

The Design of Addiction: How Online Sports Gambling Platforms Shape Addictive Behavior

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

The rapid advancement of technology has fundamentally reshaped various aspects of human life, and the gambling industry is no exception. Once a pastime limited to casinos and physical sportsbooks, the industry has quickly transformed into operating in the palm of our hands, becoming more accessible to anyone and everyone. Anyone with a phone or computer can now place bets on their favorite teams, players, and events wherever they are with a simple tap or click. From the individuals who decide to gamble, to the companies who create these platforms, implementing new technologies to keep and gain potential gamblers on their platforms, the relationship between these parties seems to be beneficial. On one hand, individuals can enjoy the thrill of betting from the comfort of their own homes, driven by the excitement of potential monetary gain or the adrenaline rush from placing a risky bet. On the other hand, sports betting companies are constantly implementing technologies to develop more engaging, user-friendly platforms designed to attract and retain gamblers. However, while this relationship seems mutually beneficial, beneath the surface, this relationship raises questions on the long term impact on human behavior. Specifically, how do online sports gambling platforms affect gambling behavior and the potential for addiction?

One, if not the most important concern is the potential to develop a gambling addiction. Online sports gambling in the modern day is extremely impulse-based. Sports betting companies often encourage continued betting in ways that may contribute to compulsive behaviors among users. Over time, this behavior becomes reinforced through repeated engagement. If the user decides to place a bet after receiving a notification, or obtain a reward incentive, over time, these social features reinforce said compulsive behavior that could eventually lead to developing an addiction. Users who previously found themselves gambling from time to time now find

themselves gambling more and more frequently, potentially leading to destructive behavior. The “gamification” of sports betting has created a mask to hide the true nature of the possible real consequences someone would encounter if not taken seriously. Just like a video game, it immerses the user in an exciting, reward-driven experience that encourages and reinforces continuous participation. This immersive environment can blur the lines between entertainment and sports gambling, leading individuals to underestimate potential losses and fostering addictive behaviors.

Background & Significance

Sports betting has a long and storied history in the United States. Gambling, in general, has been present in the United States since the early 1600s when the first settlers arrived (Wolohon, 2014). Additionally, lotteries were used in early America to support the settlements and even used to fund the continental armies (Wolohan, 2014). While gambling has deep roots in American history, the activity of betting has been practiced all over the world, with different cultures developing their own traditions and regulations around wagering throughout history. The origins of sports betting can be traced all the way back to ancient Greece, where Ancient Greek artifacts reveal that wagering bets on the success or downfall of Olympic athletes was commonplace (Chappelet, 2015). Its transformation throughout time from physical places to online platforms, influenced by technological advancements, has significantly expanded its reach and influence.

The biggest turning point however for the growth of online sports betting in the United States came after the decision of the Supreme Court case of *Murphy vs. The NCAA* struck down the Professional and Amateur Sports Protection Act of 1992 (PASPA) and allowed the legalization of sports betting in all states (*Murphy v. NCAA*, 2018). With this ruling, many

companies were expanding into becoming full sportsbooks, capitalizing on the growing market as more and more states began to start their legalizations process. While the Supreme Court's decision began the statewide expansion of sports betting across the United States, the implementation of technology accelerated the growth of online sports betting worldwide, transforming how people can engage with sports betting.

Digital payment methods like e-wallets make deposit and withdrawal transactions quick and easy, rendering the betting process convenient and more accessible. Due to e-wallet transactions being typically instantaneous, this feature allows users to place bets without delays. This immediate access can encourage more frequent betting, potentially contributing to impulsive gambling behaviors. Additionally, some sports betting companies may offer incentives like bonuses or reduced fees if a user uses a specific e-wallet, encouraging continuous gambling. The nature of e-wallets desensitizes the user to the value of money. Swanton et al. 's (2023) analysis cites the psychological concept coined the “pain of paying” where consumers experience less of the aversive feelings of parting with their money when using cashless payments, resulting in a higher propensity to spend. It creates a detachment from tangible or physical money making the user believe that they have more than they should have. One consequence of this is perceiving these transactions as less significant due to the absence of seeing tangible cash leave a wallet or purse which could lead to more impulsive or riskier betting behaviors. In Swanton et al. (2023), a participant said “it doesn't feel like real money” and “you don't physically see [it] like an empty wallet” — a sentiment that highlights how digital platforms can psychologically distance users from the reality of their spending, reducing the perceived impact of financial loss.

