

# ADDICTION, GAMBLING AND GAMING: CHASING THE DIGITAL DRAGON

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## INTRODUCTION

An increase in media coverage has publicised the lengths to which young members of the gaming community will go when playing online games, in order to maximise their chances of success. Additionally, recent technological advancements and the heightened availability of video games have enabled such forms of entertainment to have increasingly become a staple of everyday life for a growing proportion of the population (Chikhani, 2015; Tiplady, 2003). This combined increase in



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technological advancement and availability of video games has enhanced opportunities for the gaming industry to gain more profit from consumers and consumers a wider array of ways to progress within video games (Stuart, 2016). As such, it is therefore recognised that the virtual ‘materials’ that gamers are purchasing within the online realm, in order to enhance their chances of victory within the ludodrome, are being bought with real money rather than rewards gained throughout the game (Valkyrie, 2017). One key example of this is the inclusion of ‘loot boxes’ within video games. Loot boxes are virtual containers that allow users to make in-game purchases with the opportunity to gain random items or modifications in the game on the basis of chance (Woodhouse, 2019). With this in mind, this chapter will explore whether video games, and as such the gaming industry, can be considered to be facilitating underage and unregulated gambling. Furthermore, it will consider the impact on users of gambling for in-game currency and interrogate potential reasons behind their lack of regulation.

## ADDICTION AND GAMBLING

The World Health Organization (WHO, 2018) has officially identified video game addiction as a mental health disorder. WHO argues that this type of addiction causes games to take an increasing priority over a person’s other life activities, regardless of the negative implications that it may result in (WHO, 2018). Traditionally, addiction is defined as ‘*not having control over doing, taking or using something to the point where it could be harmful to [a person]*’ (National Health Service, 2015). Many people have raised questions regarding whether video games can be classed as an activity that one can become addicted to, with some regarding it as somewhat elusive or implausible (Pontes, 2018). One of the key factors in

this argument is situated within what criminologists would categorise as biological positivism, regarding the level of dopamine released when a person is playing a video game, in comparison to other activities or substances that a person can become addicted to. In a large-scale international study of 932 participants, based on testing the premise of Internet gaming disorders as psychiatric disorders, it was found that at most 1% of all the participants may have a chance at exhibiting addictive characteristics to these games. Furthermore, they established that other activities such as gambling were far more addictive (Przybylski, Weinstein, & Murayama, 2016). As such, this chapter positions the discussion of addiction, by focusing on attributes within video games that can mimic addiction, such as the rise of pseudo-gambling within video games.

## GAMBLING AND VIDEO GAMES

As the focus of this chapter is on gambling within video games, it is necessary to explore gambling as an activity in more depth. There has been a significant development and growth in gambling over the years; according to Abbott (2017), this growth has been fuelled by the Internet on a global scale. Whilst gambling can be perceived as a hobby or something ‘fun’ to take part in for many people within society, there are some who gamble to excess (Raymen, 2016; Walker, 1989). Gambling becomes an issue when an individual invests time and money they cannot afford and for some of these people, it is suggested that they will sometimes turn to abortive measures to cut back on engaging with this activity (Walker, 1989). As such, it is important for this chapter to discuss what factors of gambling can be identified as addictive. Whilst general gambling, in one sense, is linked to glamour and the ‘Las Vegas lifestyle’, heavy gambling comes with its own stigma: problem gambling, excessive gambling,

compulsive gambling, pathological gambling and addictive gambling (Walker, 1989). However, Walker (1989, p. 185) continues and highlights that not all of these labels can be applied correctly to gambling. According to Rankin (1982, p. 185),

*... those who are involved with this problem conceptualize excessive gambling as a form of addiction and have borrowed heavily from the alcoholism literature in particular, to guise their thought and their practices.*

Walker (1989) then suggests that if heavy gambling has similar characteristics to other forms of addiction, then general theories of addiction may have the ability to explain behaviour's associated with heavy gambling. To add, therapies that are effective for other addictions may also be effective to heavy gamblers, specifically pathological gamblers; this, however, may add pressures for change in law that are connected to gambling related crimes (Walker, 1989).

