
Jumanji Extremism? How games and gamification could facilitate radicalization processes

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Abstract

While the last years have seen increased engagement with gaming in relation to extremist attacks, its potential role in facilitating radicalization has received less attention than other factors. This article makes an exploratory contribution to the theoretical foundations of the study of gaming in radicalization research. It is argued that both top-down and bottom up gamification have already impacted extremist discourse and potentially radicalization processes but that research on gamification in other contexts points to a much wider application of gamification to extremist propaganda distribution tools in the future. The potential influence of video games on radicalization processes exceeds the transfer of the popular argument that exposure to violent media leads to desensitization to the context of radicalization and includes the exploitation of pop culture references, increases in self-efficacy regarding violence, and the direct experience of retro-pian visions through the content of games.

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Introduction

Joe Johnston's movie *Jumanji* from 1995 and the newer sequels from 2017 and 2019 revolve around a board game coming to life. The protagonists are transported into the game and *Jumanji* becomes their reality. Only by beating the game they can return to their lives outside of the fictional world. *Jumanji* redefines the players' reality; there is no longer a distinction between one's role as a player and one's role as a human being. Players literally *become* their avatars. Radicalization is a process that also redefines an individual's perception of reality and can fully immerse an individual in a parallel world removed from mainstream society. The

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Jumanji slogan “A game for those who seek to find a way to leave their world behind” may also apply to radicalized individuals leaving mainstream society - and often everything they previously cared about - behind; they are embarking on a new endeavor with a new identity and leave what used to be ‘their’ world.

Radicalization into extremism can hardly be considered as ‘play’. However, elements usually associated with games and popular culture have featured in propaganda and radicalization efforts, including the footage collected through HD-cameras attached to helmets of fighters, alluding to the visual design of first-person-shooter (FPS) games such as *Call of Duty* (Scaife, 2017) or the application of gamified elements such as points and rankings (Ebner, 2019). While (video) games have been part of the extremist ‘toolkit’ for quite some time (Lakomy, 2019), the issue received heightened attention with the rise of Islamic State (hereafter ISIS), which utilized gaming references extensively and allegedly programmed its own video game, *Salil al-Swarim* [The Clanging of the Swords] (Al-Rawi, 2018). After being made increasingly popular by ISIS, the use of games and gamification elements has ‘migrated downstream’ to other jihadist groups (Dauber et al, 2019). Right-wing extremists too have gained increased attention for their ‘gamified’ attacks. For instance, the attacks in both Christchurch and Halle have been live streamed by the attackers, invoking visual imagery commonly associated with FPS games (Mackintosh & Mezzofiore, 2019). This indicates a move towards the inclusion and rising prominence of gamified elements in propaganda efforts, which may potentially influence radicalization processes.

While the last years have seen an increase in engagement with the subject (e.g. Lakomy, 2019; Schlegel, 2018; Al-Rawi, 2018), games and gamification have so far received less attention than other factors potentially facilitating radicalization processes. The present article explores some of the mechanisms by which games and gamified applications could come to facilitate radicalization processes. The article should be read as a Weberian ideal type analysis; not as a holistic account of radicalization but as an exploration of how games and gamification *could*, for *some* individuals, increase the *susceptibility* to radicalization or *facilitate* radicalization processes already underway. Although both games and elements of

gamification can be applied offline, the article focuses on an exploration of online applications, social media and video games, placing it within the discourse on online-radicalization (Baaken & Schlegel, 2017). Because both cognitive and behavioral radicalization processes relate to the acceptance or the exercise of violence, only violent video games are treated as the basis for the discussion on the role of games in radicalization. Nevertheless, an analysis of the potential role of non-violent games it to be encouraged in future studies.

The present analysis is conducted from the standpoint of the player or user, primarily motivated by seeking entertainment. While extremist organizations could and indeed have used (Thurrott, 2001; Pidd, 2012) so-called *serious games* (Bittner & Schipper, 2014), which are intended not for entertainment but purely for training purposes such as war gaming (Röhle, 2014), the present discussion is limited to *casual games* (Rapp, 2017) with an entertainment appeal for the player. In the context of radicalization, playing serious games with instrumental intent requires an already advanced radicalization process and would likely be used for specific training in the preparation of an attack. For reasons of conceptual clarity, the present article focuses on how games and gamification elements could facilitate susceptibility to radicalization, not on training already radicalized individuals. While it is likely that different ideological justifications for extremist violence would result in different gamified applications and different content of games, this article is not focused on ideologically-determined details of the gaming content but puts forward a theoretical exploration of general mechanisms by which games and gamified elements may influence radicalization processes.

The article is structured as follows: After locating games and gamification within the wider discourse on (online-) radicalization, potential uses of gamification elements for the facilitation of radicalization processes and the psychological processes underlying it are examined. Then, it is analyzed how video games could enhance susceptibility to radicalization or facilitate radicalization processes already underway. The article closes with a discussion of potential limitations and a conclusion.

Locating games and gamification within the wider discourse on radicalization

The discourse on violent video games

Violence in communication media has been researched and discussed for a long time: From Tertullian lamenting the possibility that watching gladiators could lead to increased violence (Dowsett & Jackson, 2019) to more modern media such as cinema, comic books and music (DeCamp, 2014), the display of violence has been a topic of hot debates among scholars and the public. The depiction of violence in video games (Hartmann et al, 2014) as well as the correlation between video games and violent or aggressive behavior has been the subject of a lot of scholarly inquiry (Engelhardt et al, 2011; Greitemeyer, 2014) and has been controversially debated over the last thirty years, in politics and public discourse (Crump, 2014; Robinson, 2012) and within the gaming community (Nauroth et al, 2014). What sets video games apart from previous media are their interactivity and the agency of the player; that is, the active role players take in shaping the story in an increasingly realistic setting, which may increase the degree of influence that consuming these games has on the perception and behavior of the individuals playing. Video games can immerse players, allowing them to partially merge with their avatar and identify themselves with the game characters (Fischer et al, 2010). The higher the identification with the avatar, the larger the impact of the violent game (Lin, 2013). Video games influence players on a neurological level (Engelhardt et al, 2011) as well as by contributing to a normalization of violent behavior (Greitemeyer, 2014), but there is also evidence that those with higher levels of aggression choose to play video games more often (Przybylski et al, 2009) and that games are only one of many interacting factors on a pathway to violence (DeCamp, 2015).

