



Conceptual Framework of Harmful Gambling:

AN INTERNATIONAL COLLABORATION,
THIRD EDITION

GAMBLING TYPES FACTOR

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1 GAMBLING TYPES

Gambling comes in many different forms and types. Commercial gambling includes: lotteries, instant lotteries, number games (such as bingo and Keno), sports betting, horse betting, poker and other card games, casino table games (such as roulette and craps), bingo, and electronic gaming machines. All these forms of gambling, which further include many specific varieties, are available either in physical venues or via the Internet.¹

A distinction is sometimes made between games of chance and games of skill. The distinction is based on whether adopting and practicing, or varying strategies, will affect the outcome or profitability of the game. This distinction does not take away a substantial chance component to the skill-based forms of gambling.² Studies also refer to this distinction as *strategic* (games of skill) versus *non-strategic* (games of chance) forms of gambling (e.g., Grant et al.³). Research from Western countries suggests that men generally prefer the former while women tend to prefer the latter (e.g., Gausset and Jansbøl,⁴ Stark et al.,⁵ Svensson et al.⁶). Notably, many people participate in both types of games, which can lead to a third group of “mixed” gamblers (e.g., Myrseth⁷).

The various forms of commercial gambling have evolved through a supply-and-demand process: gambling providers develop new products using new technologies (structural characteristics) with the aim of making people want to spend money on gambling (motivational characteristics). This process

has resulted in some forms of gambling (e.g., EGMs) being more closely associated with harm than others⁸,⁹ (see Section 2.2 and 2.2.1 Gambling Exposure).

Specific forms of gambling differ with respect to *structural characteristics*.^{10, 11} Many structural characteristics have been identified, and can be organized into some basic categories such as: timing parameters (including event frequency); reward parameters (e.g., jackpot size, return to player); presence of sensory (audiovisual) features; near-miss characteristics; and opportunities for illusory skill or control.

Technological innovation has led to many traditional forms of gambling becoming automated. For example, electronic forms of roulette are common in several jurisdictions. Automation can change the structural characteristics of the game; sensory feedback can be added to gameplay or the speed of play in computerized games may become faster. These modifications may increase the risk of harmful use.^{12, 13}

Gambling forms—the commercial services or products offered on the leisure market—also differ with respect to consumer appeal, as each form fulfills different needs or provides different kinds of stimulation across individuals. People have different motivations for participating in gambling. *Motivation* here means “what animates us, what prompts our initiation, choice, and persistence in particular behaviours in particular environments”.^{14, p137} In this way, motivation refers to groups of psychological, environmental, and social factors.

The potential for harmful gambling arises from the interaction between the structural characteristics of gambling forms on the one hand, and players' motivations to participate in different types of games on the other (e.g., see Balodis, Thomas, and Moore,¹⁵ Clarke,¹⁶ Schüll,¹⁷ Husain et al.¹⁸). The strength of the evidence for the influence of structural characteristics on harmful gambling is mixed. There is good evidence from experimental research that major structural characteristics modify gambling behaviour (e.g., persistence, bet size). This research builds upon classic work from psychological learning theory. By contrast,

few studies have tested whether people with gambling problems are especially sensitive to these features, so the relevance to gambling harms is not clear.

With respect to motivational characteristics, there is evidence that most motivations of recreational gamblers may intensify or escalate to harmful levels of gambling.¹⁹ Surveys of the general population that included questions on why people gamble have revealed a range of motives (e.g., Wardle et al.²⁰). Some studies show how certain motives and personality characteristics relate to harmful involvement in specific forms of gambling.^{15, 21-23}

1.1 STRUCTURAL CHARACTERISTICS

Gambling games differ from one another along a number of psychological dimensions termed structural characteristics.^{10, 11} The better-studied characteristics have their origins in psychological learning theory and models of conditioning. In terms of *timing parameters*, one feature is the delay between the gamble and the outcome. In a lottery, there is a long delay (often days) between ticket purchase and outcome, and it is rarely possible to bet again immediately.²⁴ In other forms of gambling, including instant lotteries and EGMs, this delay may be a few seconds only, and a subsequent gamble can begin immediately.

In a study that equated other structural characteristics by using a simulated slot machine, people with gambling problems played a game with a two second spin delay for significantly more trials than a machine with a 10 second spin delay.²⁵ People with gambling problems reported less enjoyment and excitement at playing a slot machine where the game speed had been slowed down, and the sounds also removed.²⁶ A review of 11 studies²⁷ concluded that faster games were preferred and rated as more exciting. They were also especially attractive to people with gambling problems.

