vehicle or otherwise' (500 points); 'Burn or bomb a mosque' (1 000 points)'; and 'Nuke Mecca' (2 500 points). This has distinct similarities to wider

[1] The leaflet was produced and distributed by white supremacist, David Parnham, who was sentenced to 12.5 years in prison (Dearden, 2019).

[2] To coincide with the birthday of Dylann Roof, the Charleston church shooter.

examples of the gamification of violent extremism, though not in the online-gaming field. For instance, Stephan Balliet, the Halle shooter, outlined a list of 'objectives' and 'achievements' in his manifesto that he intended to 'unlock', as found in numerous video games (Lakhani and Wiedlitzka, 2022). As part of the gamified attack, '[p]oints would be scored, he explained, for killing Jews, Muslims, Christians, blacks, children and communists, as well as through the use of different means, including 3D-printed guns, grenades, swords, a nail-bomb, and his "secret weapon," which likely referred to his car. The gunman was doubtless hoping future attackers would tally up his "high score"–and eventually try to beat it' (Hoffman and Ware, 2020).

With bottom-up gamification in mind, one of the, if not the, most recounted examples is the Christchurch attack in 2019. In many ways, it epitomises how people currently understand the gamification of violent extremism (even though this paper argues that the concept should be considered more broadly). This example is outlined as a case study below.

CASE STUDY – THE CHRISTCHURCH ATTACK

Where – Christchurch (New Zealand)

When – 15 March 2019

Who – Brenton Tarrant, a 28-year-old Australian national and self-described 'ethno-nationalist' and 'eco-fascist'

Targets – Primarily the Al Noor Mosque and Linwood Islamic Centre. Tarrant was apprehended by police reportedly on his way to a third location

Victims – 51 Muslim worshippers killed and attempt to kill 40 more

Output and propaganda – 74-page manifesto; live-streaming his attack on Facebook; and the initiation of a thread around 10-20 minutes before the commencement of the attack on the now-banned imageboard, 8chan

Weapons – Weapons included 'four crude incendiary devices, two ballistic armour (bullet-proof) vests, military style camouflage clothing, a military style tactical vest, a GoPro camera, an audio speaker and a ballistic style tactical helmet. He also had a scabbard with a bayonet-style knife (with anti-Muslim writing on it)' (Royal Commission of Inquiry, 2020: 40).

Resources – Car to drive between locations

Gamification of the attack

The Christchurch attack is one of the more commonly referred-to examples of gamifying violent extremism. Here it is widely accepted that the perpetrator, purposefully or otherwise, included several gamified elements within his assault. Within Lakhani and Wiedlitzka's (2022) recent research on the attack, they outline a number of subtle and overt indicators of gamification found within various pieces of empirical data, including the attacker's 74-page manifesto, live-stream video, and original post on 8chan along with, importantly, the 749 replies posted by other 8chan users before the thread was taken down. The key findings from this research are discussed here.

- The manifesto – Just prior to the attack, Tarrant updated his Facebook page and added links to seven different file-sharing websites that hosted his manifesto. Within this manifesto, as with most video games and gamified experiences, the assailant introduces and develops the main character of the plot, i.e. himself, 'sets the scene' for the attack, and provides a storyline. He discusses the different narratives and motivations of the attack. Amongst other things, he talks about the 'Great Replacement', but through 'a narrative of invasion and

protection that can be found in numerous video-gaming scenarios, whether that is an invasion by people, aliens, or zombies, for example' (ibid.: 6-7).

- The live-stream video – Using a helmet-mounted GoPro camera connected to the assailant's phone, the 17-minute attack was live-streamed on Facebook and subsequently uploaded to other mainstream social media sites including YouTube and more obscure (or lesser-known) online spaces. The assault demonstrated a number of prominent indicators of gamification. First, the use of a GoPro camera provided the feel of a FPS, a popular gaming genre where the player experiences the game/experience from the 'eyes' of the character – as demonstrated in numerous widely-recognisable game franchises like Call of Duty or Halo. Second, the act of live-streaming has distinct parallels with popular 'Let's Play' videos which entails people (mainly gamers) watching other gamers play video games live, or recordings of it afterwards, while they are able to interact with the gamer or one another through voice and text chat. Third, it has been reported that the assailant had with him a range of weapons (as detailed above) and switched between them; again, something that is reminiscent of video games. Finally, analysis of the assailant's video after he leaves the first site of attack demonstrates parallels with the popular Grand Theft Auto franchise. This includes erratic driving, reaching speeds of 130 kilometres in a 50 kilometre-per-hour zone, and using his weapon to fire out of the moving car at pedestrians and other vehicles.

- The 8chan thread – Alongside gamification enacted by perpetrators, it is also possible to consider gamification conducted by audiences, communities, and consumers. Within a thread initiated on the now-banned imageboard 8chan by Tarrant shortly before his attack commenced, other 8chan users discussed numerous aspects of the attack as it was taking place in real time, including those that had distinct parallels to video games and gaming in general. Many of those on 8chan were gamers themselves and even migrated to the site from 4chan due to the GamerGate scandal[3]. Of particular interest is the competitive aspect, one that relates to the aforementioned PBLs. Here, 8chan posters on the thread attempted to guess the 'body count' and 'high score' as the attack was unfolding (ibid.: 10). One user even posted a picture of a chart of mass shooters (originally posted on 4chan a number of years ago and updated as new incidents occur), and asked 'where will he fit in[?]' (ibid.). The shooters on the chart were scored and rated based on various factors including how many adults and children they killed, with extra points for committing suicide after the attack, and further 'bonus points' for having (perceived or otherwise) various psychological issues, including autism and schizophrenia.

