

policy paper

The Case for Uniform Loot Box Regulation: A New Classification Typology and Reform Agenda

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Abstract

The recent exponential increase in the presence of loot boxes and other forms of microtransactions in online games, together with the consequential development of a “token economy,” have created regulatory challenges around the world. The similarities between loot boxes and traditional forms of gambling give rise to serious and long-term psychological and financial risks, particularly among a largely minor, vulnerable audience. Regulators must, therefore, decide whether loot boxes and microtransactions should be addressed in the same manner as traditional gambling activities. Recognizing that the legal definition of gambling is a policy matter for different legislatures, this paper proposes a new classification framework for loot boxes and microtransactions that could be adopted as a guide by regulators and gaming publishers operating in the global, hyper-connected landscape of online gaming. The framework is designed to assist policy makers to achieve consumer welfare goals while also not unduly restricting the ability of adult consumers to make informed decisions as to when they participate in gambling-like activities or inappropriately interfering with the legitimate commercial endeavors of game developers. This paper advances nascent commentary in relation to the growing integration of microtransactions and loot boxes in the structure and content of video games and outlines a reform agenda informed by regulatory global responses to the issue.

Keywords: video games, esports, loot boxes, microtransactions, regulation, governance

Résumé

La récente augmentation exponentielle des coffres à butin et d'autres formes de microtransactions qui sont intégrées aux jeux en ligne et favorisent une « économie de jetons » a donné lieu à des défis réglementaires dans le monde entier. Les similarités

entre les coffres à butin et les formes traditionnelles de jeux de hasard ont entraîné de graves risques psychologiques et financiers à long terme, particulièrement chez un public en grande partie mineur et vulnérable. Les organismes de réglementation doivent donc décider si les coffres à butin et les microtransactions devraient être abordés de la même façon que les activités liées aux jeux de hasard traditionnels. Cet article reconnaît que la définition juridique des jeux de hasard est une question de politique relevant de différentes assemblées législatives, et propose pour les coffres à butin et les microtransactions un nouveau cadre de classification que pourraient adopter à titre de guide les organismes de réglementation et les distributeurs de jeux vidéo qui exercent leurs activités dans le contexte mondial hyperbranché des jeux en ligne. Ce cadre vise à aider les décideurs à atteindre des objectifs en matière de bien-être des consommateurs tout en ne restreignant pas indûment la capacité des consommateurs adultes à prendre des décisions éclairées concernant leur participation à des activités de type jeux de hasard, et en ne nuisant pas de manière inappropriée aux entreprises commerciales légitimes des développeurs de jeux. Cet article enrichit le discours naissant sur l'intégration croissante de microtransactions et de coffres à butin à la structure et au contenu des jeux vidéo, et décrit un programme de réforme éclairé par la réaction mondiale à la question sur le plan de la réglementation.

Introduction

In 2020, a French lawsuit was filed against Electronic Arts (EA) alleging that its *FIFA Ultimate Team* game is wrongly classified as an online video game rather than a form of gambling (Usher, 2020). Lawyers for the claimant have stated: “We believe that a gambling game has been integrated into this video game because buying packs is nothing more than a bet. It is the logic of a casino that has entered their homes” (Usher, 2020). The claimant was said to have spent USD\$600 on in-game card packs between September 2019 and February 2020 (Usher, 2020). The packs, which were an example of loot boxes, may be purchased within the game for in-game or “real world” currency (Usher, 2020). The claimant’s experience, which he indicated has resulted in him falling behind on rental payments (Usher, 2020), was not unique, and demonstrated the risks of loot boxes and other in-game microtransactions (see, for example, Abarbanel, 2018; Clark et al., 2012; King & Delfabbro, 2016, 2018, 2019; Li et al., 2019).

“Microtransactions” is accepted as an umbrella term for in-game transactions and purchases through micropayments (King & Delfabbro, 2019; McCaffrey, 2019). Microtransactions deliver a range of content and services to players including “story extensions... additional play time, levels, new maps, virtual currency, weapons, armor, characters, or cosmetic items to customize the player’s character or items” (Schwiddeseen & Karius, 2014, p. 18). Cosmetic items obtained through

microtransactions are commonly referred to as “skins” and generally do not confer any in-game advantage (McCaffrey, 2019; Schwidessen & Karius, 2018). Conversely, loot boxes, which are often purchased through microtransactions, may deliver both significant in-game advantages, such as the weapons and characters sometimes found in in *Fortnite's* llama pinatas (see, for example, Epic Games, 2020), and less valuable prizes, including skins and other cosmetic items (McCaffrey, 2019). Schwidessen and Karius (2018) define loot boxes (which are also known as loot crates or prize crates) as

a consumable virtual item which can be redeemed to receive a randomized selection of further virtual items, ranging from simple customization options for a player’s game character, to game-changing equipment such as weapons, armor, virtual currency, additional skills, and even completely new or exclusive characters.... Loot boxes can be differentiated in two categories: Those dropping cosmetic items (“skins”) and those generating items relevant for gameplay progress (p. 18; see also Interactive Games and Entertainment Association, 2018).

Loot boxes are one of the most controversial types of microtransactions found in online games, predominantly because of the randomness with which players win valuable prizes and the psychological impacts of the business model behind the mechanism. As McCaffrey (2019) has explained, the high probability of receiving duplicate and low-value prizes incentivizes players to continue purchasing loot boxes in an effort to win more valuable or useful prizes. The exciting loot box environment, which often features lights and sounds, also makes the act of purchasing loot boxes exciting and inviting.

The randomness of loot boxes’ content, the potential to win game-changing items, and the experience of the psychological thrills of anticipation and winning, all of which exploit the same psychological traits and financial risks of traditional gambling, are said to contribute to excessive playing behaviors and psychological overinvestment in video games (Abarbanel 2018; Clark et al., 2012; King & Delfabbro, 2016, 2018, 2019; Li et al., 2019; Macey & Hamari, 2018).

The addictive nature of loot boxes has not come about by accident but rather is the result of the deliberate introduction of predatory monetization schemes into video games (King & Delfabbro, 2018, 2019; O’Malley, 2020). Indeed, many developers now rely on loot boxes and other microtransactions for a substantial part of their net revenue. EA, for example, made 28% of its net revenue in the 2019 fiscal year from its *Ultimate Team* service line (Electronic Arts, 2019). Loot boxes are a feature of many of the most commercially successful games including *Star Wars Battlefront II*, *Overwatch*, *Fortress II*, *Mass Effect: Andromeda*, *Forza Motorsport 7*, and *Counter-Strike* (Griffiths, 2018) and it is predicted that by 2022, the global annual spend on loot boxes and skins will be USD\$50 billion (Juniper Research, 2018). The growth of the online competitive gaming sector has been particularly strong during the recent COVID-19 pandemic as people around the world turn to video games for simulated competition and to fill the void left by the lack of live sport. Hence the importance of

the issue of exposure and access to loot boxes in many games is critical in the post-COVID landscape.