Abbott (2017) supports the claim that heavy gambling and other addictive disorders are similar and highlights that issues with gambling continue to grow dramatically. In 2017, adults with gambling problems ranged from 0.1% to 6.0%, which was two or three times more than those who experienced less serious sub-clinical problems (Abbott, 2017). According to this finding, it is clear to see that heavy gambling has become far more problematic over the years, which could be situated within the increasing embeddedness of such leisure pursuits within society (Raymen, 2016). To demonstrate, pathological gambling was first recognised and listed in the *Diagnostic and Statistical Manual of Mental Disorder (DSM) – III* in 1980 (Commission on Behavioural and Social Sciences and Education, 1999). If we fast forward to the fifth edition (DSM V), this was then renamed to 'gambling disorder' and placed under a new category 'Addiction and Related Disorder'

(Rennert, Denis, Peer, Gelernter, & Kranzlet, 2014). For clarity, a gambling disorder is generally described as a ‘... *repeated problematic gambling behaviour that cause(s) significant problems or distress*’ (Wang, 2018). For those where gambling becomes an addiction, they often find themselves craving the act, which is similar to the craving that occurs for those who are addicted to alcohol or substances (Wang, 2018). Heavy gambling that becomes addictive may result in major problems with finances, relationships, work and legal issues (Wang, 2018). However, it is worth noting that many people see heavy gambling as being a superficial addiction, in turn weakening the strength of the term addiction (Walker, 1989). Similarly, therapy may be disregarded and there may be a reduction in the importance of changing laws associated with gambling-related crimes, due to the misleading viewpoints of gambling not always being seen as a real addiction (Walker, 1989). With this in mind, perhaps the nature of heavy gambling needs to be examined to assess where the act can result in an addiction. For the purpose of this chapter, the authors have deemed it appropriate to associate heavy gambling with addiction, due to its recognition within the DSM V and its long-standing status as being seen as a form of addiction.

The above already identifies some problems with controlling what Raymen (2016) terms lifestyle gambling due to the possibility of laws being reviewed. This would not be the only obstacle faced when reviewing how to regulate such gambling. However, before tackling this argument, it is important to situate how gambling has been policed, or in essence ‘controlled’, historically. Drawing back to Abbott’s (2017) claim that gambling has grown globally through the use of the Internet, it is appropriate to start with how people gambled with the aid of technology and how this was controlled at the start. In the mid-1980s, betting shops were allowed to have televisions to show races, with the help of further gambling legislations; this was easier to control in the

physical world as users would present their identification (Durham & Hashimoto, 2010). In the late 1990s, the Internet opened new doors for gambling and introduced online bingo and poker sites, resulting in the increasing normalisation of such leisure pursuit within a growing section of the population (Raymen, 2016). However, in order for people to play, they needed to provide credit card details and identification to prove they were over the legal age (Durham & Hashimoto, 2010).

Traditionally, gambling was controlled and policed through showing one's identification, as briefly highlighted; through the development of technology, the individual would need to provide their credit card details and/or identification to prove their age via online platforms (Banks, 2016). There has been some conversation around the issues that the police face when it comes to policing online platforms; however, there seems to be some confusion and ongoing debates of who is responsible for this (Cohen, 2017). The government indicate to society that it is almost impossible to police online platforms and in this case policing online gambling (Fuller, 2006). One of the key factors we can consider is that it is very difficult to implement, and as such, police age-restricted activities within the online realm, such as online gambling (Fabiansson, 2016). This becomes increasingly difficult when we consider the fact that age restrictions vary across the world. With this in mind, there are many questions around who is responsible for ensuring that age restrictions are adhered to when people engage in games across international borders. As such, it is not necessarily possible to police online gambling, as the globalised network is actually quite complicated (Fabiansson, 2016). For instance, if an individual from the United Kingdom used an Australian website, questions would then be raised as to who is responsible for policing it. One way to understand this is through discussing capitalism. It can be argued that capitalism is underpinned via a bid for hegemony through

