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# Responsible gambling strategies for Internet gambling: the theoretical and empirical base of using pop-up messages to encourage self-awareness

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**Responsible gambling strategies for Internet gambling: The theoretical and empirical base of using pop-up messages to encourage self-awareness**

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**Abstract**

Internet gambling is a rapidly growing phenomenon, increasing in types of games and gambling opportunities, number of sites, owners and jurisdictions. In response, participation and revenue generated by Internet gambling is also rising, along with the incidence of Internet gambling problems. In the unregulated environment it is difficult for players to be assured appropriate safeguards to protect them from harm, however, responsible gambling strategies are essential to reduce to risks of online gambling. Currently there is wide variation in the extent to which responsible gambling strategies are implemented, and little empirical support for their efficacy. Based on theoretical conceptualisation and empirical evidence taken from gambling and Internet research, this paper proposes the use of pop-up messages encouraging self-awareness to effectively increase responsible gambling and reduce the incidence of problem gambling. The paper describes the rationale for this strategy and key principles for the most effective implementation of this strategy. The conclusions drawn have significant implications for key stakeholders including industry, policy decision makers, regulators, academics and community members.

**Key words:** Internet gambling, problem gambling, gambling regulation, addiction, prevention, pop-up messages

**Introduction**

The beginning of public and commercial use of the Internet in the early and mid 1990s introduced the possibility of online gambling which first occurred in 1995 (Romney, 1995). Rapid expansion followed with yearly increases in the number of online gambling sites, types of games available, and jurisdictions granting licences to allow internet gambling. Revenues similarity increased from approximately US\$2.2 billion in 2000 to US\$15.2 billion in 2006 (Christian Capitol Advisors, 2005; 2007). In January 2008 there were 2,132 Internet gambling web sites owned by 477 companies from 49 different jurisdictions as listed at [www.online.casinocity.com](http://www.online.casinocity.com). This rapid expansion, diverse ownership, and lack of regulation increases competition between sites and places the onus for player protection and corporate responsibility with the individual site. However, there is little empirical support for the most suitable design and strategy to promote responsible gambling online to guide the implementation of appropriate measures. This paper aims to examine the efficacy of

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pop-up messages that promote self-awareness on Internet gambling sites as an appropriate harm-minimisation initiative.

The prevalence of online gambling in the general population appears to be relatively low, but increasing. International prevalence estimates since 2000 indicate that 1.3% to 6.5% of adults gambling online (Williams & Wood, 2007). Although gambling is intended as a recreational activity, there are inherent risks involved. Problem gambling behaviour occurs when an individual gambles in a manner that exceeds their means, for example spending more time or money than they can afford, and causes significant distress and disruption to their lives, such as neglect of other important commitments including relationships and employment. The impact of problem gambling extends beyond each individual resulting in serious personal and societal problems including financial, legal, employment, medical and psychological difficulties. The majority of problem gamblers report spending more money gambling than they can afford with estimates of 20% of gamblers in treatment spending over A\$12,000 per annum (Delfabbro, 2008). Gambling-related debts have been reported to range from US\$38,000 to US\$113,000 and often result in bankruptcy and up to 60% of pathological gamblers have reportedly committed illegal acts to fund their gambling (Delfabbro, 2008; Griffiths, 2006; Petry, 2005). Problem gambling is seemingly a significant cause of family disturbances including arguments, relationship breakdown, neglect of children, domestic violence, and the development of gambling problems amongst children of problem gamblers (Delfabbro, 2008; Griffiths, 2004). Problem gambling is also associated with health consequences including high rates of hypertension, insomnia, heart disease, stomach problems, psychosomatic symptoms, and back problems (Delfabbro, 2008; Griffiths, 2004). Commonly occurring comorbid psychological difficulties include anxiety and depressive disorders, and substance use disorders (found in up to 50% of problem gamblers), as well as suicidal ideation (experienced by between 48-70% of pathological gamblers) and suicide attempts (13-20%; Delfabbro, 2008; Griffiths, 2007; Petry, 2005).