A number of parameters have been identified as shaping gambling behaviour. Increasing jackpot size (or prize level) increased excitement and physiological arousal during a horse-racing game.²⁸ In a study where EGM gamblers were observed in Australian gambling venues, EGM jackpot size predicted overall spending.²⁹ Beyond the maximum prize, EGMs can vary in the rate of reinforcement, and their overall profitability (referred to as *return to player* or *payback percentage*). EGM gamblers prefer machines that offer more frequent (but smaller) winning feedback (Parke and Griffiths,³⁰ Haw³¹) and can adjust their style of play to influence the reinforcement rate.³² Payback percentage also varies across EGMs within a venue and/or jurisdiction.^{33, 34} With extensive training, experienced EGM gamblers can distinguish between 'tight' (85% payback) and 'loose' EGMs (98% payback).³³ Finally, bonus features in EGMs, often in the form of "free spins," are an appealing feature.^{30, 35}

Sensory stimulation (in terms of both light and sound) is a crucial component of winning feedback. Removal of auditory feedback to wins can reduce psychophysiological responses,^{30, 35, 36} and has a stronger effect on game preferences among people with gambling

problems.²⁶ Within modern multiline slot machines, *losses disguised as wins* (LDWs) arise where a payout is awarded that does not cover the initial wager. These outcomes are accompanied by the sensory feedback of winning (see systematic review by Barton et al.³⁷). LDWs increase physiological arousal and distort a player's memory for the number of true wins in a session.³⁸ ³⁹ Regular EGM gamblers tend to prefer multiline machines over equivalent single-line games. Additionally, people with gambling problems describe multiline slot machines as being more immersive and requiring more skills than an equivalent single line game—seemingly because of the presence of LDWs.⁴⁰ In online casino games, LDWs increased the likelihood of gamblers continuing to bet, compared to 'full loss' outcomes.⁴¹

Within chance-based games, certain game features can promote an inappropriate belief that skill is involved (referred to as the *illusion of control*). Examples include: a choice of lottery numbers⁴²; an instrumental action in the form of a dice throw;⁴³ the use of stop buttons on gambling machines;⁴⁴ or the use of familiar

stimuli associated with sports or other skillful games.⁴⁵ Experiments where these features are manipulated by researchers show effects on gambling persistence⁴⁴ and risk-taking.^{43, 46} Early wins in a gambling session can also cause the illusion of control.^{45, 47} Problem gambling has been associated with higher scores on scales measuring the illusion of control,⁴⁸ and people with gambling problems have also shown overestimation of control in a laboratory task.⁴⁹

Near-miss events should also be considered. A near-miss is a losing result that closely resembles a winning result (for this reason it could be considered a *near-win*). Studies that have varied the frequencies of near-misses in slot machine games describe higher levels of persistence at a moderate rate of near-misses around 30%.^{50, 51} In laboratory studies, near-misses are rated as increasing motivation to continue playing,⁵² and generate psychophysiological arousal^{53, 54} (for a systematic review, see Barton et al.⁵⁵). By imaging brain responses to near-misses, some studies have reported heightened sensitivity to near-misses in problem gamblers.⁵⁶

1.2 MOTIVATIONAL CHARACTERISTICS

It is important to note that the reasons that people gamble vary from one type of game to another and there is also individual variation in the motivations of gamblers. Different types of games have evolved because they appeal to different motives for participating. In other words, they have specific motivational characteristics.

Although forms of gambling differ in many ways, they have one thing in common: the potential to win money. The desire to win money, therefore, may appear to be the most fundamental motivation of gamblers. Several studies indicate that this motive differs in importance among people who gamble recreationally versus people with gambling problems.⁵⁷⁻⁵⁹ Recreational gamblers

mainly seek experiences and other stimulation such as a chance to socialize or have an outing, whereas people with gambling problems place greater importance on and are more motivated by money. Many of those with gambling problems try to win back money that they have lost or have mistaken ideas that in the long run they will make money by gambling.

However, winning at gambling is an experience that goes beyond its pure monetary value.¹⁹ Culturally and symbolically, winning is associated with success and happiness. Biologically, winning, as well as the anticipation of winning, stimulates the brain's reward system. Concepts relating to how cultural and biological factors contribute to harmful gambling are discussed further in Sections 3.1 and 3.4

In some forms of gambling, such as lotteries, it is possible to win an enormous amount of money for a small stake, although the probability of doing so is miniscule. An important motivation for entering the lotteries is to fantasize about winning big and living a much better life. While lotteries in most parts of the world are a relatively harmless form of gambling, people who are not content with their lives or in a desperate economic situation may spend large sums of money on lotteries in the unrealistic hope of *winning big*.^{60, 61} On the other hand, some people may be driven by charitable motivations and participate in raffles and other types of charity-based gambling.