nation states and the rich and powerful, with the rest of society falling in line via necessity over the last few centuries, and as result, enabling society to conceptualise a lived reality not within the capital nexus (Taylor, 2016). In saying this, it is financially beneficial for a state to perpetuate the normalisation of gambling to generate profit for companies which operate within its territory. As demonstrated earlier, the gambling industry generates billions of pounds, and as such businesses are providing a large volume of capital for the government and therefore if proper policing is in place, it not only reduces the overall profits that can be made by the capital state but also increases the outgoings that must also be spent (Banks, 2016).

Drawing back to the chapter's theme and reflecting on what has been discussed, online gambling continues to grow through the development of technology and capitalism, with it now having seen a growth in to online games. This presence within online games is a further platform that can potentially lead to people engaging in addictive behaviour through the process of problem gambling. For example, there is now a market for selling virtual currency in digital games (Guo, Hao, Mukhopadhyay, & Sun, 2019), with reports of children using their parents/carers credit cards to make purchases to feed their urge of gambling currency (Kleinman, 2019a). Drawing back to the work of Raymen (2016), who highlights the relationship between money is pathologically de-sublimated, decimating its symbolic value within the context of adults gambling, it is reasonable to posit from this positionality that adolescence (and the use of their guardians money) would viably exacerbate such issues. As such, many now believe that video games are enabling children to engage with gambling behaviour (Hern, 2017). To understand this in more depth, however, we must understand how gambling currency developed within video games.

## 'LOOT BOXES' IN VIDEO GAMES

The gaming industry has seen a shift over the years in terms of purchasable content for various gaming consoles. For example, previous generations of consoles, such as the Nintendo 64, required users to purchase cartridges in order to own the game that they desired (Steven, 2002). Whereas, in more recent times, gamers have the option to sign up to networks such as the PlayStation Network, where they can play online games or download content from the PlayStation Store (Loguidice & Loguidice, 2012). This advance in technology has increasingly led to developers including downloadable content within their games, in order to increase profit after the initial purchase of the game (Stuart, 2016). This move towards downloadable content has seen some consumers tempted by the increased options within games. Some have compared this type of video game sale, as the initial game resembling an economic car, of which purchasing downloadable content is necessary in order to fix it up (Aires, 2010). Although gamers are provided with the option as to whether they purchase these extras, it is now the case that options that would have previously been complementary are now at a premium price (Paul, 2013). As such, to ensure the game matches your own specification, certain packages need to be purchased, therefore causing some users to be at an economic disadvantage even within the ludodromes, thus terrestrial inequalities transition into the ludodromes experience. It could then be argued that in order for the consumer to get the full and immersive experience within the gaming product they have purchased, they must repeatedly pay more. Some video game organisations, and as a result of these organisations, the government, have large volumes of their revenue originating from the sales of digital content (Yin-Poole, 2019a) with Rockstar Games in the United Kingdom even been given tax allowance for their proposed



contribution to culture (HM Treasury et al., 2014; Taxwatch, 2019).

One key example of these concerns can be linked to ‘loot boxes’ within video games. Loot boxes are virtual containers that allow users to make in-game purchases with the opportunity to gain random items or modifications in the game on the basis of chance (Woodhouse, 2019). As highlighted by some of the examples earlier, gambling within video games has been part of the culture for a long time, hence the implementation of ‘loot boxes’ into video games by their producers, unsurprising. Loot boxes, particularly, have been present within video games since the mid-2000s and have increased in popularity over recent years (Brooks & Clark, 2019). However, what has come under great debate in regard to ‘loot boxes’ is their resemblance to gambling when used by gamers. The fact that ‘loot boxes’ require the user to spend real money, with no guarantee of what reward they will receive, places gamers in a similar scenario to when gambling like practices are used separate to the online video game realm. As such, the ability for a person to take part in ‘pseudo-gambling’ through video games leaves them open to the implications that can occur from excessive traditional gambling. Gamers often do not have an awareness of what they will gain from the loot box, with the most desirable prizes, often being the rarest (Brooks & Clark, 2019). For example, within FIFA 19 (EA Sports, 2018), there are trading card-style packets available, with the most expensive ‘gold’ pack costing around £1.20 of real money; however, the chance of winning a top player is around 4.5% (Acres, 2019). As such, to maximise their chances of success, gamers are encouraged to spend more money (Griffiths, 2018a). This has been reiterated by Zende and Cairns (2018) who determined after studying 7,422 gamers that not only do loot boxes within video games have the ability to act as a gateway