Wider Christchurch considerations

There are various wider considerations that have emerged post-attack which either further gamify the situation or connect it to gaming in general. Following the incident, edited versions of the attack video were distributed online with various video-game interfaces added (HOPE not hate, 2019). As one example, New Zealand white supremacist Philip Neville Arps asked a friend to include a 'kill count' with the video, and a screenshot was found on this friend's phone overlaid with text that read 'Call of Duty Mosque NZ edition' (Macklin, 2021: 218). In addition, clips of the attack were edited with YouTube personalities superimposed to look like they were live-streaming a video game (Ibrahim, 2020). Actual playable Christchurch-attack video games were also produced later or original games edited to include Tarrant himself as a character (Macklin, 2019). There were even instances of 'gamers re-playing their own version of the Christchurch massacre in The Sims' (Schlegel, 2021: 3).

[3] For a detailed discussion of GamerGate, see (McLaughlin, 2019).

Christchurch-style attacks

What has been demonstrated in recent empirically led research is that there are various underlying gamification parallels within far-right attacks throughout history, including prior to the Christchurch attack as witnessed with Anders Breivik's assault in Norway in 2011 (see Lakhani and Wiedlitzka, 2022). Post-Christchurch, in a relatively short space of time after this attack, there were a number of other incidents which had distinct gamified elements, including an attack in April 2019 on a synagogue in Poway, California; two attacks in August 2019 inside a Walmart in El Paso, Texas; a mosque in Bærum, Norway; and an attempted attack in October 2019 on a synagogue in Halle, Germany. In fact, some of these attackers even personally name Tarrant in their manifestos as a source of inspiration, leading to the question of whether Christchurch can act as a framework for future attacks (ibid.), or 'cultural script' (Macklin, 2022), as mentioned earlier. With these attacks there were numerous gamification overlaps in terms of manifestos, threads initiated on obscure sites, and FPS-style live-streaming (or at least the attempt to; some were unsuccessful due to technical difficulties). With the latter, it is relevant to note that while Tarrant chose to live-stream his attack to Facebook, others that followed decided upon using Twitch; an Amazon-owned gaming adjacent platform that is extremely popular with gamers, further demonstrating the gamification of violent extremism (Lakhani, 2021).

Finally, although there were some commentators who argued that the gamification of violent extremism, similar to Christchurch, could have been a particular phase of attacks which was mainly limited to the period of 2019, more recently in May 2022, an attack in Buffalo, New York, demonstrated similar gamified elements, including live-streaming the attack to Twitch (Lamphere-Englund and White, 2022). There is, thus, a strong possibility that there will be similar-style attacks in the future. In fact, many of the examples and types of gamification discussed within this paper are likely to be future threats, as well as current. However, there are wider considerations with future threats that are yet to be explored, specifically the 'metaverse'.

FUTURE THREATS – METAVERSE

At its very core, the metaverse is proposed to be a network of virtual environments where a great number of people can interact with one another (Ratan and Lei, 2021). It is a concept that hopes to combine both the digital and physical worlds (Ravenscraft, 2022), where some believe servers will be able to host potentially thousands or even millions in the future, where people can intermingle in the same space or spaces. There is already some activity taking place in this realm with immersive gaming environments, live concerts, and digital art galleries (Joshi, 2022). Saying that, it is important to outline that due to the concept being at a very early stage of conceptualisation and development, what it will eventually look like is yet to be determined, since the term contains much complexity and ambiguity (Ravenscraft, 2022). There is no real agreement on what it actually is or will be. This is 'because the term doesn't really refer to any one specific type of technology, but rather a broad (and often speculative) shift in how we interact with technology' (ibid.). What can be determined is that it will be a progression of the current incarnation of the internet.

Despite being at a very early point in its incarnation, the metaverse has been heavily invested in by companies like Facebook (who have even renamed to Meta). They envision a future where the metaverse can be the setting for numerous online activities (through augmented, virtual, and mixed-reality technologies (Joshi, 2022)), which includes gaming, play, studying, shopping, working (Ratan and Lei, 2021; Ravenscraft, 2022), and worship (Elson et al., 2022). Some have described it – or at least a potentially prominent aspect of it – as being 'a 3D version of the Internet and computing at large … [and] always being within a computer and inside the internet' (Joshi, 2022). It will involve a 'blending of virtual and physical realities, both by representing people and objects from the physical world in the virtual and conversely by bringing the virtual into people's perceptions of physical spaces' (Elson et al., 2022). Other larger and smaller tech companies are also investing in metaverse early and building the infrastructure, such as Microsoft, Apple, and Google, and including various non-tech companies such as Nike, etc. It is thought that the

metaverse will become a USD 800 billion market by 2024 (Joshi, 2022). In its simplest understanding, the metaverse is thought to develop into 'a shared virtual space that is interactive, immersive and hyper-realistic' (ibid.).