A large and diverse literature has emerged, including work on how video games influence individual (acceptance of) aggressive behavior (Funk et al, 2003; Beck et al., 2012), youth delinquency (DeLisi et al, 2012), societal violence (Ferguson, 2015) or (school) shootings (Crump, 2014; McDonald, 2018). The findings are not always conclusive, they are ‘all over the map’ (Wolock, 2004), and the causal relationship between games and violence is

therefore still contested (Gunter & Daly, 2012; Ferguson, 2011; Ferguson & Wang, 2019). While the American Psychological Association (APA) has found no *causal* relationship between violent games and violent *behavior* (APA, 2020), confirming that violent behavior is a multifaceted phenomenon, studies have shown that violent games do have effects on players *perceptions* of violence (Lin, 2013; Greitemeyer, 2014) and recent findings by the APA confirm the link between violent video games and both physical and verbal aggression (as opposed to outright violence) (APA, 2020). This shows that while there is no straightforward pathway from violent games to violent deeds, violent video games can influence players negatively.

The discourse on gamification

Gamification is a relatively new topic with a notable increase in research since the 2010s (Sailer et al, 2017) and has originally been applied in advertising context (Bittner & Schipper, 2014). The term gamification refers to the “use of game design elements within non-game contexts” (Deterding et al., 2011, p.1). By introducing elements such as points, leaderboards and badges, non-gaming contexts can be gamified. Crucially, gamification is aimed at facilitating behavioral change in the users (Robson et al, 2015) and is often applied in the commercial sector to engage service users (Blohm & Leimeister, 2013) or employees (Mitchell et al, 2020). Gamification has also been applied in educational settings from the primary-level (Jagust et al, 2018) to university students (van Roy & Zaman, 2019) and for autistic children (Malinverni et al, 2017), employee and customer experience (Robson et al, 2016), library usage (Prince, 2013), health (Gonzalez et al, 2016), exercise (Hamari & Koivisto, 2015), work (Robson et al, 2016) and environmental protection (Gustafsson et al, 2010), as well as in experimental designs (Mekler et al., 2017). The public sector and governments are also increasingly aware of the potential benefits of gamification and use it, for instance, to nudge drivers to abide by the speed limit (Blohm & Leimeister, 2013).

Gamification is not without its critics, both in academia and beyond. 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 (Fleming, 2014). Practical concerns surround, for instance, the application of gamification in military contexts (Pugliese, 2016) introducing score sheets for killings and specifically recruiting gamers (Pilkington, 2015). Nevertheless, it is applied in a wide variety of situations. It is clear that gamification does not work for everyone in all contexts; age, for instance, mediates the effects of gamification on users as younger users seem to respond more favorably to gamification than older generations (Koivisto & Hamari, 2014). Generally, however, it is believed that gamification is a useful tool to achieve behavioral change, not only because it makes tasks more interesting, increases engagement (Hamari, 2017), resonates with young users acquainted to 21st century literacy (Kingsley & Grabner-Hagen, 2015) or encourages interactivity with other players (Rapp, 2014), but also because it partially fulfills players' psychological needs such as competency and social relatedness (Sailer et al, 2017).

Games and gamification in radicalization research

Both games and gamification fall within the realm of the utilization of technological advancements by extremist organizations and relate to the discourse on online-radicalization. Online-radicalization “may be described as the process of adopting beliefs justifying and/or compelling violence primarily through online media consumption” (Baaken & Schlegel, 2017). While work on online-radicalization often focuses on the role of social media applications such as *Facebook*, *Telegram* or *Twitter* (Weimann, 2010; Kaati et al, 2015; Bloom et al, 2017), we have also seen the gaming platform *Discord* being used as a communication and recruitment tool by extremists (Ebner, 2019). It is therefore not unreasonable to assume that games and gaming platforms can and are being used to facilitate (online-) radicalization processes. Although some have been critical about the role of the Internet in radicalization process (Benson, 2014; Bouhana & Wikström, 2011) and it is increasingly contested whether the properties of new media applications actually produce the ‘echo chambers’ (Winter, 2016) and filter or virtual bubbles (Pariser, 2011; Musawi, 2010)

previously viewed as decisive for online-radicalization processes (Reed et al, 2019), many ascribe an important and influential role to the online realm in facilitating radicalization (Berger & Strathearn, 2013; Carter et al, 2014; Edwards & Gribbon, 2013; McNicol, 2016; Meleagrou-Hitchens & Kaderbhai, 2017; Koehler, 2014) and it has been shown that many contemporary terrorists have engaged with Internet resources (Gill et al, 2017). Extremist organizations increasingly rely on the Internet and social media to disseminate propaganda via various channels (Weimann, 2010) and have utilized the benefits of social media communication to their ends. Radicalization research has been focused on the platforms used by extremists (Berger & Morgan, 2015), the content they disseminate through them (Ingram, 2017), how it is produced and disseminated (Bhui & Ibrahim, 2013; Sardarnia & Safizadeh, 2017, Aly, 2016), who consumes it (von Behr et al, 2013), and in which ways this content can inspire identification with extremist organizations, and motivate to act upon the ideology conveyed (Edwards & Gribbon, 2013; Schlegel, 2017).

Games and gamification are closely related to virtual applications and relate to the discourse on online-radicalization in at least three ways. Firstly, while receiving less attention in the research community, games have been part of propaganda efforts for a while. The ‘virtual caliphate’ (Brandon, 2008; Winter, 2015), for example, has included themes of ‘gaming jihad’ (Lakomy, 2019). For instance, modifications of popular games such as *Grand Theft Auto* and changing the game *Quest for Saddam* into *Quest for Bush* (Schlegel, 2018) had already been included in jihadist propaganda efforts at least since 2003. Lakomy (2019) provides an overview of how gaming has been used since 9/11 by various jihadist organizations in various locations, attesting to the utilization of games in propaganda, radicalization and training efforts. Only with the rise of ISIS, however, did games gain more attention in the popular discourse on radicalization (Al-Rawi, 2018), including in relation to the launch of its educational app *Huroof* (Lakomy, 2019), which asks children to match Arabic letters to pictures of tanks, bombs and other military images, thereby gamifying engagement with propaganda material and providing a ‘fun’ introduction to the future life as fighters in the ‘Caliphate’ (Gramer, 2017). It needs to be stressed that not only jihadists have

utilized games. Right-wing extremists too have come to understand the popular appeal of video games and have sought to utilize the gaming world for their ends. For instance, the *Daily Stormer* developed a modification of the popular game *Doom 2*, in which players can fight against the Jewish world conspiracy. One of the users commented on the game with approval, stating that there were “many options for genocide, lots of fun” (Ebner, 2019, p.143, translation mine). The inclusion of games in propaganda efforts is therefore not such a new development as it may seem, but due to the increasing accessibility and easy application of tools to modify and produce games, a proliferation of games with extremist content is not unlikely.