towards problems with gambling but they can also cause those with pre-existing issues with gambling to be drawn towards spending money on loot boxes. Furthermore, the study concluded that the attributes that make loot boxes similar to gambling could have a key impact on gambling severity, as the study did not draw a strong connection between gambling and the purchase of other in-game items where the element of risk is not present (Zendle & Cairns, 2019). [Brooks and Clark \(2019\)](#) support these findings, as their study found that gamers who are drawn to using 'loot boxes' within online games often are people who have a closer resemblance to problem gamblers than the description of a problem gamer. Further to this, they found a correlation between users having extensive engagement with loot boxes and measures of problem gambling ([Brooks & Clark, 2019](#)). They argued that potential justifications for this were that those who have a predisposition to gambling are more likely to be vulnerable to loot boxes and that the use of loot boxes may encourage a person to engage with risky gambling behaviours ([Brooks & Clark, 2019](#)).

It has been argued that spending money on general micro-transactions, such as the purchase of loot boxes, is more likely by people under the age of 25 years ([Gusmao et al., 2019](#)). With this in mind, loot boxes have been normalised within the gaming community, and as such a process that consumers are aware of from a young age, with its popularity being particularly present amongst young people. In regarding it as part of the culture, some may say that this is a key sign of parents financially enabling this to occur, as a way of supporting the online social interactions of their children, without realising the broader context of this involvement. In May 2018, an Ipsos survey reported that 40% of parents, who had children that played video games, allowed their children to spend money on video games, under supervision or with a set upper spending

limits made clear (Belam, 2018). However, as noted earlier with the discussions of young people using their parent's bank cards to make these purchases, it is not always the case that parents are aware of the amount their children are spending. As such it could be said that this is highlighting how, in one way, that these loot boxes can encourage young people to move to criminal activity such as fraud, in order to obtain these loot boxes. This in itself raises questions around how society as a whole is facilitating deviancy. The fact that children use their parent's bank cards without permission reiterates the viewpoint of Wall (2007), who argues that cybercrime is not merely facilitated by technology, but also by social, legal and economic drivers. The lack of regulations in place and the social and economic drivers engrained within society in essence play a part in the actions highlighted here. Nevertheless, it is clear that parents are not fully aware of the impact of loot boxes, and therefore suggestions have been made such as content descriptors and responsible spending limits on games that include loot boxes have been put forward as potential suggestions to help parents (Drummond, Sauer, & Hall, 2019).

Regardless of this lack of parental awareness, the extent to which loot boxes are being used within video games, among young people in particular, is one of great discussion. To start, loot boxes or virtual items of a similar nature are present within many popular video games, such as: FIFA 19 (EA Sports, 2018), Middle-earth: Shadow of War (Warner Brothers Interactive Entertainment, 2017), Overwatch (Blizzard Entertainment, 2016) and Star Wars Battlefront 2 (Electronic Arts, 2017) (Griffiths, 2018a), heightening the access that young people have to them. A report by the Gambling Commission (2018) found that in a study consisting of young people aged 11–16 year in Great Britain, just under a third of them claimed to have opened loot boxes in order to get other in-game items, within either online video games or app-based

