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n many areas of the world, gambling has become a popular activity. Almost all national surveys into gambling have concluded that most people have gambled at some point in their lives, but that most participants gamble infrequently. The introduction of national lotteries, the proliferation of slot machines, the expansion of casinos, and the introduction of new media in which to gamble—such as Internet, mobile phone, and interactive television gambling as well as gambling via social networking sites—has greatly increased the accessibility and popularity of gambling worldwide, and as a result, the number of people seeking assistance for gambling-related problems. Commissions and official government reviews in a number of countries including the United States, United Kingdom, Australia, and New Zealand have all concluded that increased gambling availability has led to an increase in problem gambling.

Estimates of the number of problem gamblers vary from country to country, but most countries that have carried out national prevalence surveys suggest around 0.5 to 2 percent of individuals have a gambling problem. These surveys also indicate that problem gambling is at least twice as common among males as it is among females, and that those with poor education are more likely to be problem gamblers. In May 2013, the new criteria for problem gambling (see sidebar on page 48) were published in the fifth edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-5), and for the very first time, problem gambling was included in the section "Substance-Related and Addiction Disorders" rather than in the section on impulse control disorders. Although most of us in the field had been conceptualizing extreme problem gambling as an addiction for many years, this was arguably the first time that an established medical body had described it as such. But what else is "new" in the gambling studies field? The remainder of this article

looks at some of the developing trends and issues.

Gambling Industry Innovation

Researchers and legislators alike appear to be constantly playing "catch-up" when it comes to continuing gambling industry innovation. Most of the rapidly shifting trends in gambling are due to technological innovation. Many of the trends outlined in this article may have direct or indirect implications for the gaming industry, particularly as some of these trends may be changing the risk factors associated with problem gambling that players in the future may face. The fundamental issues surrounding gaming operators' commitment to social responsibility practices remain the same, but with increased technological access, gaming operators may have to think about which groups of people are targeted in terms of minimizing harm. Work and leisure more generally have become increasingly technologized and remote for both adults and children. Activities that were once done in a dedicated external environment, such as an amusement arcade or cinema, can now be done in the home and/or workplace. This has led to "cocooning," where a majority of activities can be done without ever having to leave the home and/or the work desk. Paradoxically, this cultural shift in increased technology has also led to an increase in leisure on the move (e.g., mobile gaming) that again may have implications for the psychosocial impact of gambling.

Technology Convergence and Gambling

One very salient trend is that technology hardware is becoming increasingly convergent (e.g., internet access via smartphones and interactive television) and there is increasing multimedia integration such as gaming via social networking sites (King, Delfabbro, & Griffiths, 2014). As a consequence, people of all ages are spending more time interacting with technology in the form of internet use; playing videogames, watching interactive television, mobile phone use, social networking, listening to digital radio via MP3 players, etc. In addition to convergent hardware, there is also convergent content. This includes some forms of gambling including video games with gambling elements, online penny auctions that have gambling elements, and television programming with gambling-like elements (King, Delfabbro, & Griffiths, 2014).

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At present, there are thousands of online gambling sites worldwide that enable players to gamble in traditional games of chance like poker and blackjack, as well as place bets on the outcomes of sports, racing, and other events (Kuss & Griffiths, 2012). Recently, there have been debates as to whether some types of online games should be regarded as forms of gambling, in particular those games in which the player can win or lose points that can be transferred into real life currency. It is still unclear whether video gaming activities that blend skill and chance elements should be strictly classified as "gambling." Griffiths et al. (2014) reported that there are online video game tournaments in which players are being paid "per kill" in the game. The fact that users can make money by playing a video game has raised concerns that these games may be a contemporary form of gambling. Whilst these games are largely skill-based, there are some similarities between paid online video games and online poker sites. Here, players pay a monthly subscription fee to play the game online, and in return are able to win jackpots, prizes, and awards at random intervals, regardless of the player's skill level or preferred difficulty level of the game. Much of these new gambling-like activities remain little researched and blur the boundaries between gambling and gaming.

