Netflix's 'Gambling, Explained' and the evolving public perception of gambling

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"The gambling industry is built on losers"

Netflix's *Gambling, Explained*

Gambling, Explained is the fourth installment in Netflix's limited docuseries *Money, Explained*, which features other episodes on credit cards, retirement, and student loans. Gambling is often sensationalized in Hollywood films (e.g., *Casino Royale*, *The Hangover*, *Ocean's Eleven*), but the portrayal of gambling within popular culture, including film, TV and music, provides a barometer of how well public perceptions of gambling align with current academic discussions of gambling and its associated harms. Our lab at the University of British Columbia recently got together (online) to watch and critique *Gambling, Explained*. Our positions inside of academia offer a perspective on the episode, and this blog outlines some of what we found interesting. Overall, *Gambling, Explained* packs a vast amount of content into a succinct 22 minutes, and our lab consensus was that Netflix did a commendable job accurately representing the facts and current research around gambling.

The episode opens with one of the enduring paradoxes of gambling behaviour: the contrast of society's preoccupation with winners, against the mathematical reality of long-term losses. This segues swiftly to an explanation of Social Casino Games, which are digital games that structurally resemble casino gambling products, but where individuals do not have the opportunity to bet or win real money, although they can make in-game purchases. There have been concerns for several years that Social Casino Games may serve as a gateway to real-money gambling, with some evidence for 'migration' over a six-month follow-up (Kim et al., 2014). The description of Social Casino Games in *Gambling, Explained* is adequate but brief, and it could have dug deeper on the psychological significance of why people engage with such products even when money is (largely) removed from their operation. Links could have been made to other contemporary angles on the "gamblification" of video games such as the debate around video game loot boxes (Larche & Dixon, 2021).

For a Netflix series with such high visibility, the inclusion of testimonials from individuals with lived experience of gambling harm is a major strength, highlighting the consequences and social impact of problem gambling. One person featured sought treatment for their gambling problem because their habit "hurt everyone [they] knew". Another admits to falling prey to erroneous beliefs about luck, chance, and control, that pervade the gambling experience (e.g., the gambler's fallacy, the illusion of control), which are portrayed in the show using some powerful animations. This person asserts that the "availability of gambling is terrible", and that with newer online gambling opportunities, people will be able to gamble with newfound ease. Now in recovery, they describe how gambling almost cost them everything: "I lost my house, I lost my car, I lost my belongings, my kids' belongings, my husband's belongings".

One topic that piqued our interest in relation to some of our own research was Natasha Dow Schüll's explanation of "The Zone". Schüll's book "Addiction by Design" has inspired much recent research on slot machine gambling, and in *Gambling, Explained*, she is an engaging

interviewee. “The zone is not where you are even worried about winning or being in control. You really just want to keep going”. While intriguing, this statement may not be entirely correct from a psychological standpoint. In a recent paper from our own lab, Murch et al. (2020) investigated whether slot machine gamblers were “zoned out”, like Schüll suggests, or “zoned in” – a cognitive state of intense focus and high attention to performance. Using eye-tracking during the use of an authentic slot machine housed in the lab, this study found that recreational gamblers who were more immersed made *more* eye movements (‘saccades’) overall and paid greater attention to ‘performance’ information in the game (i.e., their remaining credit). It’s not clear if these results would necessarily apply to higher-risk levels of problem gambling (PGSI 8+) who were excluded from the study for ethical reasons, but our data favour this ‘zoned in’ account of immersion as a state of attentional hyper-focus (Murch & Clark, 2021).

Gambling, Explained interviews Mike Robinson, a behavioural neuroscientist, who introduces dopamine’s relationship to gambling - “It’s all about the pause … We start getting a flutter of dopamine in anticipation of the possible reward”. This prompts the documentary to delve into the famous neuroscience experiments by Schultz et al. (1997), which were one of the building blocks of the modern field of decision neuroscience, and helped to clarify the relationships between dopamine cell firing, reward, and expectancy. According to this study, over the course of learning, the dopamine signal from cells in the Ventral Tegmental Area tracks back from ‘unconditioned stimuli’ (a pleasant fruit juice) to conditioned stimuli that predict reward, but are not inherently rewarding in themselves (such as the spinning reels of the slot machine). After learning, these neurons only fire to the conditioned stimuli, not the reward. We felt that the account in *Gambling, Explained* did not handle some of the nuances to these data in perfect terms. The episode describes dopamine activity as “a reaction associated with pleasure in humans”, whereas Schultz’s data and the reinforcement learning account specifically highlights how dopamine activity is driven by prediction rather than pleasure. Dopamine is *not* the ‘pleasure chemical’ and the dopamine system represents how to ‘get to’ rewards in the world (Chen, 2018). Despite this oversight, the graphical depiction of the Schultz experiment is accurate and concise.