games. Despite the issues raised regarding the likeliness of loot boxes to gambling and the clear use of them by young people, loot boxes are highly unregulated. To start, one of the largest video game publishers Electronic Arts (EA) disagrees with the ethical concerns that have been raised regarding 'loot boxes', arguing that loot boxes are both quite ethical and fun, and work in the same way as the '*surprise mechanics present within popular children's toys, such as Kinder Egg*' (Webb, 2019). Further to this, the United Kingdom's Gambling Commission has reported that they are not able to regulate loot boxes. This is due to arguments that there is no official way to monetise the prize that is in them and therefore causing them to not meet the Gambling Act's definition for what constitutes as gambling (Kleinman, 2019b). This is a similar argument to that provided in America, where The Entertainment Software Ratings Board states that even if a gamer receives an item that they do not wish to receive, they will still be guaranteed to receive new in-game content (BBC Newsround, 2018). However, it has been found that some games have links to online market platforms, where gamers have the ability to trade and sell the items gained from the opening of loot boxes, of which they can establish a monetary value as a result (Brooks & Clark, 2019). Brooks and Clark (2019) found that within their study, a third of participants had sold a loot box item at one point in time. Additionally, there are independent websites, including LOOT.farm and skins.cash, where gamers can exchange their in-game purchases or virtual currency for real money (Griffiths, 2018a). Furthermore, the items that are received as prizes of loot boxes are often within financial comparisons, less valuable than the price paid for the initial loot box (Griffiths, 2018b).

Despite both the United Kingdom and America continuing to allow the use of loot boxes on the basis of it not being illegal, other countries have outlawed or put restrictions on their use within online games. For example, Belgium have

made the use of loot boxes when gamers have to use real money to purchase them, completely illegal, on the basis that they breach gambling rules (Griffiths, 2018a). Further to this, Belgium launched a criminal investigation against the EA, after the company refused to make necessary adjustments to their version of loot boxes, in order to meet Belgium's gambling laws (Yin-Poole, 2019b). Since the investigation which started in 2018, the EA has finally stopped selling FIFA points, months after other publishers such as 2K Games, Blizzard and Valve disabled loot boxes in their Belgian video games (Yin-Poole, 2019b). China is a further example of a country that has seen a link between loot boxes and gambling. In China, rules have been put in place that require gaming companies to make it clear the exact chance they have of getting rare items within the loot boxes to ensure that gamers are fully aware (BBC Newsround, 2018). Further concerns have arisen in Australia. The Environment and Communications References Committee completed an inquiry in to loot boxes and determined that due to the gambling-related harms, particularly for children and vulnerable adults, a comprehensive review of loot boxes is required to be undertaken by the Australian Government (ECRCAS, 2018). This is supported by a study in Australia that established that loot boxes not only meet the psychological criteria to fall in to the category of gambling but also cause the same excitable reaction that occurs from traditional gambling (ECRCAS, 2018).

## CONCLUSION

Throughout this chapter, it has been highlighted that profitable gains can result from the development of technology and capitalism – this has particularly been seen through the rise in online gambling, which since progressed to the ludodrome.

Within this capitalist state, there is an increased competition between individual gamers wanting to succeed, and individual companies wanting to maximise profits. It has become clear within this chapter that these two forces within the market have led to features linked to gambling-like behaviour being implemented into video games, such as loot boxes. The literature that specifically focuses on loot boxes is fairly new, and therefore it would be premature to say that there is a causal relationship between loot boxes and problem gambling. However, it does show that the early academic literature is on the whole supporting the idea that the purchase of loot boxes mimics the attributes of gambling and as such can lead to the negative implications of problem gambling (Brooks & Clark, 2019; Zendle & Cairns, 2019). It further indicates that this research is supporting the perspective that previous experiences of problem gambling heighten the risk of loot box purchases (Brooks & Clark, 2019; Zendle & Cairns, 2019). Taking this standpoint, it can be argued that there is a connection between addictive behaviour and video games; however, not in the traditional argument of individuals becoming addicted to the video games specifically, but rather through in-game pseudo-gambling. As stated, the literature regarding loot boxes is in its early stages, and as such further research needs to be conducted to strengthen the arguments regarding association with problem gambling. However, it is clear that there are competing views across the world in regard to whether, and if so how, loot boxes should be regulated under the premise that they are a form of in-game gambling (BBC Newsround, 2018; ECRCS, 2018; Griffiths, 2018a). As established, despite these debates, the United Kingdom is one of the locations in the world that does not regulate loot boxes (Kleinman, 2019b). As such, this ability to gain further revenue post original sale exposes the way in which consumer capitalism culture in the United Kingdom situates profit as the priority. Without