The commerciality of loot boxes presents a particular challenge for lawmakers and regulators who must balance the competing interests of consumers, particularly children, and commercial entities, such as developers and publishers. It is thus unsurprising that no consensus currently exists as to how loot boxes and other microtransactions should be regulated. On the one hand, certain jurisdictions (e.g., the United Kingdom, New Zealand, Canada, France, the Netherlands, Belgium, India, and arguably Sweden and Poland) focus on whether loot boxes and other microtransactions meet the legal definition of gambling. Generally this turns on whether items obtained in loot boxes are transferable for money or money's worth (Drummond & Sauer, 2018). On the other hand, different jurisdictions (e.g., the United States, South Korea, Japan, and China) have adopted a consumer protection approach and have regulated loot boxes and microtransactions on that basis (Chalk, 2018a; De Vere, 2012; Liu, 2019; Statt, 2018; Usher, 2011).

In light of their long-term psychological and financial risks, this paper supports a consumer protection approach to the regulation of loot boxes, to the extent such an approach is necessary to protect vulnerable players, namely children. The commerciality of loot boxes and their importance to the commercial ventures of developers is recognized, and it is not proposed that loot boxes or microtransactions more generally be regulated to the point that they lose all commercial meaning for developers. Given the obvious tension between the interests of developers and consumers, this paper proposes a new classification framework for video games featuring loot boxes and other microtransactions based on the magnitude of the risk of psychological harm. Thus, while the framework's most serious classification would apply to games and features which satisfy a jurisdiction's legal definition of gambling, it would also apply to those games which post the most serious risk of psychological harm. Other classifications are designed to deal with the evolving nature of online gaming and markets for in-game items. The classification framework is intended to give adult consumers adequate information to make informed choices about how and when to participate in gambling-like activities and parents the opportunity to make informed choices about the suitability of games for children. The framework is designed to be adopted by regulators universally and applied by industry stakeholders, such as ratings bodies and game publishers, thus bringing clarity and consistency to classification.

Whereas the proposed classification framework is designed to be applicable to games containing all forms of microtransactions, this paper focuses predominately on the risks associated with loot boxes. We made this decision not only because of the prevalence of loot boxes within online games, but also because of the psychological risks associated with loot boxes, in the context of a rapidly evolving sector associated with widespread online gaming engagement by vulnerable audiences.

This paper examines research evidencing the psychological and financial risks posed by loot boxes and commentary on how loot boxes ought to be regulated. Current

regulatory approaches to loot boxes are reviewed, distinguishing between those jurisdictions which focus on the legal definition of gambling, those which have adopted a consumer protection approach, those in which a blanket ban exists on gambling, and the approaches taken by the two largest ratings agencies, the Entertainment Software Review Board (ESRB) and Pan European Game Information (PEGI). We then propose a new framework for the classification of games featuring microtransactions to underpin future regulation and governance on this issue. Our research is intended to address a number of the gaps in esports, betting and loot box research identified recently by Greer and colleagues (2019), specifically aimed with informing policy, regulation and potential harm minimization interventions.

Literature Review

The Psychological Risks of Loot Boxes

Loot boxes are increasingly likened to traditional forms of gambling because of the psychological risks associated with the underlying monetization schemes (Abarbanel, 2018; King & Delfabbro, 2018, 2019). The similarities between loot boxes and traditional forms of gambling have raised concerns that loot boxes and other similar mechanisms may cue and enable children to participate in gambling activities, thus leading to increased problem-gambling. The monetization schemes used in loot boxes have been termed by King and Delfabbro (2018, p. 1967) “predatory monetization schemes,” a term later described by the same authors as purchasing systems which do not disclose the long-term cost of the particular activity and which exploit psychological and financial commitment to the particular activity (King & Delfabbro, 2019). Loot boxes have a specific ability to induce repeat purchases because of the low frequency and randomness with which they deliver valuable prizes (Drummond & Sauer, 2018; King & Delfabbro, 2018). Described in gambling literature as a “variable-ratio...schedule of reinforcement” (Rachlin, 1990, p. 295), this feature of loot boxes gives rise to certain of the same psychological experiences and emotions associated with regular gambling, including near misses and the feelings of winning and losing (Clark et al., 2012; King & Delfabbro, 2016). It is thus unsurprising that many players consider loot boxes to be a form of gambling (Brooks & Clark, 2019). Variable ratio reinforcement schedules are a type of psychological mechanism that commonly results in addiction because intermittent rewards are highly psychologically gratifying and therefore continually sought out through repeated behavior (Nabi & Charlton, 2014, citing Greenfield, 2011). The low payout rate of loot boxes is designed to compel players to make repeat purchases in the hope of winning a valuable prize, therefore experiencing psychological gratification, and to justify prior spending of money on unsuccessful boxes (King & Delfabbro, 2018; Li et al., 2019).

Deliberate attempts to encourage repeat purchases are of particular concern given the health risks associated with addictive gaming more broadly. These concerns led the World Health Organization (WHO) in 2018 to designate “gaming disorder” as an addictive behavior disorder in the International Statistical Classification of

Diseases and Related Health Problems (ICD-11). Key contributors to this decision were the similarities in “symptomatology, epidemiology and neurobiology” between gaming disorder and gambling disorder, including “impairment in personal, family, social, educational, occupational or other important areas of functioning and psychological distress” (World Health Organization, 2020).

Given the prevalence of loot boxes in games watched and played by children, significant concern exists that loot boxes may act as a “pathway” to problem gambling (Blaszczynski & Nower, 2002; Griffiths, King, & Delfabbro, 2009; King et al., 2010, 2014; King & Delfabbro, 2016; Gainsbury et al., 2016). Research reveals that 94% of mobile games featuring loot boxes and 35% of desktop computer games featuring loot boxes are considered appropriate for children aged as young as 12 (Zendle, Cairns, et al., 2020; Zendle, Mayer, et al., 2020) while 58% of the Google Play store’s “top games” feature loot boxes (Zendle et al., 2019; Zendle, Mayer, et al., 2020; see also Drummond & Sauer, 2018). Access and use of gambling-like mechanisms is said to lead to the development of gambling behaviors and /biased cognitive schemas which may ultimately result in problem gambling (Blaszczynski & Nower, 2002; Zendle, Cairns, et al., 2020). Additionally, increased familiarity with gambling activities, which may occur through regular exposure to gambling-like mechanisms, has been shown to lead to overconfidence or the belief that such activities are “just a game,” even when real money is at stake (Armstrong et al., 2018). Indeed, in a 2016 study conducted by Gainsbury et al. about the influence of online social gambling on real life gambling, 19.4% of respondents reported that they had gambled for money as a direct result of playing online social gambling games, and 9.6% of respondents reported that their overall gambling had increased as a result of playing online social gambling games. Further, those respondents who were identified as at-risk and problem gamblers reported higher levels of having gambled as a direct result of playing online social gambling games than other respondents.

A number of studies have revealed a similar link between the amount of money spent on loot boxes and problem gambling. Specifically, the amount of money spent on loot boxes has been shown to be positively correlated with the severity of problem gambling, particularly in adolescent populations (Brooks & Clark, 2019; Li et al., 2019; Zendle & Bowden-Jones, 2020; Zendle & Cairns, 2018, 2019; Zendle et al., 2019). One study has also revealed a strengthening, albeit of a relatively small magnitude, of the link between the amount of money spent on loot boxes and problem gambling when players command the ability to cash out loot box prizes, the option to pay to win, and when players experience near misses (Zendle et al., 2019). Links have also been found between the amount of money spent on loot boxes and the amount of time spent playing video games (Li et al., 2019; McBride & Derevensky, 2016), and between the spending of money on microtransactions and the probability of players migrating to traditional online gambling (Kim et al., 2015).

