Digital Cardboard Crack: The Gamblification of Digital Card Games

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Keywords

Gamblification, Loot Boxes, Digital Card Games, Esports

EXTENDED ABSTRACT

Since the late 2000s, the term 'gamblification' originally emerged to describe the gambling industry's colonisation of sport and sporting culture. Over time, the term has been used to refer to the blurring of gaming and gambling, particular monetisation strategies, and effects designed to steer consumer behaviour (Macey and Hamari 2022). Recent studies in esports and gambling have highlighted the concerns of 'gamblified' monetisation methods of streaming platforms (Abarbanel and Johnson 2020), esports betting, skin betting, and lootboxes, all of which involve purchasing unpredictable in-game virtual items using real-world money (Brock and Johnson 2021). This paper considers a critical analysis of the ideological work performed by such discourses and reveals the tensions underpinning current debates on gamblification and consumer protection in the United Kingdom. Particular attention is given to how probabilistic reward mechanics are normalised, how uncertainty is framed, and how responsibility is discursively shifted between industry, players and regulators.

According to GOV.UK (2022), the definition of loot boxes states:

> *Loot boxes are features in video games which may be accessed through gameplay, or purchased with in-game items, virtual currencies, or directly with real-world money. They contain randomised items, so players do not know what they will get before opening them, but they will get something. The items are usually either cosmetic i.e. items of clothing for avatars etc, or power-ups to improve the playing experience. Loot boxes vary in the way they are*

Proceedings of DiGRA 2026

> *accessed, their cost, how the random reward is selected and in the content they return. They are a form of microtransaction where they are available as an in-game purchase. However, loot boxes are only one part of the in-game purchase market. Their unique element is the chance mechanism. For other forms of in-game purchase, players will know what item they will receive in advance of purchase.*

Given the rapid pace at which new monetisation techniques have been evolved. This paper decided to focus specifically on digital card games and the issues posed by digital card packs as a form of loot box that confers competitive advantage. Major titles in this genre include *Hearthstone* (Blizzard 2014), *Magic: The Gathering Arena* (Wizards of the Coast, 2019), *Pokémon TCG Live* (The Pokémon Company, 2023) and *Yu-Gi-Oh Master Duel* (Konami, 2022) – all with the inability to sell or trade individual cards within the game, besides selling the game account – also, the latter three all derived from established physical card games, with resell value of individual cards on online marketplaces for trading card games.

In physical card games, drop rates (or pull rates) are determined by the number of cards printed and packaged, with rarity assigned during manufacturing to ensure a controlled distribution across booster packs. These practices remain largely self-regulated, historically compared to "surprise mechanics" like Kinder Eggs rather than gambling, thereby avoiding strict government oversight (House of Commons 2019). In the UK, for example, the government decided against extending the Gambling Act 2005 to cover loot boxes, relying on industry self-regulation for better child protection; most recently in principles published by Ukie (2023). However, public concern and the ongoing threat of legislative intervention have placed regulators under pressure to reconsider this position.

Digital card games differ fundamentally, where they lack pre-assigned rarity and controlled distribution, making the term ‘loot box’ a more accurate descriptor. Probability-based mechanics vary widely, including published drop ratios (N:M, N is the relative number in M instances for *Magic*), a percentage drop rate (such as 0.05% chance of obtaining a 1-star rarity in *Pokémon*), percentage based on a sample of booster packs (such as 1 out of every 24 packs for a secret rare in *Yu-Gi-Oh!*) and ‘pity timers’ guaranteeing rare cards after a set number of packs (such as a legendary card in every 40 packs for *Hearthstone*). Digital card games also present a higher barrier of entry compared to other esports genres, yet research on the link between card pack spending and gambling remains limited (Xioa, et al. 2025).

Digital card games deliberately eliminate secondary markets or heavily rescripted them leading to limited player-to-player trading. This design choice concentrates economic value and acquisition pathways exclusively through publisher-controlled randomised pack openings. As a result, digital card packs represent a particularly potent form of gamblification: they combine chance-based rewards with direct competitive advantage while removing alternative routes of acquisition and value circulation that existed in physical TCGs. This shift significantly reduces player agency and intensifies the financial and psychological pressures on players.

The psychological effects of opening digital card packs suggest further parallels with gambling. This activity is hypothesised to modulate dopamine release – a neuroscience process central to reward prediction, reinforcement learning and motivated behaviour, rather than simply producing pleasure (Linnet et al. 2011). Thus,

each card reveal forms a moment of comparison between expected and actual outcomes; a rare or highly valued card produces a positive prediction error and a corresponding burst of dopaminergic activity, whereas common or low value cards can produce a neutral or in many cases negative prediction error (Spencer et al. 2022). Game designers amplify this process with slowed animations, south effects, and colour-coded flows, prolonging uncertainty and creating micro-rewards (Clark, 2010). Consequently, repeated engagement can shift behaviour from deliberative to habitual, reinforced by cognitive biases such as near-misses and the gambler's fallacy, ultimately creating a robust, cue-driven, dopamine-mediated habit loop (Clark et al. 2013; Sammartin et al. 2024). These mechanisms illustrate how digital card packs leverage psychological reward systems, shaping the gamblified aspects of gameplay.

METHODS

This paper adopts a critical discourse analysis methodology to examine how digital card games are framed within UK government, industry and academic texts. Drawing on Fairclough's (1995) three-dimensional model, this paper analyses text, discursive practise and social practices that shape and reshaped these discourses. Primary materials include official government reports, industry self-regularity guidelines, and relevant scholarly literature on esports, gambling and digital monetisation. Together, these sources enable an examination of how institutional discourse legitimise, problematise, or normalise digital card games in contemporary UK contexts.

The study aims to examining a purposive sample of key documents published between 2018 and 2026. These include official government and parliamentary reports, Ukie and industry self-regulatory guidelines and publisher communications, and relevant policy statements. This corpus enables a detailed examination of how institutional discourse legitimise, problematise and normalise digital card packs in contemporary contexts.

CONTRIBUTION TO RESEARCH

This paper contributes to the study of gamblification by addressing the gap of digital card packs as a distinct and understudied form of loot box, examining how chance-based mechanics function differently in digital card games compared to physical counterparts. By integrating perspectives from games studies and gambling research, the analysis strengthens theoretical understandings of player behaviour and highlights how probabilistic reward systems, combined and psychologically potent design features, can encourage habitual engagement (Denoo et al. 2023). These dynamics raise important ethical concerns regarding consumer protection, particularly given the accessibility of such games to younger audiences, and underscore the need for greater regulatory oversight, transparency, and responsible design (Xiao et al. 2025; Johnson and Brock 2019). In doing so, this paper also contributes to broader debates on digital monetisation ethics and safeguarding of vulnerable players within contemporary gaming contexts (Grosemans et al. 2023).

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