regulations in place, the continuation of loot boxes within video games is likely to continue, due to the large profit margins they provide to the producers as forms of downloadable content (Yin-Poole, 2019a). A result of this, however, is that the early concerns raised within the literature regarding loot boxes and problem gambling are likely to be overlooked by video game producers over the fear of lost profits.

## REFERENCES

- Abbott, M. (2017). *The epidemiology and impact of gambling disorder and other gambling-related harm*. Geneva: World Health Organization. Retrieved from [https://www.who.int/substance\\_abuse/activities/fadab/abbot\\_gambling\\_forum.pdf?ua=1](https://www.who.int/substance_abuse/activities/fadab/abbot_gambling_forum.pdf?ua=1). Accessed on August 22, 2019.
- Acres, R. (2019). Video game loot boxes blamed for rise in young problem gamblers. *Sky News*. Retrieved from <https://news.sky.com/story/video-game-loot-boxes-blamed-for-rise-in-young-problem-gamblers-11559402>. Accessed on August 18, 2019.
- Aires, J. (2010). *Madden 11 (Xbox 360) Review*. Accessed from <http://www.gofanboy.com/xbox-360-reviews/3657-madden-11-xbox-360-review>. Accessed on August 22, 2019.
- Banks, J. (2016). *Online gambling and crime*. London: Routledge.
- BBC Newsround. (2018). Gambling and gaming: Children as young as 11 betting online. *BBC News*. Retrieved from <https://www.bbc.co.uk/newsround/44736452>. Accessed on August 24, 2019.
- Belam, M. (2018). Video games that allow in-game purchases to carry Pegi warning. *The Guardian*. Retrieved from

- <https://www.theguardian.com/games/2018/aug/30/video-games-that-allow-in-game-purchases-will-carry-peggi-warning>. Accessed on August 26, 2019.
- Blizzard Entertainment. (2016). *Overwatch*, video game, Playstation 4. Irvine, CA: Blizzard Entertainment.
- Brooks, G. A., & Clark, L. (2019). Associations between loot box use, problematic gaming and gambling, and gambling-related cognitions. *Addictive Behaviors*, 96, 26–34.
- Chikhani, R. (2015). *The history of gaming: An evolving community*. Retrieved from <https://techcrunch.com/2015/10/31/the-history-of-gaming-an-evolving-community/>. Accessed on August 28, 2019.
- Cohen, Y. (2017). *The net is closing* (2nd ed.). London: Createspace Independent Publishing Platform.
- Commission on Behavioural and Social Sciences and Education. (1999). *Pathological gambling: A critical review*. Washington, DC: National Academies Press.
- Drummond A., Sauer J. D., & Hall, L. C. (2019). Loot box limit-setting: A potential policy to protect video game users with gambling problems? *Addiction*, 114, 935–936.
- Durham, S., & Hashimoto, K. (2010). *The history of gambling in America*. Upper Saddle River, NJ: Prentice Hall.
- Electronic Arts. (2017). *Star Wars: Battlefront II*, video game, Playstation 4. Redwood City, CA: Electronic Arts.
- Electronic Arts Sports. (2018). *FIFA 19*, video game, Playstation 4. Redwood City, CA: Electronic Arts Sports.
- Environment and Communications References Committee of the Australian Senate. (2018). *Gaming micro-transactions for chance-based items*. Retrieved from <https://>