However, research has not yet ascertained whether the relationships between money spent on loot boxes, problem gambling, and gaming is because exposure to loot boxes increases problem gambling and gaming, or because problem gamblers and

gamers are more likely than other players to spend money on loot boxes (Brooks & Clark, 2019; Drummond & Sauer, 2018; Li et al., 2019; Zendle, 2019; Zendle & Cairns, 2019; Zendle, Cairns, et al., 2020). Li et al. (2019) suggest that “the uncertainty and excitement generated by loot box purchasing may prime players to seek out similar experiences through gambling and repetitive experiences of that excitement on an interval ratio reinforcement schedule, which is likely to lead to habituation of the behavior” (p. 31). However, the researchers also note the possibility of the link being because of the fact that gamers with pre-existing mood vulnerabilities are more likely than others to purchase loot boxes. This view is supported by Zendle’s 2019 study, which revealed that when loot boxes were removed from the *Heroes of the Storm* video game, problem gamblers spent less money in the game. However, the reliability of the results of that study may be open to question given the relatively small sample size used (Zendle, 2019). At least one study has found no link between in-game and off-line gambling (Macey & Hamari, 2018). Thus, although the majority of extant literature argues that a correlation operates between the use of loot boxes and problem gambling, further research is required to determine the extent of and reason for that relationship.

Conceptualization of loot boxes and regulatory frameworks

Despite the similarities between loot boxes and traditional forms of gambling, and the psychological and financial risks of both, a lack of consensus nevertheless exists as to whether loot boxes should be classified and/or regulated as gambling. Although the legal definition of gambling is a matter for each jurisdiction, the psychological definition of the particular type of risk-taking behavior is universal. Five characteristics identified by Griffiths (1995) are generally accepted as the components of the psychological definition of gambling, namely:

1. the exchange of money or items of value;
2. an unknown future event which determines the exchange;
3. the outcome being determined, at least in part, by chance;
4. the ability to avoid loss by not participating; and
5. winners gaining at the sole expense of losers.

In the context of loot boxes, Drummond and Sauer (2018), along with a number of regulatory bodies, posit that the ability to cash out in-game winnings into real-world currency is an important sixth element of gambling. However, this relates to legal, rather than psychological, conceptions of gambling (Drummond & Sauer, 2018).

Drummond and Sauer (2018) propose different regulatory approaches for loot boxes which meet both the legal and psychological definition of gambling and those which meet only the psychological definition. As to the former, external regulatory oversight is said to be warranted as the loot boxes amount to gambling operations. An age restriction the same as a jurisdiction’s legal gambling age is also said to be appropriate for games which enable players to “cash out” their winnings. In respect of all loot boxes which meet only the psychological definition of gambling,

Drummond and Sauer (2018) propose that ratings agencies increase the recommended minimum age for players, however no complete age restriction is suggested.

Industry self-regulation of loot boxes has been proposed by a number of commentators (Drummond & Sauer, 2018; King & Delfabbro, 2019; McCaffrey, 2019; Mistry, 2017). The benefits of a self-regulatory approach are said to stem from its ability to address particular concerns and issues without interference in an industry's commercial endeavors by governments and regulators (McCaffrey, 2019; Mistry, 2017). Self-regulation also enables a consistent global approach to particular issues, as can already be seen in certain instances. For example, both Apple and GooglePlay require that for any game listed on their respective stores, the odds of winning each type of reward in loot boxes be disclosed prior to purchase (Apple, 2019; GooglePlay, 2020). Unfortunately, such controls may be easily overcome by developers through simply making games available on other platforms. Additionally, in light of the significant commercial benefits of loot boxes (and indeed most microtransactions), subscription and adherence to self-regulatory measures may also be an issue (Xiao & Henderson, 2019). On the one hand, it may be argued that the commercial interests of developers create such an inherent conflict of interest with regard to the self-regulation of "money-making" mechanisms that effective self-regulation may be impossible. On the other hand, given the ever-increasing focus on corporate social responsibility, developers and industry groups may feel pressure to introduce stringent self-regulatory measures as the risks of microtransactions become more well known. Certain examples of this can already be seen. For example, in 2018, the Interactive Games and Entertainment Association released a fact sheet on loot boxes in which it reiterated its commitment to harm minimization for vulnerable participants (Interactive Games and Entertainment Association, 2018). The notion of corporate social responsibility appears to be driving broader industry self-regulation of video games. For example, to ensure maximum accessibility (which of course is both a commercial and corporate social responsibility concern), Riot has recently announced the compulsory censorship of blood in *Valorant* esports tournaments (Walker, 2020). If the presence of unregulated loot boxes starts to act as an accessibility barrier because of increased knowledge of the relevant risks, both commerciality and corporate social responsibility would arguably dictate a need for some level of industry self-regulation.

King & Delfabbro (2019) have formulated a social responsibility model of loot box regulation which largely relies on industry self-regulation. The model contemplates developers introducing measures to reduce the probability of players overspending. Certain proposed measures include the ability of players to set limits on their loot box spending, the removal of loot boxes of items which confer a competitive advantage, a ban on soliciting players to purchase loot boxes and making limited-time offers, a requirement for games to display the odds of winning particular prizes in loot boxes, and an age restriction for games featuring loot boxes (King & Delfabbro, 2019).

Although certain of these measures would necessarily be adopted by classifying loot boxes as gambling, the benefit of a social responsibility approach is that it has the

ability to apply to all microtransactions, regardless of whether they meet a legal or psychological definition of gambling. King and Delfabbro’s model has been described as one which effectively addresses many of the psychological concerns surrounding loot boxes (Xiao & Henderson, 2019). Of course, as with all self-regulation, an obvious difficulty arises in relation to the optional adoption, enforceability, and credibility of social responsibility measures (Xiao & Henderson, 2019). As previously discussed, this is particularly the case in relation to proposed measures which detract from the commerciality of loot boxes, such as the proposal that loot box prizes should not offer competitive advantages, to which developers may be unlikely to agree, particularly if the restrictions are blanket bans. In this regard, as an alternative to strict regulation, it has been suggested that governments attempt to incentivize gaming companies to adopt voluntary consumer protection measures by offering funding, tax relief, or other financial benefits (Xiao & Henderson, 2019).

Current Global Regulatory Approaches

Regulators around the world differ in their approach to the classification of loot boxes as gambling and the regulation of microtransactions. While certain regulators focus on whether microtransactions meet the relevant definition of gambling, others have adopted a broader consumer protection approach. Regulators differ in their views as to whether in-game items are transferable for money or money’s worth (which is a nearly universally required element of gambling) and whether loot boxes are likely to cause similar psychological harm to traditional gambling. Debate also continues as to the extent to which it is appropriate to regulate what may be described as a genuine commercial activity in the name of consumer protection. Table 1 summarizes the approach taken by a number of jurisdictions with respect to the classification and regulation of loot boxes.