The metaverse and (violent) extremism

Similar to any emerging technology, the metaverse will bring with it not only a plethora of opportunities, but new and emerging risks. A pressing consideration as the idea and actuality of the metaverse develops is public safety, and whether it can be a 'safe and responsible environment' (Joshi, 2022). In terms of terrorism and (violent) extremism, researchers are already asserting that 'its evolution promises new ways for extremists to exert influence through fear, threat and coercion. Considering our research on malevolent creativity and innovation, there is potential for the metaverse to become a new domain for terrorist activity' (Elson et al., 2022). These same researchers outline three ways in which the metaverse can be exploited: recruitment; the coordination, planning, and execution of attacks; and the selecting of new targets (i.e. virtual buildings, banking systems, far-right extremist graffiti on places of worship or virtual same-sex weddings, for example). There are important considerations and questions within this. For instance, how secure will the metaverse be against hacking? Will people be able to 'kill' other peoples' avatars within certain spaces? Will they be able to undertake other nefarious activities that could cause some type of harm, even though this may not necessarily be physical, at least in the first instance? It can be reasonably argued that these 'acts would take a psychological toll and result in real-world harm' (ibid.). It is important to consider here that although there is no universal agreement on the term 'terrorism', at its core it is about causing fear in societies and real-world violence is merely one tactic to achieve this. The metaverse is still at a very early stage in its development and it is too early to understand how it will be built, who will build it, and who will maintain it and ensure it remains a safe space.

It can be reasonably argued that gamification should be considered as part of this. This may well come naturally considering that gaming is thought to form an important part of the metaverse, so will likely attract the same gamers who currently frequent gaming-adjacent platforms (Lakhani, 2021; Schlegel 2021a), and websites like 8chan and 8kun, i.e. those communities discussed in this paper thus far. Furthermore, this is particularly pertinent when considering the merging and overlapping of other gaming-related aspects, such as using cryptocurrencies within gaming to purchase items, and the potential use of NFTs (non-fungible tokens) and cryptocurrencies by (violent) extremists (EU, 2020).

What are the types of gamification related to (violent) extremism that could occur? In line with the discussion above, this is speculative at this stage. However, one example could be similar to the 'Punish a Muslim Day' leaflets discussed earlier, where a points system is set up to undertake nefarious activities in the virtual (and real) world, such as virtual graffiti on a synagogue in the metaverse. Alternatively, there could be a Christchurch-type attack in the virtual world at a place of worship or shopping centre, depending on how vulnerable the systems are to hackers. This could transcend into the real world where augmented (or even mixed) reality could be used during the live-streaming of attacks with the use of 'targets' (or scope) on screen, or a live score counter which increases with every kill. Here, a 'metaverse centred on augmented reality wouldn't be a completely new digital world – it would intersect with our real world' (Ma, 2022). Moreover, when 'executing an attack in the physical world, augmented reality objects like virtual arrows can help guide violent extremists and identify marked targets' (Elson et al., 2022). Finally, similar to the aforementioned situation of Anders Breivik who reportedly used Call of Duty for training, there is the potential that the metaverse could take this to the next level: where people could practice by playing games in virtual 3D spaces that are constructed to resemble one of their targets.

It is clear that the development of the metaverse is going to take time and will be ongoing. However, this does not mean that no thought should be given to safety and security. Quite the contrary, it should be considered at the very earliest point by 'a diverse range of people and organizations,

including academic researchers, [and] those developing [it]' (Elson et al., 2022). This needs to be built into the developing set of systems that might loosely be termed the 'metaverse'.

ADDRESSING GAMIFICATION WITH P/CVE

Considering the fact that research into gamified (violent) extremism is still in its infancy, it is not surprising that the evidence base for addressing this type of extremism through P/CVE interventions is even more limited (Schlegel, 2021b). For example, it remains unclear whether gamified (violent) extremism requires specifically designed interventions, as opposed to applying 'traditional' P/CVE tools, and how useful gamified P/CVE designs are in addressing gamified as well as non-gamified forms of (violent) extremism. The existing evidence suggests that as gamification and sustained engagement with gaming communities in the context of radicalisation and recruitment into (violent) extremism can create a sense of unity and a common cause, much like offline sports can do, responses to this type of extremism require similarly strong positive social interactions and a sense of community (Frenett and S, 2021).

Therefore, while particularly engaging offline intervention designs may be successful in addressing this challenge, gamified interventions arguably have the potential to be effective in drawing at-risk users in and achieving sustained engagement with P/CVE messages (Schlegel, 2021c). This could range from adding gamified elements to existing counter- or alternative-narrative campaigns to using 'serious' educational games in political education in schools or wider P/CVE programmes or integrating gamified elements into digital street and youth work (Schlegel, 2021d). The main benefit of gamifying elements of P/CVE interventions, for example, by including PBLs or quests, is that this can make interventions stand out among the wealth of online content and encourage users to engage with this content (Schlegel, 2021). Another potential benefit of using gamified elements in P/CVE interventions is that these interventions can be tailored to the needs of different types of people. For example, different gamified aspects of interventions can fulfil the needs of individuals who are seeking purpose and meaning, those who are looking for connection and belonging, and those who are striving for internal fulfilment or external rewards and achievements (Schlegel, 2021b).