There is some debate over whether Internet addiction should be included as a distinct disorder in the 5<sup>th</sup> Edition of the Diagnostic and Statistical Manual of Mental Health Disorders (Block, 2008). Nevertheless, as a form of gambling, research suggests that certain features of Internet gambling may lead to problem gambling behaviour for some individuals making Internet gambling more risky than other forms (Griffiths, 2003; Griffiths & Parke, 2002; Griffiths & Wood, 2000; LaRose, Mastro & Eastin, 2001). These aspects include the greater availability, convenience and ease of play, greater anonymity, the solitary nature of play, immersive nature of the Internet, the use of electronic payment, and the ability of players to gamble while under the influence of drugs or alcohol (Wood & Williams, 2007). These suggestions are supported by findings that the prevalence of problem gambling is higher amongst samples of Internet gamblers than land-based gamblers. Among an online sample of 1,920 Internet gamblers a substantial proportion were classified as moderate (22.6%) or severe (20.1%) problem gamblers (Wood et al., 2007). Similar levels of problem gambling have been found amongst university students who gamble online (Griffiths & Barnes, 2007; Griffiths, Wood, & Parke, 2006; Ladd & Petry, 2002).

### **Current Use of Responsible Gambling Policies**

In recognition of the potential risks involved with Internet gambling it is essential that responsible gambling strategies be enacted to protect players. However, there are

several barriers to the implementation of effective harm-minimisation strategies. Firstly, a general lack of regulation within and across jurisdictions means it is largely the responsibility of each gaming site to employ strategies to protect players from harm. For those sites that endeavour to provide responsible gambling measures, either to comply with regulatory requirements, to encourage gamblers to remain with the site, for social or corporate responsibility, or for philanthropic reasons, difficulties remain. The lack of research in this newly emerging field and the limitations of existing studies have resulted in a deficit in knowledge about Internet gambling and Internet gamblers and there is currently little empirical support for effective online responsible gambling programs. The majority of responsible gambling measures used online are not based on empirical data demonstrating their effectiveness, but created on the face value of the presumed effect or extrapolated from strategies used for other forms of gambling, which also may lack empirical validity. To effectively protect players from harm and comply with the intentions of responsible gambling policies, it is essential that the design of harm-minimisation strategies be based on theoretically sound principles and empirical support.

Harm-minimisation strategies aim to facilitate gambling in a responsible manner, that is, to promote gambling within a player's means so they don't excessive time or money gambling, which might cause the individual problems. This approach to responsible gambling recognises the potential risks of gambling, but also that individuals may gamble appropriately within their means. Consequently, measures aim to impact players who need assistance, without unnecessarily disrupting or restricting play for all gamblers. Even in the unregulated environment and in the absence of mandated policies many online gambling sites include some features designed to encourage responsible gambling. However, there is wide variation in the type and extent of responsible gambling practices used ranging from statements of age limits, provision of information about problem gambling, and links to problem gambling help sites, to self-exclusion programs, on-line counsellors and options for self-imposed time and money limits (Wood & Williams, 2007). Furthermore, these measures may feature prominently on sites, but most often are virtually hidden located only through a variety of drill downs.

Sites regulated by the UK's Gambling Act (2005) are required to show clocks and timers indicating the current time, time in play and prominent displays of how much money is being bet, won and lost in pounds and pence. However, in some jurisdictions the only regulation that addresses problem gambling is the requirement that operators must display on the entry screen a warning of the addiction possibilities of gambling and information on sites to assist compulsive gamblers (Jawad, 2006). In most jurisdictions it is left to the operator's discretion how to adopt the most appropriate responsible gambling strategies and research has found that very few gambling sites were engaged in socially responsible practices and that much more could be done to protect vulnerable groups (Griffiths, 2007; Smeaton & Griffiths, 2004). Furthermore, there is a distinct lack of research on player protection measures in place on Internet gambling sites and their efficacy.

