

A TAXONOMY OF GAMBLING AND CASINO GAMES VIA SOCIAL MEDIA AND ONLINE TECHNOLOGIES

SALLY M. GAINSBURY, NERILEE HING, PAUL H.
DELFABBRO & DANIEL L. KING

Bibliographic citation

M. Gainsbury, S., Hing, N., Delfabbro, P. H., & King, D. L. (2014). *A taxonomy of gambling and casino games via social media and online technologies*. *International Gambling Studies*, 14(2), 196–213.

Link to Published Version: <https://doi.org/10.1080/14459795.2014.890634>

If you believe that this work infringes copyright, please provide details by email to acquire-staff@cqu.edu.au

aCQUIRe CQU repository

This is an open access article under [Creative Commons](#) license.

Downloaded on 12/09/2022

Please do not remove this page



A taxonomy of gambling and casino games via social media and online technologies

Sally M. Gainsbury, Nerilee Hing, Paul H. Delfabbro & Daniel L. King

To cite this article: Sally M. Gainsbury, Nerilee Hing, Paul H. Delfabbro & Daniel L. King (2014) A taxonomy of gambling and casino games via social media and online technologies, International Gambling Studies, 14:2, 196-213, DOI: [10.1080/14459795.2014.890634](https://doi.org/10.1080/14459795.2014.890634)

To link to this article: <https://doi.org/10.1080/14459795.2014.890634>



© 2014 The Author(s). Published by Taylor & Francis



Published online: 24 Feb 2014.



Submit your article to this journal [↗](#)



Article views: 12951



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 20 View citing articles [↗](#)

A taxonomy of gambling and casino games via social media and online technologies

Sally M. Gainsbury^{a*}, Nerilee Hing^a, Paul H. Delfabbro^b and Daniel L. King^b

^a*Centre for Gambling Education & Research, Southern Cross University, Lismore, Australia;*

^b*School of Psychology, University of Adelaide, Adelaide, Australia*

(Received 6 September 2013; accepted 30 January 2014)

The increased popularity of casino games on social media platforms has prompted international jurisdictions to consider the extent to which these games may be similar to Internet gambling activities and therefore subject to regulatory action. Gambling themes are popular in video and computer games, and simulated-gambling activities are commonly offered by gambling operators as a way of enticing users to gamble online with money. However, little research has evaluated the impact of the digital convergence of gambling and gaming. The lack of a clear definition of online gambling-themed activities to guide such research undertakings represents a significant hurdle to the fields of gambling and gaming. Based on a review of the extant literature, this article proposes a taxonomy to distinguish between many types of online activities with gambling-themed content. This taxonomy suggests that the principal features that differentiate online gambling games include the requirement for payment, the role of skill, the type of platform and the centrality of the gambling theme. The proposed hierarchical framework aims to promote clear and consistent discussion to guide ongoing investigation of new and emerging Internet gambling and gaming technologies.

Keywords: Internet gambling; online gaming; casino; social media; framework; definition

A taxonomy of gambling and casino games via social media and Internet technologies

Internet technology has changed the way in which consumers engage in many activities, including those with a long history of use such as gambling and gaming. This article aims to develop a taxonomy to classify online gambling-themed activities, including gambling and gaming, based on their structural characteristics. Internet gambling refers to gambling that takes place through the Internet using connected devices such as computers, smartphones, tablets, gaming consoles and interactive television (Gainsbury, Wood, Russell, Hing, & Blaszczynski, 2012). The terms ‘online’, ‘interactive’, ‘Internet’ and ‘remote’ gambling are often used interchangeably in relation to gambling across various jurisdictions. The Internet gambling market is expanding; worldwide, gross win from Internet gambling has risen annually by 14% during the last decade and the market is expected to generate €28.24 billion in gross win by 2015, with an annual growth of 9% (H2 Gambling Capital, 2013). The slowing growth of Internet gambling is one sign of increasing market maturity and may also reflect increased industry regulation aimed at providing consumers with safer products, although there are substantial differences in licensing requirements between jurisdictions (Gainsbury & Wood, 2011). Many

*Corresponding author. Email: sally.gainsbury@scu.edu.au

international jurisdictions restrict Internet gambling as well as its advertising. However, increased popularity of social media has led to new ways to reach consumers, which gambling operators are increasingly exploiting.

The term 'social media' refers to Internet sites and platforms (including mobile applications) on which the sole or dominant purpose is to facilitate social interactions between individual users to exchange information, communicate and/or undertake collaborative activities. Interactions typically revolve around a focal point such as a personal profile, discussion board, photo or video sharing, product reviews, blog post or geographical location. Users may include individuals or groups (and companies) who are both consumers and publishers of content. Popular social media channels include social networks, blogs, microblogs, message boards, forums, video and picture sharing, social bookmarking, podcasts and videocasts, wikis, groups and virtual worlds (ZigZag Media, cited by Church-Sanders, 2011). In addition to providing new ways for people to connect with others by sharing personal content, some social media platforms, including social networking sites such as Facebook and virtual worlds, also provide socially oriented games as well as a way for gamers to communicate with one another.

One of the most popular and profitable genres of social games are those which replicate gambling activities but are free to play. The sudden and continuing growth in this market has prompted increased research and policy attention to developing legal and other conceptual definitions of these activities, and debate over the need to regulate social games given their many similarities to Internet gambling. Policymakers from several jurisdictions, including Australia, the UK, Belgium and Spain, have expressed concerns about the potential impact of online games which resemble gambling. However, the lack of research on the impact of these games makes regulation difficult to justify. Further, in response to a proposed ban on gambling-themed games in Australia, the Federal Government department which regulates Internet gambling stated that it was difficult to restrict the games, given the absence of clear definitions (Department of Broadband, Communications and the Digital Economy, 2013). To be useful to regulators, any such definition would need to distinguish similarities and differences between gambling-themed social games and Internet gambling based on the inherent characteristics of each.

Although there is arguably a wide variety of games with potentially problematic and harmful mechanics, such as games that encourage expenditure but are not transparent on pricing, this article specifically focuses on gambling-themed games. Its purpose is to promote improved understanding of the distinguishing features of Internet gambling and Internet gambling-themed games to inform regulatory definitions, conceptual developments and research into the impacts of these different activities. Little academic literature has examined social gambling-themed games, so this article is based on a comprehensive review of grey literature, as well as consideration of relevant gambling and social gaming literature. It commences with a discussion of the rationale and need for a taxonomy of online games, followed by a more detailed discussion of the proposed structural components to be used within the taxonomy. Relevant issues are then discussed that are likely to impact regulatory policies, followed by the limitations of the proposed taxonomy, and conclusions and implications for the field.