However, it should be noted that using gamification elements for narrative campaigns and other online interventions is likely to be most effective for primary prevention, as individuals who are more firmly committed to extremist ideologies require more direct engagement, for example, through a combination of different intervention techniques (Schlegel, 2021d). Additionally, gamified elements are only likely to be effective in resonating with the intended target audience when they contribute to a coherent experience, while randomly integrating as many gamified tools as possible into an intervention design is not likely to lead to increased engagement with the content (Schlegel, 2021d). Moreover, while adding gamified elements to an intervention can be an effective way of disseminating the content to larger audiences, this does not necessarily mean that the intervention will therefore be more impactful in P/CVE. Considering the limitations of counter- and alternative interventions as well as other types of communication interventions in the P/CVE space, reach alone should not be considered as a reliable measure of impact (Jones, 2020).

EXISTING P/CVE PRACTICES

While gamification and the integration of gaming elements into wider P/CVE designs are still in their early stages, some approaches do exist – with varying degrees of evidence available regarding outcomes and impact. These examples offer some ideas of ways in which the element of gamification can be used positively to engage participants in P/CVE programming or increase its effectiveness and impact. A selection of these are discussed below.

- **DECOUNT** – An online game that integrates counter- as well as alternative narratives. The game was developed in Austria on the basis of in-depth research on radicalisation processes, the needs of the intended target audience, namely individuals vulnerable to radicalisation and young people in general, as well as their specific content- and design preferences. The role-play game takes users through the lives of different characters and evolves depending on the decisions the player makes. An evaluation of the intervention, which combined a quasi-experimental design and focus group discussions, indicated success in promoting critical thinking and raising awareness about extremist narratives among participants (Pisoiu and Lippe, 2022).

- **Flashpoints** – Also in the category of 'serious games', the International Centre for Counter-Terrorism (ICCT) in the Netherlands developed an interactive game exploring counter-terrorism decision-making in the context of the 2011 terrorist attack in Norway. The game takes users through various counter-terrorism dilemmas from the perspective of key actors dealing with the aftermath of the attack. The game is intended for audiences aged 12 and up (ICCT, 2020).

- **Fortius** – Part of the YoungRes programme, the P/CVE project Fortius, which was implemented in Spain, includes video games as educational tools as part of a wider learning process aiming to strengthen the psychological resilience of children aged 8-12. Game elements were used at different stages of the project to help solidify the educational progress (Menendez-Ferreira et al., 2020).

- **Good Gaming-Well Played Democracy** – Launched by the German Amadeu Antonio Foundation, this pilot project works on developing capacities for the prevention of radicalisation and violent extremism among young people with an affinity for computers and video games (gamers). The project aims to: (1) integrate digital street work techniques into gaming spaces; (2) work with digital influencers on awareness-raising campaigns for 'good gaming' (i.e. gaming within the boundaries of a democratic and pluralistic society); and (3) work with game developers and event organisers to develop and implement a range of prevention and de-radicalisation measures (Demokratie leben, n.d.).

- **Jamal al-Khatib** – Developed by the civil society organisation 'turn – Association for the prevention of violence and extremism', this campaign aims to provide alternative narratives to Islamist propaganda by applying the techniques of online street work and narrative biography (European Commission, 2020). The campaign applies style elements from video games such as Assassin's Creed while taking users through the biographic narrative of the main character of the game, Jamal al-Khatib (Schlegel, 2021a). The target audience consists of adolescents and young adults vulnerable to radicalisation, as well as young people who already sympathise with jihadist groups and narratives (Lippe and Reidinger, n.d.).

- **Digital Games for Peace challenge** – Designed as part of the UNESCO 'Digital Games for Peace' initiative, four game concepts were presented in February 2022 following an 8-month challenge which aimed to build the capacities of young people from South and Southeast Asia to develop game-based P/CVE tools. The four resulting game concepts – All Here, DiverCity, Reverse, and Slate – range from inclusive, city-builder games to adventure games and biographic, narrative-style games. The target audience differs according to the respective game and ranges from children to youth and young adults (UNESCO, 2022).

POLICY AND RECOMMENDATIONS

Video-gaming, particularly online gaming, which has been rapidly developing and gaining in popularity worldwide with the continual evolution of technology, has sparked a new and increasing focus on the need to understand and grapple with the potential harms associated with this field. Policymakers are becoming increasingly concerned with the topic of gamifying (violent) extremism, and, for that matter, other associated intersections between video-gaming and (violent) extremism. However, it appears as though gamification as a specific concept is not something that can be specifically legislated or countered within policy. This does not mean that policy is not valid or important – quite the contrary. It is the individual parts of gamification, such as live-streaming, which can be focussed upon and, in many instances, is being focussed upon. In fact, there remains very little policy which directly addresses the issue of gaming; instead it is often addressed under the umbrella of more wide-ranging online harms or digital services legislation.