The implementation of live betting or in-play betting is a feature that has changed the way gamblers can bet on sports. Live betting allows individuals to place bets in real-time as the game or event progresses. As an example, these actions can range from the next player to score a touchdown, or the next team score a goal. This feature significantly enhances the gambler's engagement with the game, not only making the user increasingly financially invested, but also emotionally invested, as they are not only worried about the outcome of the game, but what happens at every instance during the game. However, as this uptick in engagement leads to more bets placed and money for sports betting companies, the increased amount of time spent by the user due to this feature can negatively affect their relationship with gambling. Gainsbury et al. (2020) found that out of 501 Australian gamblers, thirty-four percent of bets were placed after an event had started. The study highlights the appeal of in-play betting, allowing gamblers to make multiple bets, which can lead to longer betting sessions. These longer betting sessions can lead to or encourage more compulsive behavior, as gamblers are looking for more ways to make money. Furthermore, in-play bettors had significantly higher Problem Gambling Severity Index (PGSI) scores than those who did not (Gainsbury et al., 2020).

As a result of legalization of sports betting in the United States with the aid of new technologies to keep existing users and draw in new gamblers, online sports betting has received rapid growth in popularity in the United States and will likely become a worldwide phenomenon. This surge can be seen in the amount of advertisements and partnerships these sportsbooks have with sports media. The aggressive advertising campaigns have essentially embedded gambling with sports, normalizing the action of gambling when watching sports. The fusion of sports betting with mainstream sports culture has reshaped how audiences engage with sports and forced the normalization of sports gambling to be as common as sport itself.

Methodology

To explore the intersection of the technological development used to enhance sports betting and the social implications of online sports betting platforms, it is important to examine how these systems are constructed and their impact on society. Using the STS framework, social construction of technology, or SCOT allows for a deeper understanding of how the technology behind these platforms is socially constructed to meet specific user demands and business objectives. SCOT emphasizes the idea that technology is not neutral, but shaped by the people who use it. It is shaped by the values, beliefs, and practices of the people who design, develop, and apply it. In the context of online sports gambling platforms, this framework can be used to explore how technological features are influenced by the needs and behaviors of both the gamblers and business operators. To further understand the social aspect, as opposed to the technical aspect of the relationship between sports betting companies and the gamblers, the STS framework of Actor-Network Theory or ANT can be used to analyze the relationships within the network of sports gambling. This includes highlighting the interactions between human and non-human actors of gamblers, platforms, algorithms, and societal norms. Using ANT enables the exploration of how these actors influence one another and how technology changes user behavior. This combined approach allows for a two-fold analysis in answering how online sports gambling platforms affect gambling behavior and the potential for addiction because it considers both the technical design and social impact of online sports gambling platforms, providing a holistic view of how these platforms influence gambling behavior and potentially foster addiction.

In order to answer the question of how online sports gambling platforms affect gambling behavior and the potential for addiction, a variety of studies are used to analyze gambler

interactions, platform design features, and the psychological factors that contribute to addictive behaviors. The SCOT framework highlights how social groups and cultural practices influence the development of technology and several sources illustrate this dynamic of how online sports gambling platforms have been shaped by user demands and societal norms. Newall et. al (2019) found that advertising is skewed toward complex events with high profit margins which consumers do not evaluate rationally, proving the intent to promote profit over the health of the user. Similarly, Lawn et al. (2020) found that the “digital convergence” has created opportunities for the gambling industry to expand its customer base, particularly among young people, where a survey suggests a link between problem gambling in young male Internet sports bettors and positive attitudes to gambling sponsors. The growth and development of technology has made gambling more accessible, especially to younger demographics. By using social media, gambling platforms are knowingly trying to increase their audience by targeting a young and impressionable demographic through aggressive advertisements. However, there are safeguards that can be implemented to prevent or mitigate possible damage due to gambling. Hou et. al (2019) found that every additional 100 days after the first exposure to disruptive features will decrease the repetitive online gambling use by .010, or 5.6% from the base level. These disruptive features, contextual reminders, physical access changes, and modified routines, significantly reduced the repetitive online gambling behavior ... even after controlling for the self-selection bias (Hou et al., 2019). These two approaches show how technology can be shaped and constructed to facilitate or mitigate harm.

To understand the complexities of online sports gambling platforms, ANT provides another lens, contrary to SCOT, to examine the interactions between human and non-human relationships. Killick and Griffiths (2020) found that live odds updates during sports events may

prompt bettors into placing impulse bets, believing it was easier to make money doing in-play bets, rather than betting before a game. This illustrates the control live-odds betting has on user behavior, making bets appear more enticing and encouraging impulsive decisions. Similarly, features such as “cash-out” could make gamblers more susceptible to experiencing cognitive biases, notably the illusion of control (Killick & Griffiths, 2020). It reshapes the gamblers' risk perception, creating a false sense of security where gamblers believe they can outsmart the system using well-timed cash-outs. However, the underlying event still remains uncertain. Both frameworks, SCOT and ANT, offer a comprehensive and nuanced approach to analyzing how online sports gambling platforms influence user behavior and contribute to gambling addiction. SCOT allows for an exploration of how these platforms have been socially constructed to meet specific user demands and business objectives, emphasizing that their design is not neutral but shaped by cultural and economic forces. ANT complements this by analyzing the interactions between human and non-human actors, revealing how various gambling features shape user behaviors.