Basis for a taxonomy framework of online games

Many online gambling and gaming activities may appear similar at face value, given the considerable overlap between them, but from a regulatory perspective it is critical to

identify activities that appear to constitute gambling activities. Even when some differentiation is made, consumers may continue to have difficulties distinguishing gaming from gambling, particularly when these activities are offered online by the same operator (Albarran Torres & Goggin, 2014). One of the current limitations in the field is a lack of consistent terminology used by researchers, policymakers and regulators, the gambling and gaming industries, treatment providers and consumers (Griffiths, 2011; Owens, 2010; Parke, Wardle, Rigbye, & Parke, 2013). This lack of consistency may limit the ability of stakeholders to engage in a constructive and coherent discussion of this topic. The research literatures on gambling and gaming have historically been separate; however, many jurisdictions now use the term ‘gaming’ to refer to the act of gambling, which often creates confusion between these fields (Humphreys & Latour, 2013). As there is also no single accepted definition of what constitutes a social game (Chang, 2010; Griffiths, 2011; Huang, 2012; Schneider, 2012; Yakuel, 2013) it is difficult to advance a body of research that appropriately furthers the theoretical understanding and investigates the impact of these games.

A taxonomy framework is needed which employs consistent terms of reference and incorporates fundamental game elements to advance a method of classifying games. Such a taxonomy should be specific enough that it can differentiate between activities, yet sufficiently expansive to allow its adaptation to the continued evolution of online games (Downey, 2012). By creating a taxonomy, researchers, policymakers, practitioners and

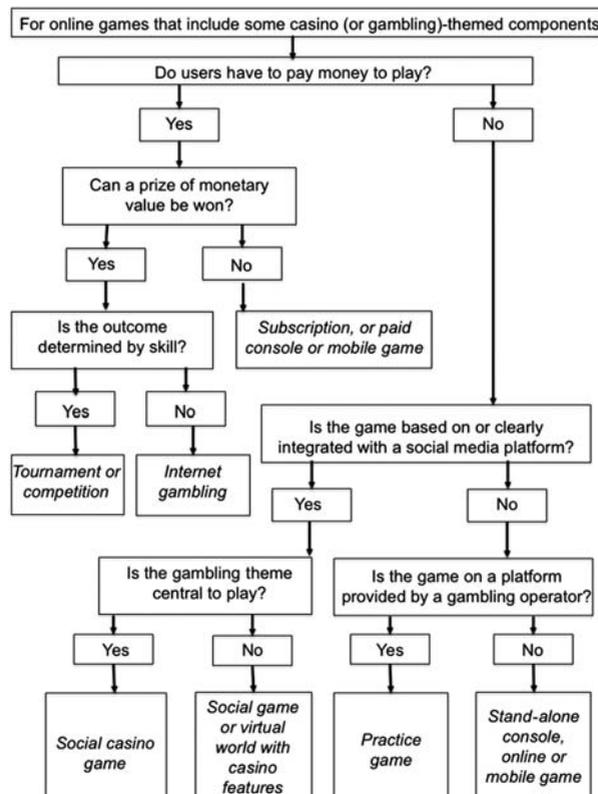


Figure 1. Taxonomy of online gambling-themed activities.

industry groups as well as game players can have an improved knowledge of the scope of the field, share a common approach to categorizing and comparing games, and identify potential gaps in knowledge and technology needing development (Downey, 2012). Taxonomies and frameworks of structural characteristics of gambling (Parke & Griffiths, 2007) and video gaming (King, Delfabbro, & Griffiths, 2010) have been proposed to help understand what elements of these games may lead to problematic play. However, there is no accepted taxonomy that combines these two activities, although some efforts have been made (King, Delfabbro, Kaptsis, & Zwaans, 2014; Parke et al., 2013).

Recently, Parke et al. (2013) proposed an initial classification of ‘social gambling’ as the basis of furthering the understanding of this growing field and identifying potential areas that may require regulatory consideration. Based on a review of the literature, several terms were proposed for various online activities, with the aim of contributing to the field and guiding ongoing research. This classification considered the platform of the game, the nature of social interaction possible and whether monetary rewards were provided. These features are intuitively appropriate, but the proposed framework is somewhat confusing, particularly as the term ‘gambling’ is used to refer to activities which are not generally accepted or classified as gambling. Accordingly, this article aims to expand upon the framework proposed by Parke et al. (2013) by incorporating recent findings and developments identified by a comprehensive review of the extant literature. The main structural characteristics proposed for use in the current framework in a hierarchical manner include (i) the requirement for monetary payment; (ii) the role of chance and skill; (iii) the game platform; and (iv) the centrality of the gambling theme to the game. Figure 1 presents a summary of these features. This taxonomy is proposed to be used with games that include some casino (or gambling)-themed components.

Proposed taxonomy

Required monetary payment

One of the most significant features in identifying gambling activities is that users must make a monetary wager in relation to in-game outcomes. If payment is optional and game play is allowed without any payment, the user is not considered to have given due consideration and the game is not classified as gambling by most definitions (Nettleton & Huang, 2013; Parke et al., 2013; Rose & Owens, 2009). A secondary consideration is the ability to receive a predetermined monetary (or equivalent) return (prize), and that the outcome must be at least partially determined by an unavoidable element of chance (Nettleton & Huang, 2013; Parke et al., 2013; Rose & Owens, 2009). If one or more of these elements is missing, then the activity is not considered gambling (Rose & Owens, 2009).

As the definition of gambling is centrally related to monetary expenditure, the terms ‘real-money’ and ‘financial’ gambling are confusing. Games which require payment but do not provide the opportunity to win a monetary prize include console or computer games, which must be purchased or require a subscription, as well as purchased mobile applications, which may allow payment to avoid advertising. Many video-gaming consoles (e.g. Xbox 360 and Playstation 3) and personal computers feature games which require monetary payment, can be played online (e.g. Massively Multiplayer Online Games or MMOs) and feature casino and gambling themes and activities (Griffiths, King, & Delfabbro, 2012; King, Delfabbro, Derevensky, & Griffiths, 2012). Nonetheless, if these games require payment to enable any level of play, this is an important distinction

from social casino games, given the role of consideration in making this purchase, which presumes some level of informed consent and knowledge of what is being purchased.

Role of chance and skill

As discussed above, Internet games that require monetary payment, that provide monetary prizes and where the outcomes are predominately determined by chance rather than the user's own skill are defined as Internet gambling (e.g. Internet casino games, card games, lotteries, slot machines, and sports and race wagering). Games which require monetary payment and provide prizes of real value but where the outcomes are determined by skill include tournaments and competitions. The exact extent to which the outcome of a gambling game is randomly determined by chance varies between activities and this classification is not always clearly defined. Some games include some elements of chance that impact games and game play; however, where chance plays a greater role in determining the outcome of each game than skill, betting on these activities is considered gambling. For example, although skill might predominate over chance in the game of poker in the long run, for each individual session or over a short period of time (months to a year), the outcome of poker is determined by chance (Grohman, 2006; Meyer, von Meduna, Brosowski, & Hayer, 2013).