Transferability of In-Game Items for Money or Money’s Worth

Certain jurisdictions have elected not to make definitive statements about the status of loot boxes, rather instead stating that loot boxes will constitute gambling *if* the in-game goods are transferable or can be sold for money or money’s worth (Drummond & Sauer, 2018). In the United Kingdom for example, where the *Gambling Act 2005* provides that “gaming” means “playing a game of chance for a price” (s.6(1)) and “prize” means “money or money’s worth” (s.6(5)), the United Kingdom Gambling Commission (2017) has stated that “[w]here there are readily accessible opportunities to cash in or exchange those awarded in-game items for money or money’s worth those elements of the game are likely to be considered licensable gambling activities” (para. 3.17). Conversely, where loot box prizes can only be used within the game, the loot box mechanisms are unlikely to be considered gambling even though the s. 6 *Gambling Act* elements of “playing” and “chance” will be satisfied (Arvidsson, 2018; United Kingdom Gambling Commission, 2017). The Netherlands Gaming Authority has taken a similar approach, stating that “loot boxes will constitute gambling if the in-game goods from the loot boxes are transferable” (Netherlands Gaming Authority, 2018, para. 4). The position of the Dutch regulator is noteworthy

Table 1

Summary of classification of loot boxes as “gambling,” “gaming,” or “games of chance” in different jurisdictions

Jurisdiction	Definition of “gambling”/“gaming”/“games of chance”	Are loot boxes captured by definition of gambling/gaming?
Belgium	“Gambling” involves both a wager and a loss or win of any type. (<i>Gaming and Betting Act</i> , Article 2(1))	Yes, if loot boxes are purchased with money, either directly or indirectly (i.e., with real currency or in-game currency which itself was purchased with real money) (Scott, 2018).
Canada	“Game” means game or chance or mixed chance and skill. (<i>Criminal Code</i> 1985, s. 197) It is an offence to dispose of “any goods, wares or merchandise by any game of chance or any game of mixed chance and skill in which the contestant or competitor pays money or other valuable consideration.” (<i>Criminal Code</i> 1985, s. 206(f))	Position currently uncertain. Arguable that loot boxes fall within definition of “game” because they are a game of chance. Arguable that loot boxes fall within s. 206(f) prohibition <i>if</i> items contained within them are transferable for money or money’s worth and loot box is purchased with money or virtual currency (Lipton and Tadman, 2012; Schwidessen & Karius, 2018).
China	“Gambling” means an activity, for the purpose of making a profit, assembling persons to engage in gambling, opening or operating a gambling house or making gambling a profession. The <i>Criminal Law</i> does not more specifically define “gambling.” (<i>Criminal Law</i> , Article 303)	No. Loot boxes are subject to a different regime which mandates disclosure of odds and limits the amount of money that players can spend per transaction when purchasing in-game items or services (Liu, 2019).
France	“Game of chance” includes any operation offered to public participation, regardless of the designation it may receive, to trigger the hope of a gain which would be acquired, even particularly, through chance and for which the operator requires from participants a financial contribution. (<i>French Code of Homeland Security</i> , Article L.322)	No, because “items obtained through [loot boxes] have no real-world value” (Chalk, 2018b). However, the position may change pending the outcome of the recent lawsuit filed against EA in France (Usher, 2020).
Germany	“Games of chance” require (1) valuable consideration, (2) determination of winnings entirely or predominantly a matter of chance, and (3) consideration given in exchange for a chance to win. (<i>Interstate Treaty on Gambling</i> , s. 3(1))	No, the Unterhaltungssoftware Selbstkontrolle, the German Gaming Regulator, has stated that it is not considering a general ban on loot boxes (Moshirnia, 2018; Chalk 2018b).
Japan	Gambling and other gaming activities are not defined, but are banned, by the Penal Code.	“ <i>Kompu gacha</i> ,” a mechanism whereby players can collect a grand prize if they complete a set of items from randomized loot boxes, are subject to fines (De Vere, 2012; Liu, 2019; Moshirnia, 2018). Regular <i>gacha</i> , which are similar to ordinary loot

Table 1 Continued.

Jurisdiction	Definition of “gambling”/“gaming”/“games of chance”	Are loot boxes captured by definition of gambling/gaming?
New Zealand	“Gambling” means paying or staking consideration, directly or indirectly, on the outcome of something seeking to win money when the outcome depends wholly or partly on chance. (<i>Gambling Act</i> 2003, s. 4)	boxes, are not banned (Moshirnia, 2018; Liu, 2019; De Vere, 2012). No, the New Zealand Gambling Compliance Office of the Department of Internal Affairs has stated that loot boxes “do not meet the legal definition of gambling” because “people do not purchase loot boxes seeking to win money or something that can be converted into money” (Cross, 2017; see also Moshirnia, 2018).
Poland	“Games of chance” means all games, including games organized via the internet, for cash or in-kind prizes, the results of which are specific in the terms and conditions of a given game. “Slot machines” means games played with the use of mechanical, electromechanical or electronic devise, computers included, as well as games that reflect the rules of slot machine games held via the internet network, for cash or in-kind prizes, where the game features an element of chance. “In-kind prizes” includes additional play time and additional free games. (<i>Gambling Act</i> 2009, s. 2)	Position unclear however, given the broad, inclusive, definition of in-kind prizes, it seems arguable that loot boxes fall within the definition of gambling (Schwiddessen & Karius, 2018). Nevertheless, the Polish regulator has made an unofficial statement that the list of gambling games in the <i>Gambling Act</i> does not allow for the recognition of loot boxes as gambling (Schwiddessen & Karius, 2018; Dynowski & Sałajczyk, 2020).
Sweden	“Gambling,” in the context of computer and online games, means a computer game in an event determined by chance in which the player wins something that, outside of the computer game’s virtual environment, can be bought and sold for money or money’s worth. (<i>Gambling Act</i> 2018, Chapter 2 s. 3)	Position unclear however arguable that loot boxes will be gambling if the in-game items can be traded or exchanged for money or money’s worth (Schwiddessen & Karius, 2018).
The Netherlands	“Games of Chance” means those games that provide an opportunity to compete for prizes or premiums if the winners are designated by means of any calculation of probability over which the participants are generally unable to exercise a dominant influence. (<i>Betting and Gaming Act</i> 1964, Article 1(1)(a))	Yes, if the in-game items are transferable for money or money’s worth (Scott, 2018).
United Kingdom	“Gaming” means playing a game of chance for a price. “Prize” means money or money’s worth. (<i>Gambling Act</i> 2005, (UK) s. 6)	Yes, if the loot boxes contain items which can be “cashed-in” or exchanged for money or money’s worth (United Kingdom Gambling Commission, 2017).

in light of a 2012 decision of the Dutch Supreme Court which held that in-game items in *RuneScape* were capable of being stolen despite the fact that the *RuneScape* player contract provides that players do not own in-game items (Virtual Policy Network, 2012). Thus, the Netherlands Gaming Authority does not equate value with the capability of being stolen (cf. the Canadian position discussed below). The Belgian Gaming Commission (2018) has indicated that if loot boxes are purchased with money, either directly or indirectly, the items within them are taken to have value in themselves (see also Scott, 2018). Accordingly, loot boxes which are purchased for money will likely fall within the Belgian definition of gambling (Scott, 2018). Although the position is presently unclear with regulators having only made informal statements, the same argument may be made in the context of Swedish and Polish laws (*Gambling Act* 2009, Poland; *Gambling Act* 2018, Sweden; Schwiddessen & Karius, 2018).