All forms of gambling can take place in a social context. For example, people buy lottery tickets together, play bingo with their friends, or spend an evening at the casino with their partner. Some forms of gambling *require* others to be present, such as live poker. Other forms are attractive because they gather large groups of people together in a physical venue, such as casinos, race tracks, and bingo halls.

The level of social interaction varies. It can range between gambling with close friends to gambling alone among strangers (e.g., Cotte and Latour,⁶² Guillén, Garvía, and Santana,⁶³ Krauss,⁶⁴). Sociologists have stressed the importance of gambling as a 'character contest', allowing people to show courage, "gameness", integrity, gallantry, and composure in front of others—at the gambling tables in casinos, or in other venues where behaviour and manners are easy to observe.⁶⁵

Consequently, many types of gambling may appeal to a social motive for participating, but evidence is mixed on how it relates to harmful gambling.⁶⁶ On the one hand, people who feel socially marginalized or have a need for social recognition may be attracted by the social contexts of gambling and, therefore, spend more money and time gambling. On the other

hand, gambling with or among other people may provide a form of social control.^{67, 68} In other words, excessive gambling may be prevented because the person wishes to avoid disapproval from others.

Demonstrating skill and competing with others are two closely related motivations for gambling that constitute the core of games like sports betting and poker. Some forms of gambling—for example, roulette and EGMs—are basically governed by chance, but players may still believe that skill is involved and that there are strategies that make it possible to earn money (see Section 2.3.1 Structural Characteristics). If such beliefs are put into practice, the player will certainly lose money and be at risk of gambling harmfully. In other forms of gambling—for example, horse and sports betting—there is, in theory, a possibility for a skilled player to make money, though few do so in practice.

Gambling may become harmful when players overestimate their skill relative to others; interpret winnings as a result of skill and losses as a result of bad luck; and continue gambling with the belief that they will become more skillful and eventually make money gambling.⁶⁹⁻⁷¹ Whenever gambling is believed to involve skill, it may also be attractive to people who like to compete with others, for example, at the poker table or by being more knowledgeable in betting than others. Consequently, people who like competing may run the risk, if they start to gamble, to gamble excessively.^{72, 73}

Because gambling can provide a thrill, *sensation seeking*—the desire to take risks in order to experience stimulation and excitement—may be another motive. The association between harmful gambling and such *enhancement motives* is well known (e.g., Balodis et al.,¹⁵ Bonnaire et al.,²¹ and Mishra, Lalumière, and Williams⁶⁷). High stakes casino gambling is an example of a type of gambling that has evolved in order to satisfy a need for thrill and excitement.

Gambling may also have a tranquilizing effect by providing a means of escape or distraction from troubles in the gambler's life, including anxiety, depression, or boredom.^{74,75} Specifically, gambling games may bring about a dissociative state of mind, also termed *immersion*,⁴⁰ the *machine zone*,¹⁷ or *dark flow*.⁷⁶ This state may be most common in continuous, repetitive forms of gambling, such as bingo and EGMs. Players who prefer these forms may be motivated to seek this state (e.g., Balodis et al.,¹⁵ Husain et al.,¹⁸ and Thomas et al.⁷⁷).

The mood altering effects of gambling—providing a thrill or an opportunity to escape and dissociate—are motivations for harmful participation that are explained by classic psychological theories of positive and negative reinforcement. These motivations are central components in several models of problem gambling (e.g., Blaszczynski and Nower,⁷⁸ and Stewart and Zack⁷⁹). From this perspective, the presence of harmful gambling with other psychological disorders is explained by the latter disorders being an underlying cause of excessive involvement in gambling.

Almost all researchers agree that some forms of gambling are more closely associated with harmful gambling than others. As already discussed, lotteries are generally

regarded to be relatively harmless, while EGMs are often closely associated with harmful gambling. Indications of the riskiness of various forms of gambling can be obtained from the analyses of data from prevalence studies;⁸⁰ from statistics about the games played by those who seek help for harmful gambling; from risk assessment instruments (Section 2.4.3); and, from the analysis of gambling companies' data on their customers' gambling behaviour.⁸¹ It is important to keep in mind that the riskiness of a particular form of gambling is relative and the amount of harm that it causes can vary depending on what other games are available in a gambling market at a given point in time.⁸⁰

Participating in many different forms of gambling is associated with a higher risk of problem gambling⁸ because it suggests a higher intensity of gambling, which is an intrinsic aspect of problem gambling. It may also be that participation in many forms of gambling increases the risk of starting to gamble harmfully, because the various forms all have their specific risk factors.

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