The classification of games based on the role of skill has been upheld by law in most international jurisdictions (Kelly, Dhar, & Verbiest, 2007). For example, Virgin Gaming allows users to enter organized gaming tournaments, challenge other users to multiplayer games and place wagers on the outcome of their own video game challenges (Hsu, 2010). These activities are all considered to be based on skill, and hence are not classified as gambling. Virgin tracks the games to ensure there is no cheating and takes a small commission of the winning wager. A report in November 2012 claimed that US\$23 million had been spent by players via this service (Golding, 2012). The terms and conditions provided by Virgin Gaming state that players must be at least 18 years old and be a resident in a jurisdiction where skilled gaming is legal; however, age verification is not required to create an account, make deposits or place bets, although this is a requirement before withdrawal of funds. The requirement for age verification provides some indication that the activity is not suitable for children, but it is not a legal requirement, given the lack of a gambling classification. Fantasy sports and tipping competitions are also generally exempt from gambling regulation where the outcomes of these are considered to be based on a user's own skill (in using statistics to predict outcomes) rather than chance events (e.g. Unlawful Internet Gambling Enforcement Act, 2006; Victorian Commission for Gambling and Liquor Regulation, 2013). The monetary aspect of these activities is also considered in their classification such that all users pay the same entry fee and prizes are predetermined.

Internet gaming platform

Traditionally, games have been offered from platforms such as computers, consoles linked to televisions (e.g. Xbox) or portable devices (e.g. Nintendo DS). More recent technological advancements and the proliferation of wireless Internet-enabled devices has seen games launched on a variety of online platforms, including social media sites (e.g. *Facebook*), stand-alone websites and mobile applications. Many games are now offered through multiple platforms, and the extent to which games are based on or integrated within a social media platform is an important and defining structural characteristic.

Social media

To be considered a social media platform (or social network site), users must be able to create a profile within a bounded system and create unique content within that system, as well as interact with and view content created by other users, including those with whom they have specifically connected (Boyd & Ellison, 2007). One in four people worldwide are estimated to be active users on at least one of the hundreds of social media networks currently available, with the global audience expected to reach 2.6 billion by 2018 (eMarketer, 2013). *Facebook* is currently the most popular social networking site, with 1.11 billion monthly active users (O’Loughlin, 2013). Social media platforms are not static but constantly evolving, as the terms, conditions and features may be changed at any time by site operators for a variety of reasons, including responding to user feedback, incorporating new technological capacity or to generate commercial opportunities (e.g. embedded advertising).

Recent data suggest that social games have grown rapidly in popularity and attract an estimated 800 million monthly users worldwide (Morgan Stanley, 2012). Although there are hundreds of established social media sites, not all of these provide a platform for gaming activities. The definition of social gaming has been debated; however, it is commonly agreed that a defining feature of these games is that they are based on social media platforms (Jieun, Mira, & In Hyok, 2011). As reported by Parke et al. (2013), a social media platform enables users to share their achievements and progress, view other user’s achievements on leaderboards, invite other users to play with them or support their play, share virtual goods and credits between users, discuss the game through supported synchronous and/or asynchronous exchanges and compete with other users in challenges. Despite these opportunities, some social games can be played with no or very limited social interaction, depending on the user’s preferences and game settings. In this sense, many social media gaming activities may have only a superficial ‘social’ aspect, or social functions that do not factor significantly into the overall gaming experience.

Social game operators are increasingly using social network sites and applications as part of their marketing strategy to reach customers and attract new users (Morgan Stanley, 2012). However, social games may also operate outside popular social networking sites, including on separate websites or mobile applications which allow users to interact with a specific community of users within these platforms or an existing social media platform. Some social games employ a ‘hybrid’ approach – for example, by allowing play without permitting access to social media platforms, but limiting the game play and social functions possible (Parke et al., 2013). Social games tend to reward users for sharing the game and involving their connections with other users by rewarding such engagement with access to additional game feature or content bonuses to enhance user experiences. Most social games have accessible user interfaces that can be viewed on different devices such as personal computers, laptops, smartphones and tablets (Church-Sanders, 2011).

Social games are generally highly accessible and have a low difficulty curve (i.e. a high degree of ease in learning the basic game interface and mechanics) and have few (if any) requirements for registration, long-term commitment or special skill or knowledge. By design, social games allow casual play in which users engage for short periods of time, although games employ many incentives that encourage repeated and persistent play over time, such as time-delayed reward systems (i.e. in learning theory terms, schedules of fixed interval reinforcement in which rewards are only given following responses after a specific time period has elapsed). Game outcomes are not strategy-based or focused on an end goal, and many social games are turn-based with users either directly competing or collaborating with one another. Awareness of other users’ actions and progress within a

game is a core feature of most social games (Church-Sanders, 2011). The main reward elements of social games that sustain player engagement are indicators of advancement in the game (e.g. badges, player level, rewards, status and points), many of which are related directly to time invested in the game. However, in some games it is possible to accumulate virtual rewards by paying real money (usually termed ‘micro-transactions’), such as paying AU\$5 for 15,000 gold coins in *Slotomania*. The economic value of the social gaming market is estimated at US\$1.6 billion worldwide, with this value being largely attributable to such ‘microtransactions’ (i.e. small purchases for additional or bonus virtual content).

Platform provided by a gambling operator: practice sites and games

Not all casino games are based on or interact with social media platforms. Practice games simulate gambling products provided by a gambling operator to enable users to try gambling activities without investing any money. Practice or demonstration (‘demo’) games are often offered on the same site as the gambling products, or on a separate but closely linked site such as a .NET version of the same brand and domain name. Practice games are free to play and users are typically given a certain amount of free credits. Unlike social casino games, users generally cannot purchase additional credits, and interaction between users is not typically a central feature of game play. Practice game play typically requires users to create an account and register, but does not require identity or age verification.

Since users are not required to pay, even if prizes can be won, these games are not legally classified as gambling activities (Rose & Owens, 2009). Therefore, many practice games are not regulated and may not have identical or comparable structural characteristics (e.g. payout rates) to gambling products. For example, Sévigny, Cloutier, Pelletier, and Ladouceur (2005) identified that many casino sites offer very high and unrealistic payout rates (i.e. over 100%) during demo modes, which are not maintained on the gambling product. Their research also found that some sites focus on results of practice games and encourage users to transfer to gambling games with pop-ups and messages (‘Challenge your skills with real money’) during game play and with subsequent emails, and offer free credits for depositing and playing funds in a gambling account (Sévigny et al., 2005, p. 157).

Practice sites often escape regulatory scrutiny and may be offered in jurisdictions where Internet gambling is not legally permitted. As the Internet gambling industry has become more closely regulated, many jurisdictions may have requirements for practice sites offered by regulated gambling providers – for example, requiring that payout rates for practice games accurately represent real gambling products. Some jurisdictions – for example, Australia – have classified practice sites as comparable to Internet gambling, and promotions for these sites are classified as illegal advertisements for Internet gambling (Department of Broadband, Communications and the Digital Economy, 2013). Consequently, practice sites are required to adhere to advertising codes of conduct such as not depicting unrealistic expectations of winning, or appealing to children and vulnerable populations. Classification of practice sites as a promotion for a gambling product is generally based on shared or similar product name and branding (e.g. *PartyPoker.net* and *PartyPoker.com*) and clear links between the practice and gambling games or sites.