There has been an ongoing debate over the last several decades about whether violent video games lead to violence, but the research has never shown a causative link (Lamphere-Englund et al., 2021). The gamification of attacks has developed a returning level of interest in this question, particularly as there have been distinct overlaps between attacks, as discussed earlier. From the relatively new focus on this particular online space in relation to (violent) extremism and due to the different typologies through which the issues of gaming and (violent) extremism can be discussed, it remains clear that more research is needed on the impact of the gamification of (violent) extremism and its dynamics, as well as more evidence gathered on the extent and nuances of the threat within the wider world of online gaming.

Additionally, it is important to emphasise that gamification is just a tool – it can be wielded both negatively and positively. Gamification has long been used (even before the world of online gaming) as a way to make learning more fun and to encourage positive behaviours, or as a method of gathering disparate groups and engaging with them (e.g. there are civil society programmes using games as a way to engage with youths, probation programmes that use games as group rehabilitation activities, etc.). These positive uses of gamification can potentially be harnessed to improve the outreach and effectiveness of P/CVE, as discussed in Section 3. As the landscape continues to develop and policymakers look at what can and should be done to counter the threat, even if it is in its constituent parts, there are some recommendations emerging from this research and the current threats, as well as recommendations that emerge from the lack of existing research and the unknown potential future directions in which this phenomenon could develop. These are discussed below.

RECOMMENDATIONS

- **There is an overwhelming need for more methodologically rigorous (empirical) research.** This is most particular in the context of the global pandemic and the increase in numbers of gamers, as well as the increased reliance of people upon online gaming for social connection during lockdowns, etc., where the level of concern and discussion around the issue of gaming and (violent) extremism has grown exponentially faster than that of the body of research for evidencing potential harms and benefits. While policymakers wish to discuss what is to be done, researchers are cautioning that without first gathering the data, we are basing recommendations upon incomplete evidence bases and assumptions.

  > In relation to the issue of the gamification of (violent) extremism, in particular, further development of the research on gaming theory and its relationship with both (violent) extremism and online gaming and gaming-adjacent spaces is needed.

> Additionally, more research is needed on whether there are certain EU MS contexts (e.g. cultural, linguistic, historical, gendered, etc.) in which gamification or other dynamics of gaming may present more or less of a threat than others.

- **Clarify for policymakers and within the policies themselves (as they are developed) the different typologies through which the gaming issue can be discussed** in relation to (violent) extremism and how these different approaches to looking at the potential harms and threats would impact policy. These different typologies offer various approaches to understand the challenges and opportunities gaming presents, and each needs to be understood, evidenced, and considered individually (i.e. the difference between the gamification of (violent) extremism and the production/modification of games with extremist content, etc.) as well as being part of cumulative impact questions.

- **Avoid the stigmatisation of gaming and gamification.** Online gaming presents an equal opportunity for positive and negative experiences and applications, as does gamification itself.

- **Content must be proactively accounted for.** While content moderation is arguably a necessary element of the mitigation of harm, it is not the complete solution. More research is needed to better understand how to prevent the radicalisation of individuals and the entry of (violent) extremist content into online gaming and gaming-adjacent spaces.

  > This would likely include raising awareness and understanding of the online gaming space (including common terminology and imagery, etc.) among civil servants, teachers, police, social workers, etc. and those that may be able to spot early warning signs of concern and intervene proactively.

  > Additionally, this can include raising awareness within the gaming community itself and encouraging positive influencers and engagement.[4]

- **Explore, employ and evaluate the positive uses of gamification within P/CVE.** Further monitoring and evaluation of positive gaming interventions is needed to continue gathering data on their effectiveness in countering (violent) extremism and the gamification of violence. Digital P/CVE interventions can utilise gamification in order to make content more engaging, familiar, interactive, etc., especially for those already familiar/engaged in the online gaming space (see Schlegel, 2021d).

[4] At the end of 2022, the EU Internet Forum will publish a handbook of existing best practices from civil society and tech companies to empower gaming communities to raise awareness about and respond to (violent) extremism in their space, as well as to better protect children. This handbook can serve as a tool for all EU Internet Forum members to help support and strengthen their engagement with gaming communities.

CONCLUSION

This conclusion outlines the potential value and limitations of gamification as a concept in relation to (violent) extremism. This is underpinned by considering whether gamification is a purposeful tactic used by (violent) extremists or whether this is a natural approach, similar to the general intersection between video-gaming and (violent) extremism (Lakhani, 2021), as those involved are gamers themselves. With top-down gamification, it is perhaps more easily identifiable as a strategy that has been considered and enacted in order to achieve some outcome (e.g. recruitment, behaviour change, consolidating commitment, etc.) through various social/psychological processes. However, with bottom-up gamification, it is far more difficult to make this distinction. Taking Christchurch as an example, it is unclear whether Tarrant intentionally gamified his attack as a means to recruit, radicalise, and spread propaganda, or whether his attack was organically constructed this way as he was considered to be an 'avid internet user and online gamer' (Royal Commission of Inquiry, 2020: 166), or a combination of both. In other words, perpetrators could gamify their attack as they are fully immersed within a gaming culture or subculture and gaming is something that forms part of their everyday lives, but also as they are attempting to appeal to particular communities in order to disseminate their message, inspire other attacks (as discussed in the previous section) or to gain approval and generate support for their attack.