Gambling via Social Networking Sites

The launch of the first gambling for money game, Bingo Friendzy, on Facebook in August 2012, received worldwide media interest and most gaming operators are now watching closely to see whether the move from social gaming to social gambling will be profitable. Gambling-type games are popular on Facebook; the October 2013 monthly figures for the most popular games played on Facebook showed that Texas Hold 'Em Poker was one of the most popular games with twenty-four million players worldwide, down from thirtyfour million the year before (Griffiths, 2013a). Online gambling operators and software developers are positioning themselves for entry into the social gaming market, and vice-versa. Social networking games provide pleasure, accomplishment, and friendship. Even when games do not involve money (e.g., playing poker for points on Facebook), it introduces players, oftentimes youth, to the principles and excitement of gambling. One of the key psychological ingredients in both gambling on casino machines and social gaming is the use of operant conditioning and random reinforcement schedules.

Getting rewards every time someone gambles or plays a game leads to people becoming bored quickly. Therefore, small unpredictable rewards leads to highly engaged and repetitive behavior for those players. In a minority of cases, this may lead to addiction. Both gambling operators and social gaming developers use intermittent and unpredictable rewards to facilitate habitual behavior (i.e., get repeat custom). Social networking sites have the potential to normalise gambling behavior as part of the consumption patterns of a nongambling leisure activity. This may change social understandings of the role of gambling among young people. In these situations, there is no money changing hands, but it again raises questions about whether gambling with virtual money encourages positive attitudes towards gambling in people, and young people particularly. For instance, does

gambling with virtual money lead to an increased prevalence of actual gambling? Today's youth are more tech-savvy, have no technophobia, and very trusting of these new technologies. Facebook has changed the way people and possibly gamblers are playing games. Empirically, we know almost nothing about the psychosocial impact of gambling via social networking sites although research suggests the playing of free games among adolescents is one of the risk factors for both the uptake of real gambling and problem gambling (Griffiths et al., 2014).

The Rise of the "Screenager"

Young people's use of technology, the so called "screenagers" and "digital natives," has increased greatly over the last two decades and a significant proportion of daily time is spent in front of various screen interfaces, most notably videogames, mobile phones, and the Internet. These screenagers have never known a world without the internet, mobile phones, and interactive television, and are therefore very trusting of these new technologies. For many of these young people, their first gambling experiences may come not in a traditional offline environment, but via the Internet, mobile phone or interactive television (Griffiths et al., 2014). This is an issue for both offline operators-as they will need to think about displacement effects and whether they will lose custom through newer consumers preferring online gambling over traditional gambling-and online operators, who will need to make sure their games and products are not accessed by minors and/or that they are not directly advertising to minors.

Technology has also changed the way that society views social and asocial activities. Although many people's interactions with technology are asocial, such as a single person engaging in some kind of screen-based activity, many of the activities carried could arguably be described as social activities, like playing and chatting to others in an online video game or during online gambling on bingo or poker, chatting via Twitter or other social networking sites, etc. Not only do gamblers feel less embarrassed and guilty when they lose online, as they feel more disinhibited and anonymous because no one can actually see them, they may also be also be adopting another social persona (e.g., someone of a different age, gender or nationality), something that has shown to be a risk factor for problem gambling in online poker players (Griffiths, Parke, Wood, & Rigbye, 2010).

Feminization of Gambling

Another key demographic group playing a role in the way gambling is changing is that of women. Apart from gambling on bingo and lotteries, gambling has traditionally been a male domain. However, the newer, more technological forms of gambling are gender-neutral and what we seem to be witnessing more and more is the feminization of gambling. The most obvious example is online bingo, where online gaming companies around the world are now actively targeting females to get online, socialize, and gamble. Additionally, there are many operators around the world, including those in the lottery sector and television companies looking for other revenue streams, that are targeting women via their online instant game sites. Although males still heavily outnumber females in both online and offline gambling (Kuss & Griffiths, 2012), it is likely that the prevalence of female gambling participation—and as a consequence problem gambling-will increase over the next decade.