- [www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Environment\\_and\\_Communications/Gamingmicro-transactions/Report](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Gamingmicro-transactions/Report). Accessed on August 19, 2019.
- Fabiansson, D. (2016). *Pathways to excessive gambling*. London: Routledge.
- Fuller, J. (2006). *Criminal justice*. Upper Saddle River, NJ: Pearson/Prentice Hall.
- Gambling Commission. (2018). Young people & gambling 2018: A research study among 11–16 year olds in Great Britain, November 2018. Gambling Commission. Retrieved from <https://www.gamblingcommission.gov.uk/pdf/survey-data/young-people-and-gambling-2018-report.pdf>. Accessed on August 28, 2019.
- Griffiths, M. (2018a). Gambling: ‘loot boxes’ in video games could be conditioning children. *The Conversation*. Retrieved from <https://theconversation.com/gambling-loot-boxes-in-video-games-could-be-conditioning-children-107667>. Accessed on August 17, 2019.
- Griffiths, M. (2018b). Is the buying of loot boxes in video games a form of gambling or gaming. *Gaming Law Review: Regulation, Compliance, and Policy*, 22(1), 52–54.
- Guo, H., Hao, L., Mukhopadhyay, T., & Sun, D. (2019). Selling virtual currency in digital games: Implications for gameplay and social welfare. *Information Systems Research*, 30(2), 430–446.
- Gusmao, P., Almeida, T., Lopes, F., Muryn, Y., Martins, J., & Au-Yong-Oliveira, M. (2019). Microtransactions in the company’s and the player’s perspective: A manual and automatic analysis. In A. Rocha, H. Adeli, L. P. Reis, & S. Costanzo (Eds.), *New knowledge in information systems*

- and technologies, volume 3. Advances in Intelligent Systems and Computing. New York, NY: Springer.*
- Hern, A. (2017). Video games are unlocking child gambling – This has to be reined in. *The Guardian*. Retrieved from <https://www.theguardian.com/commentisfree/2017/dec/28/video-games-unlock-child-gambling-loot-box-addiction>. Accessed on August 26, 2019.
- HM Treasury, Department for Digital, Culture, Media & Sport, Osborne, G., & Vaizey, E. (2014). Video games tax relief passes final Hurdle. gov.uk. Retrieved from <https://www.gov.uk/government/news/video-games-tax-relief-passes-final-hurdle>. Accessed on February 20, 2020.
- Kleinman, Z. (2019a). My son spent £3,160 in one game. *BBC News*. Retrieved from <https://www.bbc.co.uk/news/technology-48925623>. Accessed on August 20, 2019.
- Kleinman, Z. (2019b). Fifa packs and loot boxes ‘not gambling in the UK’. *BBC News*. Retrieved from <https://www.bbc.co.uk/news/technology-49074003>. Accessed on August 22, 2019.
- Loguidice, B., & Loguidice, C. T. (2012). *My playstation Vita*. Indianapolis, IN: Pearson Education.
- National Health Service (NHS). (2015). Addiction: What is it? Retrieved from <https://www.nhs.uk/live-well/healthy-body/addiction-what-is-it/>. Accessed on August 22, 2019.
- Paul, C. (2013). It’s in the game? Shifting scene with online play. In M. Consalvo, K. Mitgutsch, & A. Stein (Eds.), *Sports videogames*. New York, NY: Routledge.
- Pontes, H. M. (2018). Making the case for video game addiction: Does it exist or not? In C. Ferguson (Ed.), *Video*