However, gamification's usefulness and value as a concept is not without its own wider considerations. Although many argue that gamification can be 'a useful tool to achieve behavioral change' (Schlegel, 2020: 6), the 'underlying mechanisms of gamification are still contested and some assume that its effects are overestimated as positive effects could be caused by the novelty of these applications rather than gamification itself' (ibid.). It is clear that 'gamification does not automatically increase user commitment' (Lakhani and Wiedlitzka, 2022: 13), where '[s]imply putting a leaderboard up and awarding some points to employees, students or users is unlikely to be enough to facilitate sustained engagement …' (Schlegel, 2021: 2). Thus, like 'with other forms of violent extremism, it is more than likely a complicated multifaceted area, inhabited by human actors who have individual and overlapping motivations, conditions, needs and desires, etc.' (Lakhani and Wiedlitzka, 2022: 13). Furthermore, others argue that although it is broadly accepted that gamification has the potential to impact behaviour, how this is achieved is still debated (Mitchell et al., 2020).

Although gamification alone may not be enough to motivate people to engage in (violent) extremism, it has the potential to play some important roles. This includes enabling perpetrators to be able to publicise their attack to a wider audience, and appealing to a broader and younger audience (Lakhani and Wiedlitzka, 2022). It also affords 'the opportunity to present extremist content in a fun and engaging manner' (Schlegel, 2020: 9), enabling people to blur boundaries between the real and virtual world, and a way to structure reality (Schlegel, 2020a). Lastly, it can have 'a cumulative continuum of "collective" extreme-right violence' (Macklin, 2019: 26). This means that it 'can decrease individuals' thresholds to violence every time an act of violence occurs … [and] regardless of whether gamification alone motivates individuals to participate in violent extremism, it can have an effect on motivating those who do participate in causing more death and destruction than the previous attacker' (Lakhani and Wiedlitzka, 2022: 13). As Kim and Werbach (2016: 160) explain, 'gamification in some contexts (e.g., wartime) can have a negative impact upon the character of involved parties and motivate a socially unacceptable degree of moral indifference to widely accepted fundamental human values such as the sanctity of life.'

This consolidated overview has explored the increasingly important concept of gamification, i.e. the application of gaming and game-design principles within non-gaming environments, within the context of (violent) extremism. What is clear is that gamification is a new and emerging area of concern and of study. Much of the evidence to date appears to be anecdotal in nature, although work is starting to be undertaken in this field. Similar to the general intersection between (violent)

extremism and video-gaming (Lakhani, 2021), there needs to be to be further empirical investigation to determine the potential (or lack) of gamification as a tool to radicalise, recruit, and motivate acts of violence. As Lakhani and Wiedlitzka (2022) argue, it is clear that the study of gamification is in its infancy, yet is a topic that has the potential to play an increasingly prominent part in future attacks due to the increasing popularity of video-gaming.

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REFERENCES

Brachman, J. and Levine, A. (2011), 'The World of Holy Warcraft: How al Qaeda is using online game theory to recruit the masses', Foreign Policy, 13 April 2011. https://foreignpolicy.com/2011/04/13/the-world-of-holy-warcraft/

Clement, J. (2022), 'Online gaming – statistics & facts', Statista, 9 May 2022. https://www.statista.com/topics/1551/online-gaming/#dossierKeyfigures

Conway, M., Scrivens, R. and McNair, L., 2019, 'Right-wing extremists' persistent online presence: History and contemporary trends', ICCT Policy Brief. https://icct.nl/app/uploads/2019/11/Right-Wing-Extremists-Persistent-Online-Presence.pdf

Crawford, B. and Keen, F. (2020), 'The Hanau Terrorist Attack – How Race Hate and Conspiracy Theories are Fueling Global Far-Right Violence', *CTC Sentinel*, Vol. 13, no. 3, pp. 1–8.

Dauber, C. E., Robinson, M. D., Baslious, J. J., Blair, A. G., Zeidel, R. and al-Hashimi, H. (2019), 'Call of Duty Jihad: How the Video Game Motif has Migrated Downstream from Islamic State', *Perspectives on Terrorism*, Vol. 13, no. 3, pp. 17–31.

Dearden, L. (2019), 'White supremacist behind "Punish a Muslim Day" jailed for 12 years', *Independent*, 3 September 2019. https://www.independent.co.uk/news/uk/crime/david-parnham-court-punish-muslim-day-sentence-white-supremacist-trial-a9090186.html

Demokratie leben (n.d.), 'Good Gaming – Well Played Democracy', Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, n.d.. https://www.demokratie-leben.de/projekte-expertise/projekte-finden-1/projektdetails/good-gaming-well-played-democracy-200

Deterding, S., Dixon, D., Khaled, R. and Nacke, L. (2011), 'From Game Design Elements to Gamefulness: Defining "Gamification", *MindTrek 2011 – Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*, pp. 9–15; 28–30 September 2011, Tampere, Finland.