New Trends in Gambling

One of the key drivers behind the increased numbers of people gambling online and using social networking sites is the rise of mobile gambling and gaming. Compared to Internet gambling, mobile gambling is still a relatively untapped area, but the functional capabilities of mobile phones and other mobile devices are improving all the time (Griffiths, 2013b). There are now hundreds of gambling companies







that provide casino-style games to be downloaded onto the gambler's smartphone or mobile device. This will have implications for the psychosocial impact of gambling and will need monitoring. Like online gambling, mobile gaming has the capacity to completely change the way people think about gambling and betting. Mobile phones provide the convenience of making bets or gambling from wherever the person is, even if they are on the move. This will aid various sectors within the gaming industry-particularly sports betting and the "in-play" markets (see next section).

One of the most noticeable changes in gambling over the last two years or so has been the large increase of "in-play" sports betting (Griffiths, 2012a). Gamblers can now typically bet on over

sixty in-play markets while watching a sports event, such as a soccer match. For instance, during a soccer game, gamblers can bet on who is going to score the first goal, what the score will be after thirty minutes of play, how many yellow cards will be given during the game, and/or in what minute of the second half the first free kick will be awarded. A number of factors have helped facilitate the rise of in-play betting including the increasing use of mobile devices and a marked shift in gamblers wanting instant 24/7 gratification when they bet or gamble (Griffiths, 2012a). Live betting is going to become a critical activity in the success of the future online and mobile gambling markets.

The most salient implication of in-play sports betting is that it has taken what was traditionally a discontinuous form of gambling—where an individual makes one bet every Saturday on the result of the game—to one where an individual can gamble again, and again, and again. Gaming operators have quickly capitalized on the increasing amount of televised sports. In contemporary society, where there is a live sporting event, there will always be a betting consumer. In-play betting companies have both catered for the natural betting demand and introduced new gamblers in the process. If the reward for gambling only happens once or twice a week, it is completely impossible to develop problems and/or become addicted (Griffiths & Auer, 2013). In-play has changed that because there are soccer matches on almost every day of the week, resulting in a daily, over two-hour period of betting, seven days a week. Based on the relationship between event duration, event frequency, bet frequency, and payout interval, empirical research has consistently shown that games that offer a fast, arousing span of play, frequent wins, and the opportunity for rapid replay are those most frequently cited as being associated with problem gambling (Griffiths & Auer, 2013).

DSM-5 DIAGNOSTIC CRITERIA FOR GAMBLING DISORDER

(American Psychiatric Association, 2013)

A. Persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress, as indicated by the individual exhibiting four (or more) of the following in a twelve-month period:

- 1. Needs to gamble with increasing amounts of money in order to achieve the desired excitement
- 2. Is restless or irritable when attempting to cut down or stop gambling
- 3. Has made repeated unsuccessful efforts to control, cut back or stop gambling
- 4. Is often preoccupied with gambling (e.g., having persistent thoughts of reliving past gambling experiences, handicapping or planning the next venture, thinking of ways to get money with which to gamble)
- 5. Often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed)
- 6. After losing money gambling, often returns another day to get even ("chasing" one's losses)
- 7. Lies to conceal the extent of involvement with gambling
- 8. Has jeopardized or lost a significant relationship, job or educational or career opportunity because of gambling
- 9. Relies on others to provide money to relieve desperate financial situations caused by gambling
- **B.** The gambling behavior is not better explained by a manic episode.



The rise of online poker has been one of the success stories for the online gaming industry. This rise has also led to more research in this area including some that suggests a different way of viewing problem gambling. For instance, research has suggested that online poker may be producing a new type of problem gambler where the main negative consequence is loss of time rather than loss of money (McCormack & Griffiths, 2012). This research has identified a group of problem gamblers who, on the whole, win more money than they lose. However, they may be spending excessive amounts of time, such as twelve to fourteen hours a day, doing this. This could have implications for problem gambling criteria in the future (i.e., there may be more criteria relating to the consequences of time conflicts as opposed to financial consequences). Other new types of problem gamblers may be those who gamble via social networking sites and/or those who gamble via their mobile devices.