Secondly, the proliferation of social media and online communication capabilities made employing of games and gamification easier and more practical for extremist organizations. Many gamified applications are only possible by connecting phones, smart watches and other tools to the Internet in order to create playful online environments in various contexts, such as *NikeFuel* or *Movepill* gamifying exercise and taking medicine respectively (Blohm & Leimeister, 2013). Video games too are often not bought on discs anymore, but played as browser games, downloaded onto smartphones or designed as multiplayer online games such as *World of Warcraft* (WoW). They are therefore closely intertwined with Internet usage and the sociality associated with new forms of social media communication transcending time and space to form global gaming communities. Because smartphones and laptops as well as gaming software on them are so widespread today and users are acquainted with gamified applications, gaming is now an opportunity structure for extremist organization in reaching a large and diverse audience.

Thirdly, games and gamification may also be regarded as part of ‘jihadi cool’ (Picart, 2015) and the counterculture (Cottee, 2015) or pop culture (Hegghammer, 2017) appeal employed to increase the susceptibility to radicalization of those who are familiar with the gaming culture. Jihadists have made use of references to Western-style music videos (Stenersen, 2017) and comic books (Ostovar, 2017) before, and gaming is a natural extension of these appeals derived from pop culture. ISIS, for instance, has not only employed the

familiar imagery of FPS games in its propaganda videos by using HD helmet cameras, it has extensively referenced games directly, especially *Call of Duty*. The propaganda video *Fight them. Allah will punish them by your hands* from 2016 contains scenes from the actual *Call of Duty* game, utilizing the familiar and ‘cool’ appeal of the game for propaganda purposes (Lakomy, 2019). In 2014, Junaid Hussain, seeking to recruit Western youngsters to join ISIS, tweeted ”You can sit at home and play call of duty or you can come and respond to the real call of duty...the choice is yours” (Hussain in McDonald, 2018, p.130), again using a familiar reference point for a call to action. Therefore, referencing games and alluding to familiar content in propaganda efforts is a popular means of seeking to facilitate radicalization processes.

Both video games and gamification therefore fall within the realm of online propaganda and, potentially, online-radicalization processes. They provide tools for social interaction, utilize the ‘coolness’ of video games, and afford the opportunity to present extremist content in a fun and engaging manner. Nevertheless, the use of video games and gamification elements has received less attention than other factors contributing to radicalization processes. In the following, an attempt is made at uncovering some of the mechanisms by which both could support susceptibility to radicalization or facilitate radicalization processes already underway.

Potential role of gamification in radicalization

Because gamification has only recently come to the forefront of research efforts, the underlying mechanisms by which gamification operates, its positive and negative effects, as well as the contexts in which it can be successfully applied, are still contested. Nevertheless, it is possible to deduce at least three potential ways gamification could facilitate radicalization: (a) by providing gratification of psychological needs, (b) by gamifying the teaching of ideology, and (c) by increasing the appeal of extremist tools.

(a) Gamification can increase user satisfaction and contribute to the gratification of psychological needs. By far the most used framework in gamification studies is self-determination theory (van Roy & Zaman, 2019), postulating that gamification can help to meet three basic psychological needs: feeling competent, feeling autonomous, and experiencing social relatedness (Sailer et al., 2017). For instance, the ‘PBL-triad’ of points, badges and leaderboards positively affects the feeling of competency, providing users with measurable and visible indicators of success. The triad also provides clear and easily obtainable goals: Users know what they have to achieve in order to receive a new badge or climb up the leaderboard. Completion of these goals makes users feel good about themselves. This positive feeling leads to greater likelihood of continued engagement (Hamari, 2017). By providing external incentives to engage, gamified extremist tools can satisfy basic psychological needs, which increases the likelihood that users will continue to participate, thereby normalizing the engagement with extremist content and potentially facilitating radicalization processes. Gamification also facilitates cognitive-emotional mechanisms (Mullins & Sabherwal, 2020). By promoting positive emotional reactions such as excitement, feeling entertained and having fun, gamification can increase attention paid to gamified content and improve memory retention of it, which could support radicalization processes. When aided by emotional satisfaction during engagement, extremist content could resonate with users, be retrieved more easily from memory, and potentially aid radicalization processes.

(b) During the coming years, gamification is estimated to play an increasingly important role in educational settings for both children and adult learners (Kingsley & Grabner-Hagen, 2015). Terrorist organizations have long understood the power of controlling educational settings and teaching their extremist ideologies to young and old in an appealing and engaging manner, exemplified, for instance, by ISIS educational app for children but also educational projects by Hezbollah and ETA (Gramer, 2017; ADL, 2016). Concerning the use of music, Pieslak writes “when attempting to draw people to radical ideology, do not lead with the ideology if you can find a more attractive garment in which to dress the message.”

And music provides very fashionable clothes” (Pieslak, 2017, p. 75). The same might be said about gamification. If one has the opportunity to make ideology accessible to adults and youngsters in ‘fashionable clothes’, it is preferable to dry modes of instruction. New technological advances, including gamification, have made a wealth of new opportunities available to merge educational and entertainment goals. Transmission of ideology has moved from books and physical training camps, to videos, social media and apps, each time increasing the potential reach of the message through using tools that engage more users. It is not unreasonable to assume that further developments will incorporate more gamification elements to increase user engagement with ideological contents and facilitate radicalization by making learning of ideological concepts engaging and ‘fun’.

(c) Gamification can increase the social appeal of extremist applications or forums. If gamified tools would only be another avenue of social interaction, research on social media’s role in radicalization processes would apply to them. What makes gamification unique is that it adds an element of friendly competition as well as peer motivation to reach specific goals; the successful completion of which are visible to other users. Through awarding points or badges and by affording the opportunity to compare one’s own ranking to others, gamified applications can increase motivation to engage with extremist content and other users, in order to improve one’s standing in the group by collecting more virtual points. Higher rankings provide prestige within the group and increase feelings of competence and achievement (Sailer et al, 2017). Competition and a sense of achievement may increase the willingness to engage with extremist content in order to collect even more points. Gamification can draw ambitious and competitive users deeper within the group processes as they seek to improve their score board (Robson et al, 2016). If the ‘best’ players are recognized or rewarded, those on a ‘quest for significance’ (Kruglanski et al, 2019) seeking to increase their social status could be motivated to engage with the group’s ideology and goals more thoroughly, thereby increasing the likelihood and progression of radicalization.