Regulators in other jurisdictions have made seemingly definitive statements that loot boxes do not amount to gambling. The Autorité de Régulation des Jeux en Ligne, the French Gambling Regulator, for example, has explicitly stated, rightly or wrongly, that loot boxes do not fall within the legal definition of gambling because “(1) there is always a prize and (2) the items obtained have no real-world value” (Chalk, 2018b). The New Zealand Gambling Office of the Department of Internal Affairs has similarly stated that “the Department is of the view that loot boxes do not meet the legal definition of gambling [because] people do not purchase loot boxes seeking to win money or something that can be converted into money” (Cross, 2017, cited in Moshirnia, 2018, p. 105; see also Hafer, 2018).

Blanket Prohibitions on Gambling

Similar questions arise in those jurisdictions in which there is a *prima facie* blanket prohibition on gambling. In Canada, for example, s. 206 of the *Criminal Code* 1985 imposes a blanket prohibition on gambling, though s. 207 allows the provinces to license gambling activities within their regions. The s. 206 *Criminal Code* 1985 (Canada) prohibition applies to games of chance which are purchased by players and which award a prize. Little debate exists that loot boxes will satisfy the “chance” requirement of s. 206, even if they constitute only a small part of a skill-based game (Schwiddessen & Karius, 2018; s. 206(1)(f) *Criminal Code* 1985 (Canada)). It is less certain, though indeed arguable, that loot boxes also satisfy the remaining two criteria of s. 206. As to the requirement for payment, the purchase of loot boxes with real money will clearly suffice. The initial purchase price of a game or the price paid for access to additional in-game content may also satisfy this requirement (Czegledy, 2013; Nadeau et al., 2014; Schwiddessen & Karius, 2018). Although less clear, the use of virtual currency to purchase loot boxes may fulfill the requirement for payment because, as Lipton and Tadman (2012) have explained, virtual currency is legal property capable of being stolen and therefore has monetary value (see also Schwiddessen & Karius, 2018 though cf. the position in the Netherlands). Loot boxes containing prizes capable of being traded either through games or on secondary markets will satisfy the *Criminal Code* 1985 (Canada) requirement for a “prize”

because those prizes are money or money's worth (Lipton and Tadman, 2012; Schwidessen & Karius, 2018). Despite these broadly accepted views, loot boxes currently remain largely unregulated in Canada and it has been said that only a low enforcement risk is in place in respect of potentially illegal loot boxes and other online gambling operations (Schwidessen & Karius, 2018).

In India, gambling is generally prohibited under the *Public Gambling Act 1867*, though that position can and has been altered by legislation of certain states (see, for example, the *Sikkim Online Gaming (Regulation) Act 2008*, which provides for a licensing regime in respect of online games of chance). The general prohibition on gambling applies to chance-based games and therefore arguably applies to loot boxes, though the position is presently unsettled (Jain, 2020). The question for regulators in each Indian state, and other jurisdictions with *prima facie* blanket prohibitions on chance-based games, is not whether loot boxes constitute gambling, but whether they should be subject to an exemption from the general rule. This matter is, of course, a question of policy, and will need to be answered with reference to the competing interests of developers, children, and the general public.

Consumer Protection

Perhaps surprisingly, those jurisdictions which have adopted a consumer protection approach to the regulation of loot boxes have not classified loot boxes as gambling. Rather, other more generally applicable measures have been introduced to address concerns relating to children and the psychological risks of loot boxes.

South Korea has adopted a consumer protection approach to loot boxes with a particular focus on children. In 2012, the Government introduced regulation requiring games developed by companies with over 100 employees and USD 27 million in revenue to include built-in control systems allowing parents to control when children play games (Liu, 2019). Games sold in South Korea must also be approved by the Games Rating Board, which retains discretion to refuse approval on various grounds, including a game's potential to constitute online gambling, as occurred in relation to *Diablo III* (Usher, 2011). South Korea's consumer protection approach is also evident from action taken by the country's Fair Trade Commission against game developers for deceptive loot box promotions (Fingas, 2018). For example, in 2018, the Commission fined Nexon for failing to disclose that the probability of winning certain items through loot boxes in *Sudden Attack* was less than 1% (Fingas, 2018).

Japan and China have also adopted a consumer protection approach to the regulation of loot boxes. In Japan, *kompu gacha*, mechanisms through which players can collect a grand prize if they collect a complete set of items from randomized loot boxes, has been found to breach the *Act Against Unjustifiable Extra or Unexpected Benefit and Misleading Representations* and the *Act Against Unjustifiable Premiums and Misleading Representations* (De Vere, 2012; Liu, 2019). Regular *gacha*, mechanisms similar to ordinary randomized loot boxes, have not been found to be illegal (De Vere, 2012; Liu, 2019). Thus, the Japanese position is not premised on the basis

that in-game items are transferable for money or money's worth. Rather, the rationale for the Japanese position is that the *kompu gacha* mechanism is lucrative and exploitative because the cost of completing a set of items from the randomized loot boxes far exceeds the value of the grand prize and the expected payouts from *kompu gacha* are therefore significantly lower than what gamers pay to participate in the draw (Koeder & Tanaka, 2017; Liu, 2019).

While China has also not definitively stated that loot boxes constitute gambling, the Ministry of Culture has nevertheless introduced regulation requiring online game operators to “disclose the name, property, content, quantity, and draw/forged probability of all virtual items and services that can be drawn/forged on the official game website or a dedicated draw probability webpage of the game” (Liu, 2019, p. 783). Developers and game operators must publicly announce the winners of random draws and build into their games limits on the amount of money which can be spent in individual in-game transactions (Liu, 2019). The Chinese approach has been applauded by commentators as a sensible balance of the commercial interests of developers and the need to protect gamers from gambling fallacy (Liu, 2019).

In the United States, loot boxes are not generally considered to amount to gambling. Nevertheless, the multiple attempts to regulate games containing loot boxes and other similar mechanisms have all stemmed from consumer protection concerns. For example, legislation making it unlawful to sell video games containing loot boxes and similar mechanisms were introduced to the Hawaiian parliament on the basis that mechanisms such as loot boxes present psychological, financial, and addiction risks which are similar to those presented by gambling (see, for example, *A Bill for an Act Relating to Consumer Protection*, House of Representatives, Twenty-Ninth Legislature, 2018, State of Hawaii, HB No. 2868, s. 1).

Game Classification Agencies

Classification and rating agencies around the world have generally adopted a consumer protection approach to the rating of games featuring loot boxes and other microtransactions.