Online gambling-themed games that are not integrated into a social media platform and not provided by a gambling operator are classified as stand-alone games such as

mobile apps and console games. These games have been discussed in the academic literature previously due to their potential to normalize gambling for young people and enable children to engage in gambling-themed activities, which may lead to gambling later in life (King et al., 2012; Monaghan & Derevensky, 2008).

Centrality of gambling theme

Many social games include gambling-themed elements such as betting virtual currency on randomly determined outcomes seemingly based on spinning wheels and symbols or selecting one of several cards or items, or virtual contests. In many cases, these components are secondary to the central theme and objective of the game. It is proposed that social casino games be distinguished by the extent to which the gambling theme is central to the gaming experience.

Social casino games

As noted above, the term ‘gambling’ has legal implications and, therefore, should not be used to refer to games that do not meet the requirement of consideration, chance and prize. The use of terms such as ‘non-monetary gambling’ or ‘free-play gambling’ should also be avoided to prevent confusion. As the term ‘gambling’ has a specified meaning and ‘gambling-themed’ is cumbersome and open to misinterpretation, it is proposed that the term ‘social casino game’ be used to refer to games which are based on or interact with social networks and that simulate gambling activities. The term ‘casino’ is not meant to exclude the broader range of replicated games, including lotteries, bingo and betting (many of which are available in casinos). This term is also already actively used in the gambling and gaming fields. Consequentially, popular social casino games include poker, slots, roulette, blackjack, keno, bingo and sports betting. Social casino games are one of the most popular genres of social games, with participation in these games doubling between 2010 and 2012 (SuperData Research, 2012). Five of the top 23 games on *Facebook*, ranked based on user ratings, implementation, growth and quality in 2013, were casino games (Takahashi, 2013c). Social casino games are thought to account for almost one-quarter of total social gaming revenue and users have a higher probability of becoming paying customers with greater average user spending through microtransactions as compared to other genres of social games (SuperData Research, 2012).

These games do not require monetary payment to play. The outcomes of social casino games are not always based on predetermined odds or randomly determined by chance; instead, game mechanics respond to individual users and playing behaviour to increase player engagement and game satisfaction. As operators are not required to be transparent about how games work, it is difficult to clarify how outcomes are determined. Most social casino games do not return monetary prizes or anything equivalent; instead, wins are recognized as progress and achievements, usually through relative comparisons with other users (e.g. player leaderboards). Social casino games may be played without interacting with other users – for example, in slot games; however, features such as leaderboards and sharing achievements make otherwise solo games social. Little research has been conducted on motivations for social game play, and as there is no tangible prize it is possible that there may be some intrinsic motivations involved, although players may also be extrinsically motivated to collect in-game rewards. Initial studies suggest that social interaction is the primary reason for game play, and capacity for entertainment and fun as well as achievements, competition and collaboration all appear to maintain player

engagement in social games (Liu, Li, & Santhanam, 2013; Scharkow, Festl, Vogelgesang, & Quandt, 2012; Shaul, 2013; Shin & Shin, 2011).

A key feature of many social games is a form of virtual currency (Schneider, 2012; Yakuel, 2013). Virtual credits are not directly redeemable for cash and cannot be gifted to or exchanged with other users, and so are generally classified as having considerable contextual value but no inherent value (Owens, 2010). Users are typically provided with a small amount of virtual currency to start play, which once used is not replenished for a set period of time (e.g. overnight). Social casino games are typically offered through a 'freemium' model, where games are free to play but users are encouraged to purchase additional credits to enhance their game experience. Purchasing virtual currency allows users to gain credits without taking time to earn credits in the game, or to continue to play once their credits have run out without having to wait for more credits to be deposited. For example, *Slotomania* by Playtika/Caesars Interactive (which owns online and land-based gambling) encourages users to spend more coins per spin by offering extra experience points for higher wagers (Casual Games Association, 2012). *Bingo Blitz* by Buffalo Studios/Caesars Interactive allows users to purchase credits to buy in-game items like 'Power-Ups'. Users can also use credits to customize their game avatars and buy gifts for other users in their network. Other examples of popular social casino games include *Heart of Vegas* by Product Madness/Aristocrat (a gaming machine manufacturer), *Hit it Rich Casino Slots* by Zynga (which also operates highly popular *Texas Hold'em* poker as well as several online gambling sites) and *DoubleDown Casino* offered by DoubleDown Interactive/IGT (a gaming machine manufacturer).

Social games with casino-style elements

Many games based on social media platforms (i.e. social games) include casino/gambling-themed elements which are not the central focus of the game but, rather, optional in-game activities. Examples include Zynga's *CityVille* which allows users the option to play on a slot machine called *Jackpot City* with credits earned or purchased with real money to win virtual credits to be used for in-game purchases (Parke et al., 2013). The youth-appealing game *Pet Fish Society* by Playfish requires users to look after and interact with a virtual pet. In order to care for and buy gifts for their pet, users need coins, which can be obtained in various ways including 'the Daily Lottery', as well as racing their pets and betting on race outcomes. Social games which include optional casino themes are not considered social casino games, but they clearly have some overlap with this genre. When these activities are optional they are generally experienced in a relatively mechanical way, such that credits may be earned, but it is not a particularly fun or exciting game component.

Virtual worlds

Virtual worlds are a form of social media platform; however, as users tend to engage in lengthy sessions of play, these games differ from the casual play experiences found within social casino games. Nonetheless, some virtual worlds include optional casino themes and games, as well as player-to-player wagering systems (King et al., 2012). For example, in the MMO video game *Runescape*, users can purchase the opportunity to play 'Squeal of Fortune' (a lottery-style game where outcomes are determined by chance), in order to win prizes (virtual currency or items for use within the game). Similarly, in *Borderlands 2*, a first-person shooter MMO game, users are able to spend virtual currency on an in-game

slot machine. Notably, the MMO *Second Life* banned in-game wagering within its virtual casino in 2007 as it was perceived to be bypassing regulatory controls on gambling (Linden Lab, 2007). This may be related to the ability to buy, sell and trade Linden Dollars for real money, thus providing tangible monetary value to this virtual currency.