Gamification also offers the opportunity to support each other in reaching specific goals, thereby adding positive social influences and increasing the likelihood of building a

virtual ‘imagined community’ (Anderson, 1991). Connections to others with similar goals may not only support behavior change regarding, for instance, working out (Hamari & Koivisto, 2015), but could also facilitate ‘bunch of guys’-like group processes (Sageman, 2004) by which users support and radicalize each other through their engagement with the extremist community. Social proof theory, for instance, postulates that humans are more likely to engage in behaviors when they see others engaged as well (Hamari, 2017). A gamified virtual community can help make that engagement visible through points and badges, leading to a higher likelihood of individuals wanting to engage in the same behavior as their peers and collecting points to become part of the community. Even truly virtual sociality, such as the interaction with a computer-based companion, has been shown to increase motivation and facilitate behavior change in the users (Fox & Barnes, 2016). The social aspect of ‘playing’ together (both against and with each other) can make gamified applications very appealing for extremist organizations seeking to motivate and engage their supporters. Gamification elements do not only allow players who seek competition to compare themselves to their peers, they allow for a community to develop that facilitates behavior change in all players through social comparison and social support.

The incorporation of gamification in extremist tools is still in its infancy. Nevertheless, we have witnessed the beginning of a gamification of extremism in recent years. One may distinguish between top-down gamification, driven and implemented by extremist organizations, and bottom-up gamification, driven by those already radicalized or currently in the process of radicalizing. The former is discussed using the example of the *Patriot Peer* app, the latter with reference to livestreaming of attacks and individuals envisioning ‘quests’ during their radicalization process.

Top-down gamification

Extremist organizations are proactive agents and can actively gamify their tools to increase user loyalty, make their applications and forums more engaging, and to facilitate a - from their perspective - desirable behavior change. Examples of gamification in extremist

organizations include, for instance, different levels or ranks users can obtain in forums, reputation meters or virtual badges. One forum even included a “radicalization meter” (Hsu, 2011), a visualization of one’s ‘progress’. As extremists moved from closed forums into the open, social media and apps are now also being gamified. Ebner (2019) describes that the Identitarian Movement (Identitäre Bewegung; IB) plans to launch the app *Patriot Peer*, which is aimed at connecting like-minded individuals and facilitating networking within the movement. The more connections one acquires, the more points one gains and the better one’s ranking (Ebner, 2019). Additional points can be obtained by visiting designated cultural places and taking part in IB events (Prinz, 2017). Some assume that points could also be earned by disrupting cultural or political events of adversaries or by disturbing the operation of boats used to rescue refugees in the Mediterranean Sea (Brust, 2018).

Research suggests that the PBL-triad of gamification - points, badges and leaderboards -, used in *Patriot Peer*, can increase feelings of competence and need satisfaction in users (Sailer et al., 2017). Earning points, completing quests and improving one’s ranking, for instance, can lead to a feeling of greater competency and agency, thereby satisfying important psychological needs (van Roy & Zaman, 2019). The better one feels ‘playing’ the app and the higher the psychological satisfaction derived from using it, the greater the likelihood of sustained or even increased engagement. Gamification can support the development of user loyalty and thereby facilitate the development of a strong and engaged support base for extremist groups such as the IB. Affective states can be increased by the use of gamified applications, including, for instance, excitement when one accomplishes a task or earns a level-up (Robson et al, 2016). The more fun users experience, the more likely that engagement will continue. Writing in the context of self-regulation and motivation, Bandura (1991) explains that “extrinsic incentives can motivate partly by activating personal goals for progressive improvement” (p. 265). Collecting points and moving up the virtual ranks provide extrinsic incentives that can facilitate the players engagement by providing extrinsic motivation to reach specific goals and improve their ranking. This is because “even simple feedback of progress of trivial extrinsic incentives can enhance performance motivation once

self-satisfaction becomes invested in the activity. Satisfaction in personal accomplishment becomes the reward” (Bandura, 1991, p. 265). This may be especially true for players who score high on self-orientation (Robson et al, 2016) and whose primary goal is their personal achievement. Gamified elements could support radicalization processes by increasing the time spend on the app and providing incentives to engage with its content more thoroughly, thereby increasing exposure to extremist ideas. Through its goal of connecting like-minded individuals, *Patriot Peer* also engages players who are not oriented towards themselves but towards other players (Robson et al, 2016). These players are especially interested in social, interactive experiences. The social aspect of gamification could increase the emotional commitment to using the app and may lay the foundation group dynamics such as Sageman’s (2004) ‘bunch of guys’, especially because the app encourages users to meet face-to-face in order to earn even more points. By providing both competitive rankings and social connections, *Patriot Peer* could speak to both types of players – self-oriented and community-oriented - and facilitate their engagement with the app, its content and its users, which may increase the chances of facilitating the users’ radicalization processes.

In addition to points and rankings, the game will supposedly contain a “Patriot Radar” (Brust, 2018), which helps users locate and communicate with other patriots. Some therefore have characterized the app as a hybrid between *Tinder* and *Pokemon Go* (Prinz, 2017); a tool to find and engage other ‘patriots’, connecting with them and possibly dating them as well as fulfilling ‘quests’ to earn points by attending designated events or visiting places deemed culturally important. Gamified elements such as quests can motivate players to keep engaged and turn the gamified experience into a social event by being able to complete the quests together or by sharing photos and other evidence of the completion with other players. According to the developers, the app will be used to turn the “resistance into a game” (Brust, 2018). The inclusion of points, levels and rankings are not new and present minor and rather simple gamification elements. Nevertheless, the *Patriot Peer* example shows that extremist organizations are aware of the benefits of including gamified elements into their propaganda and networking tools and may, in the future, draw on a range of more sophisticated

gamification tools such as avatars, journeys, and more nuanced intrinsic and extrinsic rewards (Rapp, 2017), thereby strengthening the appeal of their applications for users and increasing engagement with and loyalty to the group.