Behavioral Tracking Data and Social Responsibility Tools

New technologies in the form of behavioral tracking have helped online gambling companies keep track of player movement by noting what games the customer is playing, the time spent playing, the denomination of the gambles made, and the number of wins and losses, among other things. Although such technologies can potentially be used to exploit gamblers (e.g., targeting the heaviest spenders with direct marketing promotions to gamble even more), such technologies can also be used to help gamblers who may have difficulties stopping and/ or limiting their gambling behavior

(Griffiths & Whitty, 2010). Over the past few years, innovative social responsibility tools that track player behavior with the aim of preventing problem gambling have been developed. These new tools are providing insights about problematic gambling behavior that in turn may lead to new avenues for future research in the area. The companies who have developed these tools claim that they can detect problematic gambling behavior through analysis of behavioral tracking data (Delfabbro, King, & Griffiths, 2012).

If problem gambling can be detected online via observational tracking data, it suggests that there are identifiable behaviors associated with online problem gambling. Given that almost all of the current validated problem gambling screens diagnose problem gambling based on many of the consequences of problem gambling-for example, compromising job, education, hobbies and/or relationship because of gambling; committing criminal acts to fund gambling behavior; lying to family and friends about the extent of gambling, etc.-behavioral tracking data appears to suggest that problem gambling can be identified without the need to assess the negative psychosocial consequences of problem gambling (Griffiths & Whitty, 2010).

Online Help and Therapy

Finally, one very notable trend that is likely to become more important is the use of technology in the area of help, guidance, and treatment of problem gamblers. Socially responsible online gambling sites typically feature links to relevant gambling help and awareness sites (Griffiths, 2012b). Although there are some disadvantages to online therapy for problem gamblers-lack of nonverbal information for the therapist, the therapist not being totally certain of the client's identity, issues surrounding which jurisdiction the therapist is licensed to practice, technological failures, the client's severity of problem, client referral problems—there are many advantages for the problem gambler including convenience, cost-effectiveness, helping overcome social stigma, and helping overcome barriers that may prevent people from seeking face-toface help, such as feeling stigmatized, being disabled, being geographically isolated, and/or being in an institution (Griffiths, 2010). Additionally, many of the generic factors that make the internet attractive for gambling online are the very same factors that may attract those with gambling problems to seek help online: ease of accessibility. affordability, anonymity, convenience, and disinhibition, among other things. Additionally, the screenagers of today are the gamblers of tomorrow, and this is the first generation that have lived out their lives as much online as offline and are naturally trusting of the internet.

Conclusions

Obviously the salient trends highlighted in this brief article are somewhat subjective and based on my own expertise within the gambling studies field. However, these are all areas that gamblers and the gaming industry should have a natural interest in knowing more about-hopefully as a way of enhancing the customer experience and minimizing customer harm. The examples of convergent gaming in this article highlight that commercial operators always appear to exploit new market opportunities in emerging media and that they are often two steps ahead of legislation. All of the issues and trends reported here directly affect gambling practices and deserve further debate and empirical research. Future research can aid governments in devising relevant and pragmatic social policy responses to the problem of remote forms of gambling (e.g., internet gambling, mobile gambling, gambling via social networking sites, gambling via interactive television). These responses may involve various strategies, including monitoring gambling advertising on the Internet and examining how these messages may affect potential gamblers, developing a research agenda focused on online gambling, and supporting health authorities in their campaigns to reduce the adoption and maintenance of gambling behavior among individuals. Ultimately, legislators and policy makers are the ones who decide to what extent

gamblers should be protected from potentially harmful activities like interactive online gambling, and to impose measures that do not compromise the consensual experiences of those that want to gamble. G

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