Blurring boundaries: convergence and cross-marketing

Recently, the classification of social casino games has become more difficult as gambling operators are increasingly offering these through affiliated companies and partnerships, and social casino game operators have begun offering gambling products. Referred to as ‘digital convergence’ (Griffiths, King, & Delfabbro, 2013; King et al., 2010), this phenomenon describes the overlap between gambling and gaming products, where activities such as digital gaming and gambling, previously encountered separately, have been made available through similar technology platforms. There are many examples of social casino games being offered by operators who also offer gambling products, including Internet gambling. Gambling operators may provide social casino games for several reasons, including (i) engagement with customers and potential customers; (ii) promotion of brands outside venues; (iii) to increase customer satisfaction; (iv) to create revenue from these games; (v) to position themselves in a market prior to legalization of Internet gambling; (vi) to obtain customer data, including game preferences and play patterns; and (vii) to try out new and innovative gaming formats (Billings, 2013; Shortt, 2012; Takahashi, 2013a, 2013b; Wheeler, 2012).

Examples include Playtika’s *Slotomania*, which was acquired by Caesars Interactive Entertainment in May 2011 and was the highest-grossing app on iPhone, iPad and Android in 2012 with over 10 million downloads (Casual Games Association, 2012). Similarly, gaming machine manufacturer IGT purchased the popular Facebook-based *DoubleDown Casino* in 2012, which was ranked as the third-highest-grossing app on Facebook, with 6.7 million monthly active users in the third quarter of 2013. The social casino game business is making substantial revenues, accounting for US\$61.4 million in this period, increasing 105% from the same period the previous year, with average user spend rising 60% to 40 cents (IGT, 2013). *DoubleDown Casino* includes IGT branded slot games in addition to other social casino games, and numerous land-based casinos host links to customized *DoubleDown Casino* sites to offer their customers a social casino experience. Where these games are based on and substantially interact with social media platforms, and as payments are not required, they are considered social casino games according to the proposed taxonomy.

The distinction between social casino games and practice games becomes more difficult as more social elements are incorporated into practice games, and when social casino games are branded to promote a gambling operator and award prizes or incentives for users to visit a gambling venue or site. For example, casino operator MGM Resorts International has launched a stand-alone social gaming website that offers social casino games, arcade games and allows users to construct casinos on a virtual Vegas strip (Takahashi, 2013b). All games are free to play, but users can win loyalty points and rewards that can be redeemed for real prizes such as complimentary hotel rooms, restaurant meals and show tickets. Although several gambling operators offer stand-alone social media sites or applications, such as discussion boards, online forums and chat rooms, this is one of the first examples of a gambling operator offering a stand-alone social casino gaming site (Billings, 2013). Similar classification uncertainties would arise if a practice site allowed users to purchase additional currency to play (which PokerStars made

possible for players using its *Facebook* app in 2013, including those in the US where online poker is not fully available).

As technologies continue to converge, distinction between games based on platforms is not always obvious. For example, video games have traditionally catered for individuals or multiple users based in the same location. However, gaming companies are now using increased capabilities for online play that enables many users to experience a game together, including through social media, to connect with and create a community of customers. For example, a partnership between large gaming and gambling companies, Electronic Arts and Caesars Entertainment, has launched a *World Series of Poker (WSOP)* social casino game on *Facebook*, which is in addition to existing WSOP computer and video games. This game now competes with other large gambling operators offering social casino-poker games, including PokerStars and 888, in addition to their gambling sites, which offer poker for registered users.

The hierarchical structure of the proposed taxonomy contends that requirement for payment is considered prior to the gaming platform to ensure that gambling activities are appropriately identified. Social interaction is generally not a required element of gambling or the core aspect of player engagement. Nevertheless, some Internet gambling activities may include interactions between players, either as part of the game (e.g. poker) or as an optional feature (e.g. chat boards in bingo games), and Internet gambling operators may encourage social interaction outside games on social media platforms. Several operators have recently launched gambling products on social media platforms, notably *Facebook*, which began permitting gambling in the UK in 2012. Leading social casino game operators have subsequently launched gambling versions of their games. These include Gamesys, which operates the social casino game *Jackpotjoy*, launching *Bingo Friendly* on *Facebook* in the UK in 2012, and Zynga, which launched gambling versions of its casino and poker games in partnership with the gambling operator bwin.party. Gambling operators have also launched gambling products on *Facebook* in the UK, including *Bingo Appy* owned by 888 Holdings Ltd (which also offers social casino games, including the highly popular *Bingo Island 2*) and *Paddy Power In-Play!*, *Facebook*'s first sports betting gambling product. As suited to the platform, these games all incorporate and encourage social interaction between gamblers.

Several third-party providers have been established which provide a platform for gaming operators to convert their games into gambling products and vice versa. These include Odobo, which in 2013 announced it would partner with large international bookmaker bet365 to provide social games for gambling operators. Conversely, *Betable* is a stand-alone proposition site that allows users to place wagers on various events including social games and allows customers to connect directly from their *Facebook* and *Twitter* accounts. *Betable* has partnered with a number of social casino game operators and uses its gambling licence and infrastructure to enable customers to gamble on social games (Takahashi, 2012). Interacting with friends, family and online connections is central to the entertainment value and success of these games; however, the core driver of involvement changes with the opportunity to win prizes (Owens, 2010). Although the provision of Internet gambling through social media sites is a newly developed phenomenon and creates some overlap with social casino games through the use of a common platform, it does not change the classification of these activities as gambling products. Nonetheless, similarities between a company's social casino games and gambling products, including common branding, themes, characters and displays, may create confusion for users who may not easily distinguish between these activities (Albarran Torres & Goggin, 2014; King et al., 2014).

Value of virtual currency

As the proposed taxonomy is based on the premise that gambling involves monetary expenditure and social games do not, the value of virtual currencies is an imperative consideration. Social casino games currently avoid being regulated as gambling activities because the virtual credits that are required to play and which are provided as prizes ostensibly have no real-world value outside the game and platform (Owens, 2010). However, this predication has several caveats. Many Internet-based markets, such as *eBay* and *IGE*, allow users to buy and sell virtual currency to be used within games, with reports of US\$880 million being traded on *IGE* in 2004, and the virtual goods industry valued at more than US\$3 billion in 2009 (Castronova et al., 2009; Lehdonvirta, 2005; Lipton & Tadman, 2012). It has been argued that this practice may be used to discern an 'exchange rate' between virtual currency and real currency that would put a monetary value on transactions denominated in virtual currency (Castronova, 2001). Research on virtual worlds has concluded that users treat virtual items and currencies in a very similar fashion to real-world goods and money (Castronova et al., 2009). It has also been suggested that regulatory bodies should consider codes of practice for use of virtual currencies, including consumer protection and taxation considerations (Papagiannidis, Bourlakis, & Li, 2008).