Bottom-up gamification

Gamification may not only occur because extremist organizations deliberately include gamified design elements into their social media applications, forums or other tools for propaganda dissemination and recruitment. It can also occur in a bottom-up manner, driven by the individuals who are either currently in the process of radicalizing or who have radicalized and share their actions in a gamified manner. The latter has been observed in multiple recent attacks, including Christchurch (Macklin, 2019), El Paso (Evans, 2019), and Halle (Ayyadi, 2019). After the attack in Christchurch, for instance, users on *8chan* commented on the high body count the perpetrator ‘achieved’ and expressed a desire to ‘beat his score’ (Evans, 2019). This is a clear reference to gaming language used in FPS games and suggests that users refer to imaginary leaderboards when assessing the ‘success’ of shootings. Gamification, in this case, is taking place organically and in a bottom-up manner as users intuitively turn their shared experience of observing the shooting into an experience framed in gaming terms.

Perpetrators have gamified their attacks for themselves and those watching. In both Christchurch and Halle, the extremist perpetrators livestreamed their attacks and commented on their actions in real time, making references to gaming culture during the events. Watching livestreams of video games has become increasingly popular within the gaming community. In April 2018 alone, users have spent more than 128 million hours watching others play the video game *Fortnite* on the livestreaming platform *Twitch* (Bowels, 2018). Livestreaming is a way for both the perpetrator and the audience to gamify the experience. The perpetrator can mirror the livestreaming of popular online games, turning the attack into a gamified and ‘fun’ action. This is exemplified, for instance, by the fact that the shooter in Halle, despite being a native German, conducted parts of his livestream in English. By doing so, he not only

increased his potential audience but also tapped into livestreaming as an internationally popular experience (Ayyadi, 2019).

For the audience, the livestreams enable social engagement and interactive communication about the stream in real time. Just as the gaming community actively discusses livestreams of video games, observers can actively engage with the livestream of the attack. Streaming resonates with those with prior exposure to gaming contents as it offers the familiar visuals and modes of interaction. In other words, a familiarity in the form of messaging can make livestreams of attacks appealing to those belonging to the gaming community (see Schlegel, 2017 for a discussion of familiarity in online communication). Livestreams gratify certain social-cognitive and affective needs, including the need to escape reality, not only for the ‘players’ themselves but for the observers (Sjöblom & Hamari, 2017), making it an appealing tool for propagandistic purposes. Livestreams can turn attacks into gamified experiences by using visual imagery consistent with the mainstream gaming community and offering space for interactive engagement with the content of the stream in real-time. This is likely to be driven bottom-up by the perpetrators, not only to reach a larger audience and increase their ‘celebrity status’, but because they are used to the gamified experiences they now mirror in the real world.

Livestreaming turns attacks into a gamified experience for the perpetrator and the audience. This gamification is self-driven by the attackers and presents the end point of a radicalization process. However, bottom-up gamification can also occur at earlier stages in the radicalization process. For instance, in 2016 a group of young men from Rochdale, UK, interacted with each other through a *WhatsApp* group (McDonald, 2018). They were in the process of jihadist radicalization and gamified their experience by conducting ‘raids’ against individuals they perceived as ‘sorcerers’. They tracked them, took surveillance photos of them, photographed themselves with jihadist symbols in places the person had been photographed before, and shared their pictures with each other in the *WhatsApp* group; almost engaging in a sort of ‘geocaching’ with a jihadist appeal. However, the groups’ actions did not

end there. They also conducted ‘raids’, which included breaking into houses and stealing ‘black magic’ objects.

Raids are a popular element within video games such as *WoW*. During a raid, players break into a dungeon, defeat an adversary such as a sorcerer, and collect points and valuable assets such as armor as a reward for completing the ‘quest’ successfully. This is what the group enacted in real life when they stole items from the ‘sorcerer’s ‘dungeon’ (house). The young men from Rochdale gamified their own radicalization experience by conducting raids they knew from video games and collecting peer recognition as well as social standing as rewards for their actions. They transferred their experiences with games and popular culture into the real world to gamify a context traditionally regarded in non-gaming terms. The ‘quests’ they completed, such as stealing a book, helped them progress further towards becoming fully radicalized and culminated in the death of one of the alleged ‘sorcerers’ (McDonald, 2018). This case also illustrates the importance of the feeling of community and the social relations gamification can facilitate. In *WoW*, it is in the context of guilds that players execute raids of dungeons and, as research has shown, the social aspect of gaming is very important for a large number of players (Rapp, 2017). The young men combined highly social activities, namely social media communications and photo sharing on *WhatsApp*, with elements of gamification such as raids and quests, without being instructed or encouraged to do so. It was an organic, bottom-up gamification of Sageman’s ‘bunch of guys’ (2004; 2008) radicalizing together and each other.

As we have seen, some elements of gamification have appeared in contemporary extremist and terrorist actions originating in both top-down and bottom-up fashion. The widespread application of gamified elements in non-gaming contexts is still in its infancy, but it is not unreasonable to assume that more gamified elements will be used for propaganda and radicalization purposes as gamification becomes more widespread. It is not unlikely that gamification will become a more important element of extremist social media apps and other tools as its positive effects, for instance on engagement, become more obvious and more well known. It is also likely that gamification will move from the application of rather simple

elements such as the PBL-triad to more sophisticated gamified elements (Rapp, 2017), e.g. personal narratives and virtual companionship (Fox & Barnes, 2016).

Games as facilitators of radicalization

In addition to facilitating radicalization by applying game-like elements in non-gaming contexts, it could also be facilitated by casual games. Recent years have seen an increasing focus on the radicalization and recruitment of teenagers and children. For instance, in 2016 a 12-year-old was arrested in Germany for planning a bombing attack at a Christmas market (Die Welt, 2018), and in 2015 a 14-year-old was arrested in the UK for acting as the ‘puppet master’ for a planned attack in Australia (Scaife, 2017). The extremists’ target audience becomes increasingly younger and part of the effort to utilize this potential is by using some form of ‘play’. But gaming is not only entertainment for minors (Quandt et al, 2009) and while sometimes referred to as a ‘subculture’ (Harrison et al, 2017; Meikle & Wade, 2015; Gubagaras et al, 2008), video games are more adequately classified as elements of mainstream culture as 1/3 of the world’s population, almost 2.5 billion people, played video games in 2019 (FinancesOnline, 2020). These numbers suggest that games, including violent FPS games, are familiar points of reference for a large amount of people and therefore an appealing tool for extremist propaganda dissemination (Bourke, 2014; Kang, 2014) but also signaling activities, including to position themselves against other non-state actor adversaries such as Hezbollah’s FPS game letting the player fight against ISIS (Rose, 2018). Beyond their natural appeal as social practices of ‘play’, games may facilitate (susceptibility to) radicalization in a number of ways. In the following, moral disengagement, familiarity, self-efficacy and retro-pian appeal are briefly introduced, but much more elaborate research is needed on these and other themes.