EC (n.d.), 'Jamal al-Khatib', European Commission, n.d.. https://ec.europa.eu/home-affairs/networks/radicalisation-awareness-network-ran/collection-inspiring-practices/ran-practices/jamal-al-khatib_en

Elson, J. S., Doctor, A. C. and Hunter, S. (2022), 'The Metaverse Offers a Future Full of Potential – For Terrorists and Extremists, Too', VoxPol, 2 February 2022. https://www.voxpol.eu/the-metaverse-offers-a-future-full-of-potential-for-terrorists-and-extremists-too/

EU (2020), 'Online gaming in the context of the fight against terrorism', EU Counter- Terrorism Coordinator, Council of the European Union. https://data.consilium.europa.eu/doc/document/ST-9066-2020-INIT/en/pdf

Frenett, R. and S, J. (2021), 'Online Gaming Platforms', VoxPol, 8 September 2021. https://www.voxpol.eu/online-gaming-platforms/

Gilbert, N. (n.d.), 'Number of Gamers Worldwide 2022/2023: Demographics, Statistics, and Predictions', Finances Online, n.d. https://financesonline.com/number-of-gamers-worldwide/

Hamari, J. and Koivisto, J. (2015), '"Working out for likes": An empirical study on social influence in exercise gamification', *Computers in Human Behavior*, Vol. 50, pp. 333–347.

Hoffman, B. and Ware, J. (2020), 'The Challenges of Effective Counterterrorism Intelligence in the 2020s', Lawfare blog, 21 June 2020. https://www.lawfareblog.com/challenges-effective-counterterrorism-intelligence-2020s

Hope not hate (2019), 'Far-Right Attack on Yom Kippur', HOPE not hate, 10 October 2019. https://hopenothate.org.uk/2019/10/10/far-right-attack-on-yom-kippur/

Ibrahim, Y. (2020), 'Livestreaming the "wretched of the Earth": The Christchurch massacre and the "death-bound subject"', *Ethnicities*, Vol. 20, no. 5, pp. 803–822.

ICCT, (n.d.), 'Flashpoints: An Interactive Game on Counter-Terrorism', ICCT, n.d. https://icct.nl/flashpoints-game/

Jones, M. (2020), 'Through the Looking Glass: Assessing the Evidence Base for P/CVE Communications', *RUSI Occasional Papers*, 17 July 2020. https://rusi.org/publication/occasional-papers/through-looking-glass-assessing-evidence-base-pcve-communications

Joshi, S. (2022), 'What Is the Metaverse? An Explanation for People Who Don't Get It', Vice, 15 March 2022. https://www.vice.com/en/article/93bmyv/what-is-the-metaverse-internet-technology-vr

Kim, T. W. and Werbach, K. (2016), 'More than just a game: ethical issues in gamification', *Ethics and Information Technology*, Vol. 18, no. 2, pp. 157–173.

Lakhani, S. (2021), 'Video Gaming and (Violent) Extremism: An Exploration of the Current Landscape, Trends, and Threats', Radicalisation Awareness Network, European Commission. https://ec.europa.eu/home-affairs/system/files/2022-02/EUIF%20Technical%20Meeting%20on%20Video%20Gaming%20October%202021%20RAN%20Policy%20Support%20paper_en.pdf

Lakhani, S. (2022), 'The Gamification of Violent Extremism: An Empirical Exploration of the Christchurch Attack', GNET Insights, 10 June 2022. https://gnet-research.org/2022/06/10/the-gamification-of-violent-extremism-an-empirical-exploration-of-the-christchurch-attack/

Lakhani, S. and Wiedlitzka, S. (2022), '"Press F to Pay Respects": An Empirical Exploration of the Mechanics of Gamification in Relation to the Christchurch Attack', *Terrorism and Political Violence*, pp. 1–18.

Lakomy, M. (2019), 'Let's play a video game: Jihadi propaganda in the world of electronic entertainment', *Studies in Conflict & Terrorism*, Vol. 42, no. 4, pp. 383–406.

Lamphere-Englund, G., McDonnell, S. and Bunmathong, L. (2021), *State of Play: Reviewing the Literature on Gaming & Extremism*, Extremism and Gaming Research Network.

Lamphere-Englund, G. and White, J. (2022), 'The Buffalo Attack and the Gamification of Violence'.

Lippe, F. and Reidinger, v. (n.d.), 'Jamal Al–Khatib – Mein Weg ! NISA x Jana, Abschlussbericht der Begleitenden Praxisforschung', turn – Verein für Gewalt- und Extremismusprävention. https://www.bpb.de/medien/307271/Lippe%20Reidinger%20Jamal%20al-Khatib%20-%20Mein%20Weg%20X%20NISA%20x%20Jana%20-%20Abschlussbericht_WEB.pdf

RUSI Commentary, 16 May 2022. https://rusi.org/explore-our-research/publications/commentary/buffalo-attack-and-gamification-violence

Ma, A. (2022), 'What is the metaverse, and what can we do there?', The Conversation, 23 May 2022. https://theconversation.com/what-is-the-metaverse-and-what-can-we-do-there-179200

Macklin, G. (2019), 'The Christchurch attacks: Livestream terror in the viral video age', *CTC Sentinel*, Vol. 12, no. 6, pp. 18–29.

Macklin, G. (2022), '"Praise the Saints": The Cumulative Momentum of Transnational Extreme-Right Terrorism'. In: Dafinger, J. and Florin, M. (eds.), *A Transnational History of Right-Wing Terrorism: Political Violence and the Far Right in Eastern and Western Europe since 1900*, London, UK: Routledge, 2022.