There are some examples of virtual currencies being considered to have monetary value. Use of Linden Dollars in gambling games within the virtual world *Second Life* resulted in the operators being investigated by the FBI for providing gambling to US residents illegally and these virtual casinos being shut down (Charif, 2011). Courts in the UK and the Netherlands have concluded that virtual chips and items have monetary value and that theft of these is considered a punishable offence (Morgan Stanley, 2012). In the UK case of a hacker stealing and selling over 400 billion virtual poker chips from Zynga's *Texas Hold'em* game on *eBay* for £50,000, Zynga purported that these chips were worth US\$12 million (Charif, 2011; Lipton & Tadman, 2012). Despite this difference in reported value for this virtual currency, it is clear that the black-market value of virtual chips is substantial. Most social casino game operators prohibit unauthorized resale of virtual currency. However, it is uncertain whether virtual currencies used in social casino games are being traded for real currencies. These developments raise interesting questions regarding the extent to which virtual currencies have monetary value, which would bring social casino games closer to the classification of gambling. Whether users play social casino games for the purpose of obtaining virtual currencies or whether the point of the game is entertainment and the value of the virtual currency is incidental are important questions which should be investigated using systematic research methods. However, it is likely that users have different motivations for playing the same game and from a legal standpoint the structural characteristics within the game and official game context are likely to be the most useful ways of classifying these activities.

Regulatory action

If adopted, the proposed taxonomy may enable consistent terminology being used by regulators and policymakers, the gambling and gaming industries, and researchers across international jurisdictions. The notion of whether social casino games should be regulated has been increasingly raised internationally. It has been argued that social games more generally should be subjected to regulation, particularly those that award prizes with value outside the game and game platform and that allow (and encourage) users to spend considerable amounts of money (Joint Select Committee on Gambling Reform, 2013). Regulators in Japan have already enacted laws banning 'kompu gacha' features, in which

users purchase entries to win a rare prize but the probabilities of winning are unknown (De Vere, 2012). The UK Office of Fair Trading (2013) has also warned gaming operators that they may be violating UK and European consumer protection laws by exploiting children's inexperience and credulity.

The chief concerns related to social casino games are that they may normalize and encourage gambling, particularly among young people and problem gamblers, and that they misrepresent the chance of winning on a gambling product (Department of Broadband, Communications and the Digital Economy, 2013; Parke et al., 2013). The UK Gambling Commission's report on social casino games highlighted that this area is under-researched and recommended that research is conducted in relation to social gaming, social casino games and gambling to determine whether further regulatory changes may be advised (Parke et al., 2013). At the end of 2012, the Belgium Gaming Commission put forward legislation defining social gaming as online games with the same characteristics as gambling products licensed in Belgium but that did not pay out winnings (Gambling Compliance, 2013). Under the proposed legislation, social gaming would be permitted to operate without a licence provided that monthly spending was limited to a maximum of €100 per month. In 2013, a bill was proposed in the Australian Senate that sought to regulate and restrict social casino games in a similar manner to online gambling activities (Joint Select Committee on Gambling Reform, 2013). One of the problems raised in relation to this bill was the difficulty of defining the target of the ban in a way that is sufficiently broad to cover a range of games and platforms and allows for future trends and developments, but that does not have the unintended consequence of restricting games not considered problematic (Joint Select Committee on Gambling Reform, 2013). No evidence of harm caused by social casino games was submitted to support the proposed bill. More recently, the South Australian premier proposed that games containing gambling themes would be classified as suitable for those aged over 15 years (Government of South Australia, 2013).

Most regulatory bodies have yet to legislate specifically around social casino games (Gambling Compliance, 2013). In response to calls for regulation of the social casino game industry, the International Social Games Association, an industry body representing the leading social casino game operators, has released a set of best-practice principles, which largely adhere to existing consumer protection and gambling advertising guidelines, although also specify that operators should not target users aged under 18 years of age (International Social Games Association, 2013).

Limitations and future research

The classification proposed is based on review and analysis of the limited published papers and industry reports. As the social gaming and social casino game industries are relatively new, there are few research papers to inform the taxonomy, and so a wider range of sources was consulted, including industry reports, which often include limited methodological details to enable results to be independently verified. As the field develops, it is hoped that methodologically robust studies will be conducted to provide a greater understanding of the use and impact of social casino games. This taxonomy is not intended to be definitive as the social casino gaming field will continue to evolve in response to technological advancements, user behaviours and preferences, and regulatory constraints.

Further research is needed to investigate the motivations and use of social casino games, the convergence of social gaming and gambling, and the impact of social casino

games, including whether they encourage users to partake in gambling activities or contribute to irrational beliefs and gambling-related problems. An alternative research question is whether simulated gambling activities may provide a safer (i.e. less financially burdensome) gambling-like experience for vulnerable individuals. Some of this research is already underway, including a study by the authors of this article, but the research is likely to be considerably slower than continued developments in the social gaming field. As noted by Parke et al. (2013) and Albarran Torres and Goggin (2014), the input and perspectives of users themselves have not been widely considered – that is, how do users conceptualize these activities and do they clearly distinguish between social casino games and gambling products? Similarly, King et al. (2014) have argued that qualitative investigations are needed to clarify what adolescents mean by terms such as gaming and gambling, and what distinctions, if any, they make between activities involving money versus virtual credits.

Conclusion

This article proposes a framework for promoting clear and consistent discussion and investigation of new and emerging online gambling and gaming technologies. According to the taxonomy, a social casino game is defined as a game that does not require payment to play, is based on or has a substantial interaction with a social media platform, and the central theme of which is a simulation of a gambling activity (e.g. poker, slots, roulette, bingo, keno, betting). Social games that are free to play and are based on a social media platform but only include optional casino-themed activities are not considered social casino games within this taxonomy, although they may include features of interest to regulators. Practice games are also free to play, but these are not based on social media sites and are typically provided by gambling operators on a site related to an Internet gambling site. Games which require monetary payment to play but do not provide monetary prizes include console games and paid mobile apps with gambling themes. Games which require payment to play and do award prizes but are not chance-based are classified as skill-based tournaments or competitions. In contrast, Internet gambling is classified as an online game in which payment is required, monetary prizes may be awarded and the outcome of the game is predominately determined by chance.

This taxonomy builds on work by Parke et al. (2013) and suggests that the structural features of payment, randomly determined outcomes, game platform and gambling centrality be used to differentiate between online games. The proposed terms and definitions are intended to contribute to and further the debate across the relevant fields and industries and between stakeholders. The proposed taxonomy is necessary because the popularity, diversity and application of online games have increased rapidly, resulting in existing classifications becoming increasingly less effective at distinguishing between types of online games (Downey, 2012). The fields of gambling and gaming are rapidly converging as gaming operators begin offering gambling products and as gambling operators use social games as stand-alone products as well as marketing opportunities. Discussion about social casino games between policymakers, regulators, professionals in the gambling and gaming industry and researchers is hindered by a lack of consistently used terminology and definitions. Policymakers are struggling to appropriately react and respond to changes with a potential mix of under- and over-regulation, which have significant implications for the gambling and gaming industry, with many companies heavily invested in social casino games. Researchers also must use consistent terminology to allow the field to advance towards a greater understanding of the similarities and

differences between gamblers and social casino game players. It is also critical to consider game users and the extent to which consumers can differentiate between social casino games and gambling products. It is hoped that the proposed taxonomy will provide the necessary foundation for future research programmes and regulatory responses.