In April 2020, both the ESRB and PEGI, being the two biggest and most influential rating agencies, announced new warning labels for in-game purchases featuring random items. Both labels, “In-Game Purchases (Includes Random Items)” (ESRB) and “Includes Paid Random Items” (PEGI), apply to games featuring in-game offers to purchase digital goods or premiums with real money or in-game virtual currency which itself can be purchased with real money and in which the player does not know what specific good or premium they will receive prior to purchase. According to the ESRB, the label “will be assigned to all games that include purchases with any randomized elements, including loot boxes, gacha games, item or card packs, prize wheels, treasure chests, and more” (ESRB, 2020). The new labels are separate to each organization's “In-Game Purchases” label and are designed to specifically differentiate games featuring paid random items from games featuring paid known

items thereby allowing consumers to make more informed decisions when purchasing or downloading games (ESRB, 2020).

The new “random item” labels are separate from each agency’s game classification and rating system. Under the ESRB system, games featuring “simulated gambling,” defined as gambling “without betting or wagering real cash or currency” attract a “Teen” rating. In light of the previously discussed evidence relating to the psychology of loot boxes and other in-game games of chance it therefore seems arguable that any game to which the “In-Game Purchases (Includes Random Items)” label applies should have a “Teen” rating. This rating applies to games with content “generally suitable for ages 13 and up” which may also contain “violence, suggestive themes, crude humor, minimal blood ... and/or strong language.” Games which feature gambling with real currency are rated by the ESRB as “Adults Only 18+.” Other content types which attract this rating include “prolonged scenes of intense violence” and “graphic sexual content” (ESRB, 2020).

Similarly, the PEGI classification system attributes a rating of 12 to games featuring “gambling as it is normally carried out in real life in casinos or gambling halls ... (e.g., card games that in real life would be played for money).” The PEGI 12 rating also applies to games featuring “violence of a more graphic nature towards fantasy characters or non-realistic violence towards human-like characters,” “sexual innuendo or sexual posturing,” and mild bad language. Under the PEGI system, games featuring games of chance are rated PEGI 16, together with games in which “the depiction of violence (or sexual activity) reaches a stage that looks the same as would be expected in real life” and games featuring extreme bad language, tobacco, alcohol, or illegal drug use. PEGI’s highest rating, 18, applies “when the level of violence reaches a stage where it becomes a depiction of gross violence, apparently motiveless killing, or violence towards defenseless characters,” when illegal drug use is glamorized, and when games feature explicit sexual activity. The PEGI content descriptor for gambling applies to all games that “encourage or teach gambling,” including through simulating gambling; and any game which features such content will be rated at least PEGI 12. PEGI has stated that its classification system is intended to “provide guidance to consumers, parents in particular, to help them decide whether or not to buy a particular product for a child” and is “considered as a model of European harmonization in the field of the protection of children” (PEGI, 2020).

A New Classification Framework

Whereas a lack of definitive empirical evidence exists linking loot boxes to problem gambling (McCaffrey, 2019), the risk that such a link does in fact exist warrants regulatory intervention, at the very least in respect of the protection of children (King & Delfabbro, 2018; McCaffrey, 2019). Not only must any regulation balance the competing interests of the public and the gaming industry, but also it must be adaptable enough to respond to quickly evolving technologies (Abarbanel, 2018). For example, although the view that loot box prizes are not comparable to money may presently hold true at least in respect of certain in-game items, increasing

technological capabilities and the increase of secondary markets for in-game items will eventually mean that a large proportion of loot box prizes will be convertible into money. Websites such as FutGalaxy.com, through which users could previously convert virtual currency into FIFA coins for use in the FIFA game series and then sell those coins for real money, provide a good example of how in-game items may be transferred for money or money's worth, even if games themselves do not contemplate or allow trading (Arvidsson, 2018; Stewart-Jones & Mason, 2017). This practice is becoming increasingly common in respect of skins (Macey & Hamari, 2018).

It is unlikely that any one regulatory approach will sufficiently deal with the many challenges presented by loot boxes and other microtransactions, many of which are heightened by the conflicting interests of consumers and developers. For example, despite commitments by certain game developers and industry bodies to safeguard the interests of children, evidence suggests that parents in Australia do not consider that the industry provides them with enough support (Australian Senate Standing Committee on Environment and Communications, 2018). In a submission to the Australian Senate Standing Committee on Environment and Communications, one parent noted his concerns with the “seemingly deliberate lack of controls implemented” to assist him to control his children’s spending on loot boxes (Australian Senate Standing Committee on Environment and Communications, 2018, para. 4.68; see also Bruton, 2018). In a separate submission, Mr. Stephen Dupon, Director of the Institute of Games, acknowledged the commitment of the industry to protecting children while also noting the commercial interests and pressures of developers (Australian Senate Standing Committee on Environment and Communications, 2018). This evidences the difficulties with relying solely on self-regulation as a means of protecting the interests of children and other vulnerable gamers. Accordingly, some level of governmental regulation appears necessary (McCaffrey, 2019). That is not to say, however, that self-regulation does not have a role to play. Indeed, self-regulation is likely to play an important role in ensuring that protection measures are able to quickly evolve in response to the changing threats inherent within the gaming industry and in respect of which delays in legal and political processes may hold up effective and timely responses (McCaffrey, 2019).

One example of the power of self-regulation in this regard can be seen from the speed with which the Entertainment Software Association, the major trade association for the video game industry in the US, responded to a controversy regarding loot boxes in *Overwatch* (McCaffrey, 2019). A further benefit of some level of self-regulation is its ability to promote consistency between jurisdictions. For example, the PEGI ratings classification system is used in 37 European countries while certain developers, including Blizzard and EA, have made the decision to publish the odds of winning loot box items, even in those jurisdictions where doing so is not currently mandatory (Barrett, 2017; Taylor, 2018; McCaffrey, 2019). It can, therefore, be seen that the optimal regulation of loot boxes requires both government and industry self-regulation (McCaffrey, 2019). In this regard, it is proposed that regulators adopt a compulsory four-point classification framework, similar to that already used by the ESRB and the PEGI which can then be applied by relevant industry bodies.

Our proposed four-point classification framework differs to those used by the ESRB and the PEGI as the presence of simulating gambling and gambling is a determining factor in a game's classification, rather than content that is merely highlighted for consumer (or parental) attention. Moreover, in an effort to allow the highest level of informed consumer choice, our framework contemplates the application of multiple classifications to the one game, with the most serious classification determining the game's overall age rating. That is, the classifications in the framework are not mutually exclusive and are designed to enable the highest level of informed consumer choice while also protecting the commercial interests of developers. Our framework is designed to be capable of implementation in accordance with different jurisdictions' definitions of gambling (including legal ages) and to be flexible enough to deal with the rapid evolution of video games and associated external markets.

Four-Point Classification Framework

Gambling

A "gambling" classification should apply to all games which satisfy a jurisdiction's specific legal definition of gambling. Games which satisfy a particular jurisdiction's legal definition of gambling should be regulated in that jurisdiction to the same extent as traditional gambling activities. For example, all games which fall within the scope of s. 206 of the Canadian *Criminal Code* should be prima facie banned and their operators or developers require licenses to lawfully operate in Canada. This criteria for the application of the "gambling" classification would provide clarity for both developers and consumers that in any jurisdiction, a video game containing mechanisms which satisfy that jurisdiction's legal definition of gambling would be classified as such. As is evident from the Canadian example, this is presently not the case. It is of course possible that subjecting video games to the same regulation as traditional gambling activities will discourage developers from operating in jurisdictions with particularly tight gambling controls or onerous regulations; however, evidence from other industries suggests that this burden will simply become a commercial consideration for developers when deciding if and how to operate in different jurisdictions. For example, tobacco companies continue to operate in highly regulated jurisdictions and, when doing so, can sometimes be required to make changes to their products and packaging in addition to their marketing and business strategies. Similarly, film producers often make alternative versions of movies to ensure that they fall within the intended classification around the world.