For such a mainstream series, perhaps the most surprising topic to be featured in *Gambling, Explained* is that of industry funding of gambling research and the associated debate around conflicts of interest. Schüll explains “industry capture” as a process by which specialized gambling research bodies distribute funds derived from gambling revenue, a system that may be prone to subtle biases towards certain lines of enquiry, such as understanding individual risk factors for gambling problems, while failing to support research on the harmful ingredients of the gambling products created by the industry. The ICRG (International Center for Responsible Gaming, in the US), RGF (Responsible Gambling Fund, in the UK), and NAGS (National Association for Gambling Studies, in Australia) are named as examples of such funding structures. Again here, the brief coverage in *Gambling, Explained* perhaps inevitably overlooks some of the nuances to this debate. A recent editorial (*Nature*, 2018) also acknowledged that “it isn’t appropriate for research related to a major social and public-health problem to be so heavily dependent on the very industry that enables it” but highlights how gambling research is a small

and underfunded field. Gambling currently falls between the cracks in many federal systems for research funding, such as the US NIH (National Institute of Health).

Another recent article describes how the consequences of industry-funding can be to make the evidence base "narrow in scope, often methodologically weak, and [focus] on problematising individuals while deflecting attention from harmful products…" (van Schalkwyk et al., 2021). To overcome a dichotomous view of gambling -- that it is either safe or pathological -- van Schalkwyk et al. (2021) suggest governing bodies take a public health approach to gambling regulation, an important contemporary development that *Gambling, Explained* fails to mention. The public health approach recognizes that gambling harms come about from the combination of several factors (e.g., product features and environmental access) besides individual risk, as well as the concept and distribution of 'harms' as distinct from clinical symptoms.

Gambling, Explained briefly introduces another hot topic in the form of financial speculation. Former MIT Blackjack Team member Semyon Dukach, part of the team the movie *21* was loosely based on, asserts that "day trading isn't investing, day trading is actually gambling". Day trading has become more popular during the pandemic, driven in large part by the accessibility of apps such as Robinhood and WealthSimple which offer commission-free trading and fractional shares (Nova, 2020). One of the authors was exposed to the Robinhood craze when their co-worker casually mentioned losing $3,000 on Robinhood. They had been swept up by the recent GameStop frenzy and held onto their stock for too long, with the price eventually dropping substantially. Indeed, most individuals who invested in GameStop actually ended up losing money (Brown, 2021).

The ambiguous nature of gambling is a running theme in *Gambling, Explained*, and Dukach discusses the time he spent at MIT playing blackjack, a game that can involve considerable skill. Certainly, blackjack benefits from knowledge of the optimal betting strategies across different hand values, but Dukach focuses instead on card counting as "keeping track of the cards that come out of the deck, because that affects the probability of the cards remaining in the deck". We felt that this section was a little misleading. Since the notorious MIT incident, casinos have taken various steps that largely negate the effectiveness of card counting, such as the use of multi-deck shoes and automatic shufflers (Schwartz, 2018). These changes to the game have driven some blackjack players away and suggest that the MIT strategy is no longer viable.

In continuing with its examination of skill-based gambling, the psychologist and professional poker player Maria Konnikova, author of "The Biggest Bluff", is interviewed. Konnikova asserts "[she's] not a gambler, [she's] a poker player" - a common statement among poker players that is echoed in John Dahl's movie *Rounders* ("Why do you think the same five guys make it to the final table of the World Series of Poker every single year? What, are they the luckiest guys in Las Vegas?"). Both poker and blackjack are not *solely* games of skill, however. Pluribus, a computer program developed at Carnegie Mellon University, was able to win against skilled opponents - but not every time, which is a key distinction from chess-playing AIs. As with its explanation of cognitive distortions, the use of cartoon animations to convey the different levels

of chance and skill across blackjack, poker, chess, and financial investment is a particular strength of *Gambling, Explained*.

Illustrating its contemporaneousness, *Gambling, Explained* closes by briefly touching on the effects of the COVID-19 pandemic on the gambling industry. With people left bored, anxious, and socially isolated, trading on Robinhood as well as online gambling are asserted to have soared in the United States. Research looking at the effects of COVID on gambling has been a moving target throughout the pandemic, and multiple studies have described an overall reduction in gambling frequency and expenditure, albeit juxtaposed with an increase in problematic gambling in a vulnerable minority; including younger males in a review by Hodgins & Stevens (2021) and gamblers with higher PGSI scores at baseline and lower income in Xuereb et al. (2021). With the closure of land-based casinos during lockdown periods, there is some evidence of a migration to online gambling (Price, 2020; Xuereb et al., 2021), and during the first 6 weeks of emergency measures, individuals with depression and moderate and severe forms of anxiety were more likely to gamble online and be classified as high-risk (Price, 2020). Charting the longer-term impact of the pandemic on gambling behaviours and harm will remain a research priority for some years to come. Dukach's final line in the episode "humans gamble because life is a gamble – the future is always uncertain" has never seemed so true.

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