Moral disengagement and desensitization

It has long been postulated that dehumanizing language and moral disengagement mechanisms can facilitate violent behavior and played an important role in the perpetration of mass atrocities such as the holocaust or the genocide in Rwanda (Mukimbiri, 2005). Most people have a relatively stable moral compass and do not normally engage in violence. However, moral reasoning is selectively activated and can be deactivated through a variety of psychological mechanisms (Bandura, 1990) to make the exercise of violence easier. While dehumanization is often understood as changing the perception of the *victim* of violence, Bandura's (2018) description of moral disengagement also includes euphemistic labeling, diffusion of responsibility, distorting the effects of violence and advantageous comparison with the enemy, which points to moral disengagement as also transforming perceptions of *violence itself*. Therefore, his theory remains applicable to both individual and collective violence despite recent critiques that dehumanization as a victim-centered process may not increase the potential for violence (Lang, 2020). Bandura has shown that proneness to moral disengagement predicts criminal acts, including the exercise of violence (Bandura, 1999). Moral justifications for violence and the mechanisms Bandura described are often utilized by extremist organizations, including the dehumanization of (potential) victims (Koomen & van der Pligt, 2017), the displacement of responsibility - for instance, on Allah (Bandura, 2002b)-, advantageous comparison and other linguistic strategies (Windsor, 2018).

Rather unsurprisingly, many popular FPS games make extensive use of the mechanisms of moral disengagement. These include advantageous comparison by setting the background story in such a way that the 'enemy' has perpetrated outrageous atrocities while the retaliatory violence exercised by the player is tame in comparison and only used to restore justice or prevent greater evil, as well as the distortion of consequences by "sanitized portrayals" (Hartman et al, 2014, p. 314) of killing while at the same time making dehumanization more vivid by increasingly realistic graphics, which have a higher impact on players than less sophisticated graphic displays of violence (Hartman et al, 2014). In other words, while the games are increasingly realistic in graphic portrayals of, for instance, 'cool'

fight scenes and detailed weaponry, the consequences of violence are sanitized and distorted, for instance by bodies disappearing after having been killed or an unrealistic display of injuries. These properties of video games, especially FPS games, support moral disengagement practices in the player. Research has shown that violent games affect players in various ways. Short-term exposure to violent video games, for instance, can lead to the reduction of neurological (Engelhardt et al, 2011), cognitive, emotional and behavioral responses to violent stimuli (Brockmyer, 2015); in short, it leads to a habituation (Grizzard et al, 2014) and desensitization to violence, which can reduce empathy (Funk et al, 2004). Long-term exposure has an even more pronounced effect, reducing, for instance, the reaction to everyday violence by making it seem ‘lame’ in comparison to the actions of avatars in video games (Greitemeyer, 2014).

It has been shown that values, perceptions, and perceived sanctions of transgressive or violent behavior are influenced by repeated exposure to models on TV depicting such values or behaviors (Bandura, 2001). Games may have an even stronger effect on moral disengagement than watching TV or movies, because players are actively engaged and can become immersed into the story by identifying with the characters of the game (Brockmyer, 2015). Killing is made to appear exciting, fun and ‘clean’ by distorting the consequences of violence and rewarding players for their engagement in violent deeds. This is one of the reasons the US army uses video games to desensitize soldiers during training (Funk et al, 2003). While it is unlikely that the moral disengagement mechanisms in video games can be causally linked to the adherence to extremist ideologies, these games could make players more susceptible to radicalization through habituation to violent content. Moral disengagement is selectively activated, and games enable players to ‘practice’ such disengagement and link it to entertainment, heroism, and rewards. Through increased interactivity and the personalization of avatars (Lin, 2013), players can strongly identify with the game’s characters and their goals, potentially generating callousness to (the exercise of) real-world violence (Greitemeyer, 2014). Players of such games are already familiar with violent content and are accustomed to cognitive moral disengagement, which might increase

their susceptibility to similar extremist content and contribute to a habitual understanding of violence that could be taken advantage of by recruiters as it arguable already has in relation to the recruitment of former criminals (Ilan & Sandberg, 2019).

Familiarity and pop culture

Video games are so widely played across the globe that they are part of popular culture, transcending linguistic and cultural differences and evoking feelings of familiarity in a large portion of youngsters and adults. Albeit their often backward-looking ideology and nostalgic longing for the past, both contemporary jihadist and right-wing extremist groups are, fundamentally, products of modernity and have utilized references to pop culture in the framing of propaganda elements. Various ways in which jihadists have utilized pop culture frames have been uncovered, including choosing nicknames such as *Irhabi 007* [Terrorist 007] alluding to widely-known MI6 agent James Bond, “MTV Jihadism” (Stenersen, p.123) mirroring the styles of Western music videos, or copying the style of FPS game advertisements, seeking to utilize the ‘coolness’ of video games for recruitment purposes (Ostovar, 2017). Clearly, popular culture is an important point of reference and increases the appeal of propaganda material.

Utilizing familiar gaming imagery and practice in propaganda efforts may increase (susceptibility to) radicalization processes as familiar frames are more likely to resonate with the consumers of propaganda and create a feeling of familiarity and belonging. Familiarity in messaging and similarity to the messenger can facilitate the resonance of extremist narratives. We are more inclined to adhere to messages framed in familiar terms and communicated via familiar media. Because video games are so popular and widespread, games - like TV (Bandura, 2001) - are important tools of mass communication capable of transmitting systems of belief to wide audiences. Especially in the digital world, content made by digital natives for digital natives (Prensky, 2001) can increase the likelihood of not only believing the message but identifying with it, marking the first step to the construction of a virtual community and a feeling of belonging (Schlegel, 2017). In a similar vein, content made by gamers for gamers

colored by ideological beliefs can increase the resonance of this content and the identification with the narratives underlying the game's story. It has already been shown that mass communication tools can influence beliefs. For instance, the acceptance of rape myths increased after playing games including the sexual objectification of women (Beck et al, 2012) and there are TV programs successfully changing people's beliefs and behavior in the field of health or gender relations (Bandura, 2018). The influence of games on beliefs takes place subconsciously: Users engage in a fun and emotionally stimulating activity they are familiar with and think of as 'cool' while almost incidentally engaging with ideological messages. This can reduce the resistance users might have shown to methods where persuasion tactics are obvious and potentially increase susceptibility to radicalization efforts.