Literature Review

The effect of online sports betting has been researched in various fields such as psychology, information technology, and public policy. The current literature review aggregates central findings concerning live-odds betting (in-play gambling), emerging technologies, IT strategies to subvert gambling practices, and sports betting's psychological and societal harms. Through examining these studies, the review portrays how advances in technology have maximized access to gambling, creating greater risks for addiction and harms associated with them.

Live-odds betting or in-play betting has become a prominent feature of online sports betting platforms. In fact, studies show that gambling advertisements influence consumers' behavior through promoting complicated and time-restricted bets difficult to evaluate rationally (Newall et al., 2019). These advertisements create a sense of urgency, forcing the user to act impulsively, thus encouraging compulsive gambling, particularly among vulnerable users. Additionally, a 2018 World Cup research study found that the majority of such advertisements for high-margin bets, such as correct-score or first-goalscorer bets, enhanced the house edge (Newall et al., 2019). Due to the constant advertisement and the perceived potential to make money on these bets, many gamblers are easily drawn to these types of bets. These bets are much riskier and harder to predict with the odds skewed in favor of the house, meaning it's unlikely that any money would be made by the bettor as the house typically increases its own profits. Ultimately, the promotion of in play high-risk, high-margin bets not only misleads consumers but also contributes to a gambling environment engineered for profit at the expense of the user's well-being and potential financial stability. Further research on in-play or live-odds betting indicates that its inherent structure encourages problematic gambling behavior (Killick & Griffiths, 2021). Through interviews, Killick and Griffiths (2021) found that dynamic odds, instant results, and cash-out options enhance the illusion of control among gamblers. The majority of participants described how the immediacy of making and adjusting bets produced an illusion of control, and therefore they found themselves gambling more frequently. This perceived sense of control led users to believe they could influence results through quick and strategic changes. Given the extremely unpredictable nature of sports, these perceptions are completely irrational. The randomness of real-time sporting events mean that even well-informed decisions offer no guarantee of betting success. In the end, this illusion aims to reinforce risky

betting behavior, as bettors become more confident in their ability to outsmart the system, leading to increased frequency and volume of bets.

With the growing popularity of sports gambling, unfortunately, the personal cost of gambling addiction has grown as well. Personal testimonies of individuals who have experienced financial ruin and mental health crises due to gambling emphasize the seriousness of the issue (Epstein, 2023). Epstein (2023) investigates how an individual's recreational use of sports betting apps such as FanDuel escalated into a compulsive betting disorder, causing significant debt and emotional damage. Initially, the user was hooked in with a promotional offer of up to \$1,000 dollars of "risk-free" bets (Epstein, 2023). This structure not only encourages continued gambling but also traps users in a cycle of chasing losses, where users often increase their bet amounts in an attempt to recover previous losses, only to lose even more. Epstein (2023) found that the individual's betting habits intensified rapidly, driven by the perceived convenience of promotional offers and the feedback loop of trying to recoup losses. Over time, what began as casual entertainment turned into a compulsive behavior with serious psychological and financial consequences. This case reflects a broader pattern in which aggressive marketing tactics and the design of betting platforms exploit behavioral vulnerabilities, under the mask of flashy incentives and features.

Other than the personal, human cost, the psychological cost of gambling addiction has also been researched. The cyclical nature of winning and losing can create intense emotional swings, reinforcing addictive behavior and eroding mental health over time.

Valenciano-Mendoza et al. (2023) found that sports betting is strongly correlated with gambling disorder (GD) and other psychological disorders like substance use disorders and higher impulsivity. These findings highlight how gambling problems often do not exist in isolation but

are mixed with a broader pattern of psychological vulnerability. Additionally, individuals engaging in OSB (online sports betting) gambling represent a particularly vulnerable group ... report greater psychological distress and have distinct personality profiles (i.e., higher impulsivity, reward dependence, and novelty seeking) (Valenciano-Mendoza et al., 2023). Similarly, Nelson et al. (2024) found that individuals who significantly increased their gambling frequency within the first eight months of engagement were at a higher risk of self-exclusion, a known predictor of severe gambling addiction. Taken together, the results highlight how mobile sports betting amplifies psychological risks, particularly among vulnerable populations.