Maza, C. (2018), '"Punish a Muslim Day" Game Spreads Across U.K. in Letters Urging People to Burn Mosques and Rip Off Hijabs', Newsweek, 3 December 2018. https://www.newsweek.com/punish-muslim-game-spreads-across-uk-letters-urging-people-burn-mosques-and-841020

McDonald, K. (2018), *Radicalization,* John Wiley & Sons.

McLaughlin, T. (2019), 'The Weird, Dark History of 8chan', Wired, 6 August 2019. https://www.wired.com/story/the-weird-dark-history-8chan/

Menendez-Ferreira, R., Torregrosa, J., Panizo-Lledot, A., Gonzalez-Pardo, A. and Camacho, D. (2020), 'Improving Youngsters' Resilience through Video Game-Based Interventions', *Vietnam Journal of Computer Science*, Vol. 7, no. 3, pp. 263–279.

Mitchell, R., Schuster, L. and Jin, H. S. (2020), 'Gamification and the impact of extrinsic motivation on needs satisfaction: Making work fun?', *Journal of Business Research*, Vol. 106, pp. 323–330.

Pisoiu, D. and Lippe, F. (2022), 'The name of the game: Promoting resilience against extremism through an online gaming campaign', *First Monday*, Vol. 27, no. 5.

RAN (2020), 'Extremists' Use of Video Gaming – Strategies and Narratives', Conclusions Paper, Radicalisation Awareness Network, European Commission. https://ec.europa.eu/home-affairs/system/files/2020-11/ran_cn_conclusion_paper_videogames_15-17092020_en.pdf

RAN (2021), 'Digital Challenges', Radicalisation Awareness Network, European Commission. https://ec.europa.eu/home-affairs/spotlight-digital-challenges_en

Ratan, R. and Lei, Y. (2021), 'What is the metaverse? 2 media and information experts explain', The Conversation, 12 August 2021. https://theconversation.com/what-is-the-metaverse-2-media-and-information-experts-explain-165731

Ravenscraft, E. (2022), 'What Is the Metaverse, Exactly?: Everything you never wanted to know about the future of talking about the future', Wired, 25 April 2022. https://www.wired.com/story/what-is-the-metaverse/

Robinson, N. and Whittaker, J. (2020), 'Playing for Hate? Extremism, terrorism, and videogames', *Studies in Conflict & Terrorism*, pp. 1–36.

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I. and Pitt, L. (2015), 'Is it all a game? Understanding the principles of gamification', *Business Horizons*, Vol. 58, no. 4, pp. 411–420.

Royal Commission of Inquiry (2020), 'Report: Royal Commission of Inquiry into the terrorist attack on Christchurch masjidain on March 15, 2019, 2020', Royal Commission of Inquiry. https://christchurchattack.royalcommission.nz/

Sailer, M., Hense, J. U., Mayr, S. K. and Mandl, H. (2017), 'How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction', *Computers in Human Behavior*, Vol. 69, pp. 371–380.

Schlegel, L. (2020), 'Jumanji Extremism? How Games and Gamification Could Facilitate Radicalization Processes', *Journal for Deradicalization*, no. 23, pp. 1–44.

Schlegel, L. (2020a), 'Can You Hear Your Call of Duty? The Gamification of Radicalization and Extremist Violence', European Eye on Radicalization, 7 March 2020. https://eeradicalization.com/can-you-hear-your-call-of-duty-the-gamification-of-radicalization-and-extremist-violence/

Schlegel, L. (2021), 'The Role of Gamification in Radicalization Processes', Working Paper 1/2021, Modus|zad. https://modus-zad.de/wp-content/uploads/2021/01/modus-working-paper-12021.pdf

Schlegel, L. (2021a), 'Extremists' use of gaming (adjacent) platforms: Insights regarding primary and secondary prevention measures', Radicalisation Awareness Network, European Commission. https://ec.europa.eu/home-affairs/networks/radicalisation-awareness-network-ran/publications/extremists-use-gaming-adjacent-platforms-insights-regarding-primary-and-secondary-prevention_en

Schlegel, L. (2021b), 'Connecting, Competing, and Trolling: "User Types" in Digital Gamified Radicalization Processes', *Perspectives on Terrorism*, Vol. 15, no. 4, pp. 54–64.

Schlegel, L. (2021c), 'Positive Play: Can gamification support P/CVE measures?', *Journal EXIT-Deutschland*, pp. 2–6.

Schlegel, L. (2021d), 'The gamification of violent extremism & lessons for P/CVE', Radicalisation Awareness Network, European Commission. https://ec.europa.eu/home-affairs/networks/radicalisation-awareness-network-ran/publications/gamification-violent-extremism-lessons-pcve-2021_en

UNESCO (n.d.), 'Digital Games for Peace', UNESCO, n.d. https://mgiep.unesco.org/article/four-incredible-games-for-pve

Wick, S. (2020), 'Islamic State's Use of Gamification and Low-Tech Terror Tactics', GNET Insights, 2 September 2020. https://gnet-research.org/2020/09/02/iss-use-of-gamification-and-low-tech-terror-tactics/