More importantly, the "gambling" classification should also apply to all games which allow the trading of items won through loot boxes within the game itself, irrespective of whether or not those items can be transferred for money or money's worth in an external market. This is because as soon as in-game items are able to be traded, they become valuable to players and therefore satisfy Griffiths's (1995) psychological definition of gambling. Given the long-term risks associated with activities that satisfy the psychological definition of gambling, it is appropriate that

they be classified in the same manner as traditional gambling activities so that consumers are sufficiently aware of those risks.

Games with this classification should be required to disclose the odds of winning specific chance-based items. In order for this requirement to be effective, it would be important for regulators to ensure that odds are not disclosed in a misleading or deceptive manner. Whereas disclosure of odds is unlikely to effectively prevent problem-gamblers from making irrational decisions, evidence still suggests that such information can assist the decision making of low risk or non-problem-gamblers (Australian Senate Environment and Communications References Committee, 2018). Mandatory disclosure of the odds of winning chance-based items may also lead to increased industry self-regulation. For example, following significant media backlash relating to loot boxes generally, Blizzard dramatically increased the odds of winning highly desirable items in *Hearthstone* and *Overwatch* (Tassi, 2018). In 2017 and 2018, the media backlash against loot boxes was so strong that one commentator observed almost all the public conversation about new games related to their monetization systems and how exploitative they are (Tassi, 2018). Indeed, EA was forced (by Disney, though as a result of media and consumer backlash) to remove the microtransaction system in *Star Wars: Battlefront 2* just hours before its 2017 launch (Hruska, 2017, 2018).

Known external market for in-game items

A unique challenge in the regulation of loot boxes is the creation of markets for in-game items by third parties and on external sites, even when the trading of in-game items is technically prohibited by a developer's terms of service. However, as games are now predominately sold in electronic form, rather than on a hardcopy disc or drive, a classification warning of the existence of third-party markets is no longer inconceivable. Just as listing rules around the world require disclosure of particular information within set timeframes, regulators could require developers and industry bodies such as the ESRB to update a game's classification within, for example, 10 days of becoming aware of an external market for in-game goods. Difficulties with this requirement include the ability of regulators to enforce the requirement against developers and industry bodies when it is often third parties who create the relevant market in breach of developers' terms of service, and the risk of a more stringent rating adding value to goods within secondary markets. However, these hurdles are not insurmountable. Numerous regulatory requirements are in place which require companies to take action within a certain period of becoming aware of a particular event or circumstance including, for example, the continuous disclosure requirements in the ASX Listing Rules. Additionally, whereas regulators and perhaps the general public could initiate legal action or other disciplinary proceedings upon themselves becoming aware of a breach (and, in the case of the general public, suffering damage as a result of that breach), the requirement nevertheless could also be upheld with the assistance of a self-reporting system. For example, regulators may agree to imposing lesser fines on developers and industry bodies who self-report or that fines will only be imposed if the same developer or industry body self-reports three or more

breaches within a calendar year. Although a risk does exist that the prospect of a more stringent rating being applied to a game will increase the value of goods within a secondary market before that occurs, or indeed make users more aware of secondary markets, the risk is relatively small. This smallness is because the increased rating will only affect those players below the legal gambling age.

As the existence of an external market for in-game goods adds value to those goods (even if not always in a purely monetary sense) (Nielsen & Grabarczyk, 2018), games with this classification should also be restricted to those over the legal gambling age. Of course, this may mean that certain games become restricted, having previously been available to children. In this case, parental consent should be required to continue playing or purchasing loot boxes. Given the speed at which updates and new additions to online games are made available, a requirement for parental consent following a change in a game's classification does not seem unfeasible. Depending on the jurisdiction, developers may be able to take legal action against third parties who create external markets in breach of the relevant terms of service or player contracts if the developers can establish that the imposition of a more stringent rating because of the existence of an external market for in-game items has caused them to suffer loss or damage.

Simulated gambling

A “simulated gambling” classification should apply to those games which do not meet the legal definition of gambling, but which exploit the same psychological elements as traditional gambling. This classification should capture those games which, for example, deliberately compel repetitive behaviors through variable ratio reinforcement schedules or planned near misses (King & Delfabbro, 2018; Li et al., 2019) as well as those including features which cue gambling attitudes and behaviors in the same way as junk food and alcohol advertisements (Park et al., 2015). As in the PEGI gambling content descriptor, this classification would be intended to capture games which “encourage or teach gambling,” even if the particular feature is not monetized. Games featuring simulated gambling should be subject to a minimum age rating.

Given the number of games which feature variable ratio reinforcement schedules, planned near misses, and cue gambling attitudes and behaviors, the potential scope of a simulated gambling classification is extremely broad. For example, the classification would apply to games such as *Mario Party*, which feature near misses in the context of die rolls; *Slotomania* and *Caesars Casino*, which feature virtual casinos and “real” gambling games though without money or the need for players to gamble or trade chips or any other in-game item; and *Fortnite*, which features chests containing random weapons, ammunition, and other items that are opened during the usual course of gameplay in addition to other loot boxes, known as Llama Pinatas, which can be purchased with in-game currency. Despite the differences between these types of games, evidence indicates that they all present similar psychological risks and may lead to problem gambling (e.g., Armstrong et al., 2018; Blaszczynski & Nower, 2002; Zendle, Cairns, et al., 2020, all discussed above). It is

therefore appropriate that they all attract the same classification. To overcome issues associated with games being too stringently rated, different age restrictions and warning labels regarding the type of simulated gambling should be applied to games falling within this classification. In this regard, the warning labels for this category could be similar to those featured on children’s toys through which parents are warned of risks specific to the toy and given an appropriate age range for the toy. Given the scope of this classification, there will undoubtedly be a large range of age ratings however such flexibility is necessary for informed consumer choice and to protect the commercial interests of developers. Indeed, as the psychological risks of gambling-like mechanisms, including mere near misses, become more well-known and established (Kao, 2020), it may reasonably be argued that corporate social responsibility and ethical considerations justify developer inclusion of a warning label on all games that pose a risk of long-term psychological harm (Korhonen, 2019; Xiao & Henderson, 2019). Notwithstanding ethical and corporate social responsibility concerns, the feasibility of this particular classification remains difficult in the ever evolving and nuanced video game landscape. In this regard, the creation of a committee comprising of psychology experts and relevant stakeholders, including developer representatives and consumer protection advocates, has the potential to play an important role in the protection of consumer and developer interests and ensuring that classifications continue to reflect societal values. By reviewing classification guidelines each year, such a committee could ensure that classifications are applied to games in a manner consistent with changing societal values and increased knowledge as to the psychological risks of video games.