Results

Online sports betting, driven by technological innovation and predatory promotions, are central to gambling addiction by creating a culture that encourages unhealthy habits. These technologies, like live-odds and micro-betting, are deliberately designed to promote impulsivity and trap users in a continuous cycle of betting. Addiction is not just the product of the individual, but is closely tied to the design methods of online gambling sportsbooks. These online sportsbooks employ new technology and behavioral psychology to exploit gamblers' vulnerabilities. Options such as time-limited flash odds, dynamic in-play bets, and microbetting encourage impulsive decisions without time to make a rational choice. This enables a continuous desire for more and creates a fear of missing out, pushing users into repeated use. Live-odds betting and microbetting are prominent functionalities that enable compulsive gambling behavior. As addressed earlier, live-odds promotion promotes complex and unprofitable bets by framing them as temporary opportunities to only make money, never to lose it (Newall et al., 2019). These functionalities entice the user's decision-making process through psychological pressure. In-play betting even further increases this by allowing users to repeatedly edit or add

bets based on shifting odds, which creates an illusion of control (Killick & Griffiths, 2021).

Microbetting is even riskier due to its very nature of betting on game specific events (e.g., who scores next), squeezing the gap between bets and returns. Garzola & Vaccarino (2023) found that the speed of such betting raises impulsivity and creates greater gambling harm, particularly for vulnerable groups such as college athletes and young men. Microbetting's high-speed nature and the addition of new technologies like live-odds betting, not only aggravates spontaneous action but also increases chances of addiction and harm among vulnerable groups.

The design of modern sports gambling platforms is not accidental, but rooted in principles intended to maximize user engagement and retention. These platforms use operant conditioning processes which is a psychological phenomenon where behavior is conditioned through rewards and punishments. Variable rewards, such as periodic wins or promises of bonuses, reinforce gambling behavior given to gamblers. James et al. (2017) found that mobile applications contribute to this through making gambling more pervasive, increasing frequency through convenience and intermittent reward. Such manipulations are engineered into gambling application design to reinforce repeated, impulsive use. On the other hand, technological ways to help mitigate and stop the negative consequences that come with problem betting have been researched as well. Attempts to break this cycle through technological interventions, such as self-exclusion software and usage reminders, however, have been met with mixed success (Hou et al., 2019). In the study, Hou et al. (2019) found that tools are useful for those who gamble recreationally, but they do not significantly reduce gambling activity in highly involved bettors. This finding highlights a critical gap in harm reduction strategies where individuals most vulnerable to gambling-related harm are often the least responsive to standard interventions. As a

result, it underscores the importance of creating safer gambling habits early, before harmful patterns become deeply ingrained.

While there is an aspect of individual responsibility, some of the blame still lies with the industry. Platforms are set up to maximize engagement and profit, with little to no regard for the potential psychological expense to the user. Recognizing this, online sportsbooks develop their platforms with little regard for the user's welfare. Many have found that there has been a lag or an unwillingness to regulate the industry after legalization. Laws and public health policies have not caught up with the pace of gambling tech development (Lawn et al., 2020). Companies exploit this gap by normalizing betting through sports commentary, celebrity endorsements, and gamified app experiences. The societal consequences of gambling addiction are made vivid through individual stories. Mentioned earlier, one user recounts losing control after casual use of the FanDuel app escalated into compulsive behavior which led to financial ruin, emotional isolation, and mental health issues (Epstein, 2023). Similarly, Nelson et al. (2024) found that users who increase betting in the early months are at higher risk of addiction and self-exclusion. Although this is only one account, these stories reinforce the idea that addiction is not simply a personal failing but a predictable outcome of systems designed for dependency. As more individuals fall into this cycle, the broader consequences become public health concerns.

Conclusion

Online sports gambling platforms leverage live-odds features, microbetting, and personalized advertisements to sustain a system of behavioral reinforcement that fuels addiction. Through psychological manipulation and deliberate design choices, these platforms maintain user engagement and create harmful traits. While users must bear some responsibility, the burden must also fall on the industry. To counteract this, regulatory bodies and developers of these

platforms must recognize the psychological cost of this technology and work toward solutions that prioritize reducing the harm done. For policymakers at the state or even national level, this could mean closing the gaps that allow platforms to exploit behavioral vulnerabilities and vulnerable populations. For the online sportsbook platforms, it involves a reflection and reevaluation of the design choices that do not consider user safety. At the academic level, continued research into technological influences on gambling behavior should persist to better understand the problem and come to a more direct conclusion to decide what should be tackled first to get the problem under control. The goal should not be to eliminate gambling entirely, but to create environments where users can engage in betting responsibly, with safeguards in place. Although it exploded in popularity because people genuinely enjoy it, there must be a balance to minimize the potential harm. This includes implementing meaningful interventions, limiting the aggressiveness of marketing campaigns, and offering user-controlled limits. By promoting informed decision-making and minimizing exploitative practices, the industry can achieve a balance that both respects the health of the user, provides entertainment, and profits both users and the online sportsbooks.

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