Notes on contributors

Dr Sally Gainsbury is a clinical psychologist whose research into gambling has covered the areas of responsible gambling strategies, electronic gaming machines, warning signs, Internet gambling, and online treatment options. She is the Editor of *International Gambling Studies*.

Professor Nerilee Hing is the Founding Director of Southern Cross University's Centre for Gambling Education and Research. Her research interests include problem gambling, responsible gambling, gambling amongst vulnerable populations, impacts of gambling, help-seeking for gambling problems, and gambling and new technologies.

Associate Professor Paul Delfabbro is based at the School of Psychology at the University of Adelaide where he lectures in learning theory and advanced methodology and statistics. He is the author of over 200 reports and papers in various areas of social policy, including gambling and child protection and has completed numerous research projects for State and Federal Government Departments. In the area of gambling, he has undertaken studies in the prevalence of gambling in adult and adolescent populations, experimental studies of gambling behaviour and analyses of the effectiveness of harm-minimisation strategies.

Dr Daniel King is a senior research associate and registered psychologist in the School of Psychology at the University of Adelaide. His primary research expertise is technology-related problems among young people, with a specific focus on pathological gambling, Internet use, and video-gaming.

References

- Albarran Torres, C., & Goggin, G. (2014). Mobile social gambling: Poker's new frontier. *Mobile Media & Communication*, 2, 94–109.
- Billings, C. (2013). *Gamification of consumer experiences and potential impacts on the club/casino experience*. Paper presented at Gaming, Racing, & Wagering Australia, Sydney, August 12–14.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13, 210–230.
- Castronova, E. (2001). The rise and fall of a policy rule: Monetarism at the St. Louis Fed, 1968–86. *Federal Reserve Bank of St. Louis Review*, January/February, 1–24.
- Castronova, E., Williams, D., Shen, C., Ratan, R., Xiong, L., Huang, Y., & Keegan, B. (2009). As real as real? Macroeconomic behavior in a large-scale virtual world. *New Media & Society*, 11, 685–707.
- Casual Games Association. (2012). *Social casino gaming 2012: Casual games sector report*. Smithfield, UT: Casual Games Association.
- Chang, V. (2010). Social games. *Harvard Business Review*. Retrieved from <http://hbr.org/product/social-games/an/EC39-PDF-ENG>
- Charif, M. (2011). Show me the money: Social games, virtual currency and gambling. *iGaming Business*. March.
- Church-Sanders, R. (2011). *Social Gaming: Opportunities for Gaming Operators*. London: iGaming Business.
- De Vere, K. (2012, May 18). Japan officially declares lucrative kompu gacha practice illegal in social games. *Inside Mobile Apps*. Retrieved from <http://www.insidemobileapps.com/2012/05/18/japan-officially-declares-lucractive-kompu-gacha-practice-illegal-in-social-games/>
- Department of Broadband, Communications and the Digital Economy. (2013). *Final report 2012. Review of the interactive gambling Act*. Canberra: Australian Government.
- Downey, S. (2012). Visualizing a taxonomy for virtual worlds. *Journal of Educational Multimedia and Hypermedia*, 21, 53–69.

- eMarketer. (2013). Worldwide social network users: 2013 Forecast and comparative estimates. *eMarketer*. Retrieved from <http://www.emarketer.com/Article/Social-Networking-Reaches-Nearly-One-Four-Around-World/1009976>
- Gainsbury, S., & Wood, R. (2011). Internet gambling policy in critical comparative perspective: The effectiveness of existing regulatory frameworks. *International Gambling Studies*, *11*, 309–323.
- Gainsbury, S., Wood, R., Russell, A., Hing, N., & Blaszczynski, A. (2012). A digital revolution: Comparison of demographic profiles, attitudes and gambling behavior of internet and non-internet gamblers. *Computers in Human Behavior*, *28*, 1388–1398.
- Gambling Compliance. (2013). *Social gaming: Appetite to regulate?* London: Gambling Compliance.
- Golding, D. (2012, November 16). Betting on video games: \$23m won and lost on virtual pitch. *Crikey*. Retrieved from <http://www.crikey.com.au/2012/11/16/betting-on-video-games-23m-won-and-lost-on-virtual-pitch/>
- Government of South Australia. (2013). *Children, technology and gambling: Building a stronger South Australia*. Adelaide, SA: Author. Retrieved from <http://saplan.org.au/yoursay/children-technology-and-gambling>
- Griffiths, M. D. (2011). Gaming convergence: Further legal issues and psychosocial impact. *Gaming Law Review and Economics*, *15*, 461–464.
- Griffiths, M. D., King, D. L., & Delfabbro, P. H. (2012). Simulated gambling in video games: What are the implications for adolescents? *Education and Health*, *30*, 56–58.
- Griffiths, M. D., King, D. L., & Delfabbro, P. H. (2013). The technological convergence of gambling and gaming practices. In D. C. S. Richard, A. Blaszczynski, & L. Nower (Eds.), *The Wiley-Blackwell handbook of disordered gambling*. Chichester: Wiley.
- Grohman, C. (2006). Reconsidering regulation: A historical view of the legality of Internet poker and discussion of the Internet gambling ban of 2006. *Journal of Legal Technology Risk Management*, *1*, 34–74.
- H2 Gambling Capital. (2013). *There's nothing virtual about the opportunity in real-money gambling*. Odobo: Gibraltar.
- Hsu, D. (2010, June 30). Virgin: Betting big on head-to-head console gaming for cash (Q&A). *Venture Beat*. Retrieved from <http://venturebeat.com/2010/06/30/virgin-betting-big-on-head-to-head-console-gaming-for-cash-qa/>
- Huang, E. (2012). Online experiences and virtual goods purchase intention. *Internet Research*, *22*, 252–274.
- Humphreys, A., & Latour, K. A. (2013). Framing the game: Assessing the impact of cultural representations on consumer perceptions of legitimacy. *Journal of Consumer Research*, *40*, 773–795.
- IGT. (2013, July). *International Game Technology reports third quarter fiscal year 2013 results*. Las Vegas, Nevada: News Release IGT.
- International Social Games Association. (2013). *Best practice principles*. London: Author. Retrieved from <http://www.i-sga.org/wp../10/ISGA-Best-Practice-Principles-V1-301013.pdf>
- Jieun, L., Mira, L., & In Hyok, C. (2011). Social network games uncovered: Motivations and their attitudinal and behavioral outcomes. *Cyberpsychology, Behaviour and Social Networking*, *15*, 643–648.
- Joint Select Committee on Gambling Reform. (2013). *Final report: Interactive gambling amendment (virtual credits) bill 2013*. Canberra: Commonwealth of Australia.
- Kelly, J. M., Dhar, Z., & Verbiest, T. (2007). Poker and the law: Is it a game of skill or chance and legally does it matter? *Gaming Law Review*, *11*, 190–202.
- King, D. L., Delfabbro, P. H., Derevensky, J. L., & Griffiths, M. D. (2012). A review of Australian classification practices for commercial video games featuring simulated gambling. *International Gambling Studies*, *12*, 231–242.
- King, D. L., Delfabbro, P. H., & Griffiths, M. D. (2010). The convergence of gambling and digital media: Implications for gambling in young people. *Journal of Gambling Studies*, *26*, 175–187.
- King, D. L., Delfabbro, P. H., Kapsis, D., & Zwaans, T. (2014). Adolescent simulated gambling via digital and social media: An emerging problem. *Computers in Human Behavior*, *31*, 305–313.
- Lehdonvirta, V. (2005). Real-money trade of virtual assets: Ten different user perceptions. *Proceedings of digital arts and culture (DAC 2005)* (pp. 52–58).