Self-perception and self-efficacy

Research on narratives has shown that identification with the characters displayed in stories is an essential part of narrative persuasion (Braddock & Horgan, 2016). Stories are perceived as captivating and resonate with people if they can relate and empathize with one or more characters and understand their goals; a truly human capacity embodied in the 'theory of mind' (Cobley, 2014). Psychological research has recently discovered that stories resonate even on a neurological level: When we read about someone running through a dark forest, our brains are more active in the areas responsible for running and seeing in the dark (Cavanagh, 2019). On a neurological and psychological level, identification with characters in fictional stories transmitted through various types of media takes place, which increases retention and resonance of the story's content.

(Self-) identification processes can also take place in video games (Guegan et al, 2015). Some individuals seem to identify with the broader settings of the FPS games they play. For instance, the Columbine shooters stated on the audio tape they recorded prior to the attack that "it's [the attack] going to be like fucking *Doom*" (McDonald, 2018, p. 101), anticipating their future actions in relation to the context of the popular game *Doom* and believing that "they will undertake a story in which they are the lead characters" (McDonald,

2018, p. 101). Other individuals may not only identify with the setting of the game but specifically with the characters they play. Today's games are immersing players more effectively, because identification with characters is stronger due to technical advances such as avatar customization (Fischer et al, 2010; Jenson et al, 2015) and increasingly realistic, interactive gameplay. Avatars are often constructed as idealized versions of the self one aspires to be (Ducheneaut et al, 2009). If this is the case, identification with the actions and goals of the avatar are more likely as they are perceived as better version of the self. The higher the degree of this identification with the avatars, the higher the potential for violence if the game has a violent content (Lin, 2013), because it causes a “temporal shift of players’ self-perception” (Klimmt et al, 2009, p. 351) and they *become* the avatar, with all the goals and actions associated with it.

However, it is not only the identification with violent deeds of characters that can facilitate susceptibility to radicalization but also the growth in perceived self-efficacy derived from such identification. Self-efficacy is the most central mechanism of human agency (Bandura & Locke, 2003) and “is concerned with people’s beliefs in their capabilities to produce given attainments” (Bandura, 2012, p. 15). Self-efficacy has proven to be a reliable concept for the study of various behavioral contexts (Bandura, 1997), including radicalization processes (Schlegel, 2019). Self-efficacy is increased, for example, by both mastery and vicarious experiences, that is, by acting ourselves and by observing the actions of others (Bandura, 2012). Video games are a hybrid between these two factors: players actively engage in violent actions, yet the experiences are vicarious as only the avatars they identify with transform pressing a button into a virtual violent deed. Increasingly realistic graphics, avatar personalization and interactivity that empowers perceptions of agency, make games social practices that can enhance self-efficacy beliefs, which may be transported to the offline realm. Players are rehearsing aggressive cognitive scripts (Comstock & Scharrer, 2005) during gameplay and because they identify to such a large degree with the avatar, games can provide the cognitive simulation needed to enhance self-efficacy beliefs and the drive to take action (Bandura, 1989). In short, because players have complete control over their avatars’

actions and identify with them, the cognitive scripts practiced in the context of the game can translate into the offline sphere. Video games might facilitate violent radicalization because personalized avatars enable players to engage in virtual mastery experiences - cognitive practices of violent acts -, which could increase their perceived self-efficacy in relation to violence in the offline world. Therefore, repeated exposure to violent games may not only desensitize to violence and facilitate moral disengagement, it may translate into increased self-efficacy beliefs, which in turn increase the likelihood of believing in one's own agency to take violent action. This increased self-efficacy can then lead to greater confidence in being able to take violent action, potentially contributing to radicalization process (Schlegel, 2019).

History, heroism and 'when life mattered'

Many contemporary extremist movements advocate a 'retroplan' vision (Bauman, 2018); that is, a return to a glorified past, which may or may not be an accurate representation of history. In fact, it is unimportant whether the past was as glorious as it is presented as long as the 'collective illusion' (Bandura, 2001) is believable and the social imaginary upheld by the group constructs the past as a nostalgic era one should aspire to return to, because back then 'life mattered' (Hong, 2015), family traditions were upheld and heroic, hyper-masculine warriors were still respected (Kolvraa, 2019). Seen in this light, contemporary extremist movements are closely related to and seek to utilize the 'quest for significance' (Kruglanski et al, 2019); the longing to matter not only here and now but to return to a whole era of significance depicted in the retroplan vision. These retroplan collective illusions are transmitted through very modern media communication tools such as social media applications, leading some to speak of a 'paradoxical conflation' of longing for a past that existed centuries ago with the digitalized experience of everyday life (Atwan, 2015). Video games too can transmit such retroplan visions and facilitate the normalization of a nostalgic yearning for a return to a time when, supposedly, the world was still as it should be.

Hong (2015) postulates that we live in an "age of simulation" (p.36), during which generations of youngsters are exposed to heroic events and mythology primarily through

games. Games often create visions of a heroic past, during which ‘life mattered’ and no new avenues for ‘quests of significance’ were needed, because one was significant if only heroic enough to fight. These visions, Hong argues, do not need to be accurate, just ‘real enough’ so that “we are able to play as if we believe this could have been real” (p. 37). Games have the power to change the players’ perception of reality; they are social practices requiring players to engage with the demarcation between the real, the imagined and the ‘real enough’ in between. They can therefore immerse players in imaginary yet ‘real enough’ worlds and communicate the visions of retropia or evoking nostalgia for an era ‘when life mattered’, thereby normalizing an important aspect of contemporary extremist propaganda and potentially setting the stage for a ‘quest of significance’ in the real world to (re-) establish this past. Through the increasingly realistic and interactive design of games, players can become immersed into and directly experience the retropian visions advocated by extremist organizations, which may present a strong motivational force to return to such a glorious past.