To ensure parents are able to make informed choices about the suitability of games for children, warning labels on games with this classification should be accompanied by links to relevant information regarding the psychological risks of exposure to the particular gambling-like mechanisms found within the game (Australian Senate Standing Committee on Environment and Communications, 2018; Deblaquiere et al., 2018). Such a cautionary measure is particularly important given the generational gaps in the knowledge and education about online gaming and the monetization systems used within them (e.g., Australian Senate Standing Committee on Environment and Communications, 2018; Suh, et al., 2017). For example, in its submission to the Australian Senate Standing Committee on Environment and Communications, the Australian Institute of Family Studies noted that “a lack of understanding of the issues [concerning loot boxes] among those ‘not versed in gaming culture’ means that ‘such practices are often unclear to parents and, therefore, difficult to supervise’” (Australian Senate Standing Committee on Environment and Communications, 2018, para. 3.68; see also Deblaquiere et al., 2018). Mr. Dupon similarly submitted that there a need continues for further education of parents about the risks and impacts of video games (Australian Senate Standing Committee on Environment and Communications, 2018).

In-game microtransactions

A final proposed classification, “in-game microtransactions,” which is already used by the ESRB, the PEGI, the Apple AppStore, and the GooglePlay Store, should be

introduced to warn consumers and parents of the presence of potentially hidden microtransactions within a game. Introduction of such a classification would address a number of the concerns relating to the possibility of players unintentionally or unknowingly spending money within a game (King & Delfabbro, 2019). Games falling within this classification should be subject to age restriction lower than that used for the simulated gambling classification but high enough that it serves as a warning that the games are unsuitable for children who do not understand the concept of spending money and microtransactions. Again, the exact age restriction will ideally be determined by psychology experts in consultation with a committee of relevant stakeholders, including developers and consumer protection advocates. Games featuring in-game microtransactions should be required to give a visual warning or additional request for player consent before players spend money (King & Delfabbro, 2019), and have built-in controls which enable players to turn off features involving microtransactions or set their own spending limits (Banks, 2011; Victorian Responsible Gambling Foundation, 2018). In this regard, the classification will operate in a manner similar to safe use warning labels which have been shown to result in more positive behavioral changes than moderation/cessation warning labels (Purmehdi et al., 2017). The in-game microtransaction classification should apply to all games in which in-game purchases are possible, even if purchased items can also be obtained through gameplay or simply waiting for a given period of time as is the case in *Clash Royale* and *Crash Team Racing: Nitro Fueled* respectively. The classification should apply whenever microtransactions are present, even if products or services purchased through microtransactions do not affect gameplay or are simply a way of purchasing expansion packs, as in *Sonic Mania* and *Jurassic World Evolution*. Whereas the mere existence of warning labels and notifications does not guarantee consumer protection and broader risk prevention, evidence still emerges, from within a range of contexts such as junk food and cigarette advertising, that warning labels positively influence consumer choices and behaviors (see, for example, McCool et al., 2012; Roberto et al., 2016). Accordingly, the warnings will serve a broader consumer protection function without impeding the ability of adult consumers to make their own choices about spending money.

Such a classification framework would enable parents to make informed choices as to the suitability of different games for children while at the same time enabling adult consumers to make informed choices about how and when they participate in gambling activities. Moreover, the same classification framework could be adopted by regulators and industry bodies around the world and then applied in accordance with domestic laws. Such an implementation would enable consumers to receive the same information regardless of the jurisdiction in which games are purchased. It may reasonably be suggested that the above classification framework and proposed application of it by relevant industry bodies is idealistic and will fail for want of support by largely commercially motivated game publishers. However, extant evidence suggests that this may not be the case. Additionally, in jurisdictions where similar reforms have already occurred, developers have seemingly been commercially incentivized to amend their games to avoid commercially unfavorable classifications. For example, Blizzard, Valve, 2K, and EA have all removed loot boxes from the

Belgian versions of their games following a decision of the Belgium Gambling Commission that loot boxes amount to illegal gambling (Orland, 2019), whereas new games, such as EA's *Jedi: Fallen Order*, have been released with no loot boxes or microtransactions and a statement that they will not be added (Roberts, 2019). In this regard, it may be that regulators will be assisted in their consumer protection endeavors by the ever-increasing focus on consumer welfare outcomes.

Like most classification and rating systems, and indeed regulations more broadly, the success of the proposed classification framework will be limited by its ability to respond and adapt to advancing and creative technologies used within games. For example, despite its broad scope, the simulated gambling classification will not, in its current form, apply to games featuring mechanisms which are designed to compel repeated behavior or induce purchases but which do not exploit the same psychological traits as traditional gambling. This limitation may be addressed, at least in part, by the creation of a committee of experts and stakeholder representatives who can assess and amend the classification framework in light of technological developments, additional research, and changing societal values. A further limitation of the proposed framework is its potential to "over-classify" games in the sense that a game which falls within more than one classification may appear more harmful than it is. Although this is undoubtedly a commercial concern for developers, the framework will not achieve its objective of enabling a high level of informed consumer and parental choice if meaningful information is excluded from labels and the like. Moreover, as further research as to the long-term psychological effects of video games comes to light, it is likely that developers will be seen to have ethical and corporate social responsibility obligations to disclose such risks to consumers and parents of underage consumers (Korhonen, 2019; Xiao & Henderson, 2019). In its current form, the proposed framework does not address the risk of psychological harm to viewers of video games containing gambling-like mechanisms on platforms such as Twitch. The application of a similar classification to streaming sites, and the viability thereof, is an area which warrants further research.

Conclusion

Even though not all the existing evidence is conclusive, it is clear that loot boxes pose significant psychological, and even financial risks, particularly to minors. Accordingly, the regulation of loot boxes and other microtransactions from a consumer protection perspective is appropriate, though must of course acknowledge the commercial interests of developers and the gaming industry, and the tension between the conflicting interests of all involved parties. In particular, children should be restricted from accessing any mechanisms which fit a jurisdiction's legal definition of gambling or which fulfill all of the criteria of the psychological definition of gambling. In respect of other types of loot boxes and microtransactions, parents should be sufficiently educated on the psychological risks posed to their children, and a classification framework which enables parents to make informed choices as to the suitability of games for children should be adopted.

The classification framework proposed in this paper achieves this goal while also enabling adult consumers to make informed, but not restricted, choices as to when they engage in gambling-like activities. Importantly, the framework also protects the commercial interests of game developers and the industry at large. In this regard, the proposed tiered classification approach based on the seriousness of the risk of psychological harm posed by individual games differs from previously suggested classification frameworks. Additionally, the framework is designed to be implemented in a regulatory sphere involving cooperation between government regulators and the industry. The framework has been designed to be capable of adoption by government regulations and implemented through industry self-regulation. Further research is necessary to determine the global viability of the proposed framework. In particular, pilot testing should be carried out to ascertain whether it is feasible to require industry bodies and developers to change game classifications within 10 days of becoming aware of the existence of a secondary market for in-game items. Additionally, industry and stakeholder feedback will be necessary to determine whether a multi-jurisdictional take-up of the classification framework is likely.

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