- game influences on aggression, cognition, and attention* (pp. 41–57). Cham: Springer.
- Przybylski, A. K., Weinstein, N., & Murayama, K. (2016). Internet gaming disorder: Investigating the clinical relevance of a new phenomenon. *American Journal of Psychiatry*, 174(3), 230–236.
- Rankin, H. (1982). Case histories and shorter communications. *Behaviour Research and Therapy*, 20, 185–187.
- Raymen, T. (2016). Lifestyle gambling and the normalised harms of deviant leisure. *British Society of Criminology*. Retrieved from <https://www.britisoccrim.org/wp-content/uploads/2016/04/Lifestyle-Gambling-and-the-Normalised-Harms-of-Deviant-Leisure-T-Raymen.pdf>
- Rennert, L., Denis, C., Peer, K., Gelernter, J., & Kranzlet, H. (2014). DSM-5 gambling disorder: Prevalence and characteristics in substance use disorder sample. *Experimental and Clinical Psychopharmacology*, 22(1), 50–56.
- Steven, A. (2002). *Video game Bible, 1985–2002*. Victoria, BC: Trafford Publishing.
- Stuart, K. (2016). The digital apocalypse: How industry is rising again. *The Guardian*. Retrieved from <https://www.theguardian.com/technology/2016/may/17/video-game-industry-changing-virtual-studios>. Accessed on August 27, 2019.
- Tax Watch UK. (2019). *How the makers of grand theft auto managed to pay £0 UK corporation tax and claim millions in government subsidies whilst making \$\$\$ billions in profit*. Retrieved from <https://www.taxwatchuk.org/reports/gaming-the-tax-system/>. Accessed on August 17, 2019.

- Taylor, I. (2016). *Global governance and transnationalizing capitalist hegemony*. London: Routledge.
- Tiplady, R. (2003). *One world or many? The impact of globalization on mission*. Pasadena, CA: William Carey Library.
- Valkyrie, Z. (2017). *Game worlds get real: How who we are online became who we are offline*. Santa Barbara, CA: Praeger.
- Walker, M. (1989). Some problems with the concept of “gambling addiction”: Should theories of addiction be generalized to include excessive gambling?. *Journal of Gambling Behaviour*, 5(3), 179–200.
- Wall, D. S. (2007). *Cybercrime: The transformation of crime in the information age*. Malden, MA: Polity Press.
- Wang, P. (2018). *What is gambling disorder?* Retrieved from <https://www.psychiatry.org/patients-families/gambling-disorder/what-is-gambling-disorder>. Accessed on August 22, 2019.
- Warner Brothers Interactive Entertainment. (2017). *Middle-Earth: Shadow of War*, video game, Playstation 4. Burbank, CA: Warner Brothers Interactive Entertainment.
- Webb, K. (2019). EA doubled down on loot boxes in games during a hearing with UK lawmakers, comparing them to Kinder Eggs and saying they’re ‘actually quite ethical’. *Business Insider*. Retrieved from <https://www.businessinsider.com/ea-defends-loot-boxes-as-ethical-uk-parliament-2019-6?r=US&IR=T>. Accessed on August 20, 2019.
- Woodhouse, J. (2019). Lootboxes in video games. House of Commons Library, Briefing Paper, No. 8498, February 15. Retrieved from <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8498>. Accessed on August 22, 2019.

- World Health Organization. (2018). Gaming disorder. World Health Organization. Retrieved from <https://www.who.int/features/qa/gaming-disorder/en/>. Accessed on August 16, 2019.
- Yin-Poole, W. (2019a). UK video game sales now 80% digital. *Eurogamer*. Retrieved from <https://www.eurogamer.net/articles/2019-01-03-uk-video-game-sales-now-80-percent-digital>. Accessed on August 25, 2019.
- Yin-Poole, W. (2019b). EA buckles in Belgium, stops selling FIFA points following loot box gambling pressure. *Eurogamer*. Retrieved from <https://www.eurogamer.net/articles/2019-01-29-ea-buckles-in-belgium-stops-selling-fifa-points-following-loot-box-gambling-pressure>. Accessed on August 17, 2019.
- Zendle, D., Cairns, P. (2018). Video game loot boxes are linked to problem gambling: Results of a large-scale survey. *PLOS ONE*, 13(11), e0206767. doi:10.1371/journal.pone.0206767