That the barriers between the imaginary realm of games and behavior in the real world are fading is not only a theoretical possibility. Not only can games offer “a feeling of power in a powerless situation, a sense of structure in a chaotic environment” (McGonigal, 2011, p.6), they can shape perception of and behavior within that environment. Wagner (2012) argues that contemporary religious clashes attest to believers ‘playing’ religion like a FPS game. Video games, she argues, mirror and express cultural changes and provide us with ‘interpretive maps’ (p.182) or ‘temporal algorithmic order’ (p.195) of how to organize reality and, by extension, religion. Religious behavior, including religious-inspired violence, is linked to a Manichean view of life with clear instructions of who is friend and who is foe, and the intense agency FPS games provide, making the individual (as opposed to authority figures) feel powerful, chosen and capable to act. Both games and contemporary religious practice advocate for individual agency and responsibility to fight evil, making the barrier between the two porous. Similarly to the quest of significance theory of radicalization (Kruglanski et al, 2019), Wagner (2012) writes “the tendency to play religion as a game is a direct result of the *need for purpose* (...) Attempts to deal with postmodern chaos of belief can

be terrifying and thus may at times result in angry retrenchment into dualistic game-like patterns of interpersonal encounter” (p.191, emphasis mine). Games, therefore, can not only immerse players in retro-pian stories and familiarize them with narratives of ‘when life mattered’, but can facilitate Manichean perceptions of the world while simultaneously strengthen individual agency to act. It has been shown that beliefs can be disseminated and changed through mass media such as TV programs (Bandura, 2001), and because games require the active involvement of players, they may be even more successful in doing so as players identify with their avatars and boost the belief in their own agency by navigating games successfully (Duchenaud et al, 2009; Lin, 2013; Fischer et al, 2013). Video games with extremist content may play a part in facilitating susceptibility to radicalization by familiarizing individuals with narrative structures, such as a return to a glorified past, the importance of individual agency and the individual capability (if not duty) to fight evil, advocated by many contemporary extremist movements.

Cautions and limitations

Radicalization, whether it takes place online or offline, is a multifaceted phenomenon unique to each individual case. Therefore, it is difficult to establish the relative weight of the various factors facilitating and driving radicalization processes. Naturally, an exploration of a specific factor such as games and gamification, must be read with caution. It is not possible to determine the relative importance of gaming elements in radicalization and the article should be read as a Weberian ideal type analysis highlighting a single factor rather than providing a comprehensive account of radicalization. Current research is inconclusive in linking games to aggression or violent behavior and the field of gamification research is so young that our knowledge about the specific mechanisms and conditions under which gamification operates and its influence relative to other factors aimed at increasing engagement, must be regarded as limited. Given that it is already difficult to establish causality between violent games and

aggression, an empirically robust causality between playing games and radicalization cannot be established at this point.

This article, like so many others in extremism studies, suffers from lack of primary data. Large parts of the analysis are based on the *theoretical* application of findings acquired during research unrelated to the study of extremism and radicalization processes. For instance, showing a short-term increase in aggression after playing a video game in an experimental setting is far removed from correlating video games to the adoption of an extremist worldview, much less perpetrating an act of terrorism. We need to be careful not to treat evidence of low-level aggression as automatically applicable to an explanation of behavioral radicalization and be critical of the validity of generalizing from experimental contexts to real world violence. Human behavior is so “richly contextualized and conditionally expressed” (Bandura, 2002a, p.276) that it is impossible to conclude that games and/or gamification by themselves facilitate radicalization. Games and gamification have been used for quite some time by extremist organizations, but we are only beginning to understand their potential influence on radicalization. Further research is needed to back up the theoretical claims made in this work and increase the amount of empirical data - such as in-depth analyses of games and gamified social media applications - in order to develop a stronger basis upon which to judge the role of games and gamification in radicalization processes.

Notwithstanding these methodological limitations, the discussion above is of value. Games and gamification are increasingly being used by extremist organizations and it is reasonable to assume that both tools will become more prominent in the years to come. Gamification is only starting to be applied widely for various purposes and it is likely that once its benefits are more rigorously established and social media users become acquainted to it, extremist organizations will pay even closer attention to how they could utilize gamification for their own goals. Games too are popular with a large audience and have moved from the realm of individual entertainment to a tool of social engagement, available not only via computers but on smartphones and other handheld devices, increasing the opportunities games present to extremist organizations. It is therefore necessary for the

research community to engage with games and gamification and their relation to radicalization processes both theoretically and empirically in the future.

Conclusion

Both gamification and video games have the potential to influence radicalization processes. Top-down as well as bottom-up gamification have already been observed in relation to extremism, attesting to the increasing prominence gamified elements have for the development of tools by extremist organizations, such as the *Patriot Peer* app, for extremist violence as a gamified ‘performance’ via livestreaming and for individual radicalization processes, exemplified by the young men ‘raiding the sorcerer's dungeon’ during their radicalization process. Video games too may increase susceptibility to radicalization by desensitizing individuals to violence, helping them ‘practice’ moral disengagement, increasing the appeal and resonance of propaganda material by familiar imagery and references to gaming culture, supporting the growth of self-efficacy beliefs in relation to violent deeds, and by immersing players in narratives of a time ‘when life mattered’, thereby familiarizing them with a certain outlook on the world potentially capable of inspiring actions in the offline realm.

Due to spatial constraints many ways in which games and gamified elements could facilitate radicalization have only been touched upon in this article. Bottom-up and top-down gamification as well as the role of games in desensitization to extremist violence, the use of familiar pop culture imagery, self-efficacy, the ‘when life mattered’ theme and others, can and should be researched in more depth in relation to radicalization processes. To this end, research collaborations between, for instance, scholars of game design, Internet sociology, computer interaction with human behavior, advertising, digital education or the technologization of social life more generally, with experts on radicalization and extremism would be fruitful. Additionally, while the present article was focused on gamification and casual games used primarily for entertainment, a discussion of the potential role of serious

games, played with the intent of acquiring or improving a skill, not only in radicalization processes but for recruitment and training purposes is to be encouraged. If games and/or gamification would prove to be useful tools in facilitating (susceptibility to) radicalization, the possibilities of mirroring these elements in de-radicalization programs also deserve attention.

Games and gamified elements do not by themselves give rise to radicalization processes, but both can draw players in, immerse them more tightly within extremist communities, cause increased engagement and identification with extremist content and, like *Jumanji*, provide a gateway or “a game for those who seek to find a way to leave their world behind”. Much like when playing *Jumanji*, these gaming elements can influence the players’ perception of reality, advocating the illusion they can become (or rather, come to mirror) the avatars they have chosen to represent themselves in the game. With new technological possibilities such as improved virtual reality tools and their increasingly widespread application in everyday lives, games and gamification may become more important in the future; for societies as a whole and extremist organizations within them.

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