- Linden Lab. (2007). *Policy regarding wagering in Second Life*. San Francisco, CA: Second Life Wiki: Official Policies. Retrieved from http://wiki.secondlife.com/wiki/Linden_Lab_Official_Policy_Regarding_Wagering_in_Second_Life
- Lipton, M. D., & Tadman, J. (2012). One cup of coffee: Gambling, social games and virtual currency in Canadian law. *Casino Lawyer, Fall*, 24–27.
- Liu, D., Li, X., & Santhanam, R. (2013). Digital games and beyond: what happens when players compete? *MIS Quarterly*, 37, 111–124.
- Meyer, G., von Meduna, M., Brosowski, T., & Hayer, T. (2013). Is poker a game of skill or chance? A quasi-experimental study. *Journal of Gambling Studies*, 29, 535–550.
- Monaghan, S. M., & Derevensky, J. (2008). An appraisal of the impact of the depiction of gambling in society on youth. *International Journal of Mental Health and Addiction*, 6, 537–550.
- Morgan Stanley. (2012). *Social gambling: Click here to play*. New York, NY: Morgan Stanley Research.
- Nettleton, J., & Huang, M. (2013). Review of the interactive gambling Act 2001: Implications for Internet gambling in Australia. *Gaming Law Review and Economics*, 17, 129–133.
- O’Loughlin, H. (2013, June 21). Top 10 social media statistics in 2013. *Active Network*. Retrieved from <http://www.activecommunities.com/blog/top-10-social-media-stats-to-watch-2013/>
- Office of Fair Trading. (2013). *Children’s online games*. London: Author. Retrieved from <http://oft.gov.uk/OFTwork/consumer-enforcement/consumer-enforcement-current/childrens-online-games/#.UnCUpvndceB>
- Owens, M. D. Jr. (2010). If you can’t Tweet ‘Em, Join ‘Em: The new media, hybrid games, and gambling law. *Gaming Law Review and Economics*, 14, 669–672.
- Papagiannidis, S., Bourlakis, M., & Li, F. (2008). Making real money in virtual worlds: MMORPGs and emerging business opportunities, challenges and ethical implications in metaverses. *Technological Forecasting and Social Change*, 75, 610–622.
- Parke, J., & Griffiths, M. D. (2007). The role of structural characteristics in gambling. In D. Smith, D. Hodgins, & R. Williams (Eds.), *Research and measurement issues in gambling studies* (pp. 211–243). New York: Elsevier.
- Parke, J., Wardle, H., Rigbye, J., & Parke, A. (2013). *Exploring social gambling: Scoping, classification and evidence review*. London: Report Commissioned by the UK Gambling Commission. The Gambling Lab.
- Rose, I. N., & Owens, M. D. (2009). *Internet Gaming Law*. New Rochelle, NY: Mary Ann Liebert.
- Scharkow, M., Festl, R., Vogelgesang, J., & Quandt, T. (2012). *Choosing digital games: The relationship between gaming motives and genre preferences*. Paper prepared for the ICA 2012 Conference, May 24–28, 2012. Retrieved from http://underused.org/docs/scharkow_festl_vogelgesang_quandt_ica12.pdf
- Schneider, S. (2012). Social gaming and online gambling. *Gaming Law Review and Economics*, 16, 711–712.
- Sévigny, S., Cloutier, M., Pelletier, M., & Ladouceur, R. (2005). Internet gambling: Misleading payout rates during the ‘demo’ period. *Computers in Human Behavior*, 21, 153–158.
- Shaul, B. (2013, September 27). Arkadium study finds in-app purchases more likely in mobile games over Facebook. *Inside Mobile Apps*. Retrieved from <http://www.insidemobileapps.com/2013/09/17/arkadium-study-finds-in-app-purchases-more-likely-in-mobile-games-over-facebook/>
- Shin, D. H., & Shin, Y. J. (2011). Why do people play social network games? *Computers in Human Behavior*, 27, 852–861.
- Shortt, A. (2012). Social games. *iGaming Business*, 75, July/August, 64–65.
- SuperData Research. (2012). *The house doesn’t always win. Evaluating the \$1.6b social casino games market*. New York: SuperData Blog. Retrieved from <http://www.superdataresearch.com/blog/evaluating-the-social-casino-games-market/>
- Takahashi, D. (2012, October 31). Three more partners bet on Betable for real-money gambling social games. *Venture Beat*. Retrieved from <http://venturebeat.com/2012/10/31/betable-signs-three-more-partners-for-real-money-gambling-social-games/>
- Takahashi, D. (2013a, April 30). The big debate about the blurring of social casino games and online gambling. *Venture Beat*. Retrieved from <http://venturebeat.com/2013/04/30/the-big-debate-about-the-blurring-of-social-casino-games-and-online-gambling/#K99PLAIfYbuJgLL0.99>
- Takahashi, D. (2013b, November 6). Playstudios launches MyVegas Slots mobile game with real-world rewards at MGM properties. *Venture Beat*. Retrieved from <http://venturebeat.com/2013/>

- 11/06/playstudios-launches-myvegas-slots-mobile-game-with-real-world-rewards-at-mgm-properties/
- Takahashi, D. (2013c, December 9). Facebook names its top games of 2013. *Venture Beat*. Retrieved from <http://venturebeat.com/2013/12/09/facebook-names-its-top-games-of-2013//>
- Unlawful Internet Gambling Enforcement Act. (2006). 31 U.S.C. §§ 5361–5367.
- Victorian Commission for Gambling and Liquor Regulation. (2013). *Footy tipping frequently asked questions*. Richmond, VIC: Author. Retrieved from <http://www.vcglr.vic.gov.au/home/gambling/new+applicants/community+and+charitable+gaming/footy+tipping+frequently+asked+questions>
- Wheeler, R. (2012). The challenges of building social gambling applications on Facebook. *iGaming Business*, 75, July/August, 67.
- Yakuel, P. (2013). Online casinos vs. social casino games. *iGaming Business*. January/February Issue, 72–73.