An investigation of 30 Internet gambling websites in the UK found that only half of these made significant attempts to verify the age of players and only 7 made explicit references to problem gambling (Smeaton & Griffiths, 2004). In a follow-up study of the 20 most popular online gambling sites visited in Britain, 60% of the websites

provided problem gambling information and/or a link to a Gambler's Anonymous or GamCare website (Jawad & Griffiths, 2008). However, only four sites (20%) were given a 'high' rating for the effectiveness of their responsible gambling measures and included measures such as self-assessment tests, daily/weekly deposit limits, options for self-exclusion, and filtering programs. It was noted that most of these options were not located on the sites' home page, but were available through drill downs and the study did not investigate the use or effectiveness of these strategies (Jawad & Griffiths, 2008). Although further research is needed to investigate the use of responsible gambling strategies across a broader range of sites, the apparent lack of serious attempts to provide player safeguards is incongruent with the emerging culture of protecting gamblers from harm. In a large-scale survey of Internet gamblers conducted by eCOGRA (2007) the majority of respondents indicated that they would find responsible gambling features at least "quite useful" indicating that the adoption of such strategies would not cost sites players or result in a loss of revenue.

### **Appropriate Design of Effective Responsible Gambling Strategies**

The implementation of empirically-supported responsible gambling strategies will assist Internet sites in meeting the needs of online gamblers and protecting players from harm. This allows sites to fulfil their corporate responsibility to society without overtly affecting non-problem gamblers or losing profits. To date there is a paucity of empirical support for responsible gambling strategies for any type of gambling in any international jurisdiction. For example, a national audit of all responsible gambling programs mandated in Australia, a country with one of the highest rates of gambling participation in the world, found there was no available evidence supporting the efficacy of mandated responsible gambling measures in place (Hing, Dickerson, & Mackellar, 2001).

To design effective harm-minimisation strategies it is necessary to understand the factors that contribute to problem gambling behaviour. Problem gambling behaviour is characterised by a loss of control resulting in excessive time and money spent gambling. This behaviour may be caused by a disassociation from play or absorption in gambling and narrowing of attention. Research findings demonstrate that the majority of gamblers experience dissociation during play, including losing track of time, feeling like a different person, and feeling 'outside' oneself, and that the extent of dissociation increases with increasing severity of gambling pathology (Jacobs, 1988; Powell, Hardoon, Derevensky, & Gupta, 1996). Gamblers also appear to fail or be slower to respond to external stimuli and dissociate from previous thoughts and moods (Anderson & Brown, 1984; Diskin & Hodgins, 1999; Jacobs, 1986) indicating that their attention narrows and they become absorbed in the gambling activity, forgetting other life issues. This lack of self-awareness during gambling may lead players to act in ways originally not intended such as chasing losses and spending more money and time gambling than they can afford.

Problematic behaviour on the Internet is not unique to gambling. Similar to problem gamblers, Internet users have reported time disorientation and unsuccessful attempts to reduce their Internet use despite the significant problems it was causing (Young, 1998a, 1998b). In a survey of student Internet users, 13% of participants reported that Internet use had interfered with their academic work, professional performance, or their social lives (Scherer & Bost, 1997). An investigation of the psychiatric comorbidities of excessive Internet use revealed that problematic Internet use was

associated with subjective distress, considerable social, vocational and/or financial impairment, as well as substantial psychiatric comorbidity and that all participants met DSM-IV criteria for an impulse control disorder not otherwise specified (Shapira, Goldsmith, Keck, Khosla, & McElroy, 2001). These findings support the assertion that Internet gambling may lead to more problem behaviour as it suggests that certain aspects of the Internet may facilitate impulsive behaviours.

Due to the intense focus and time disorientation apparently experienced by individuals during Internet gambling sessions, which may lead to spending more time and money than previously intended, effective harm-minimisation strategies must be able to draw attention away from the game. This is consistent with research on warning signs that demonstrates warning messages must be capable of attracting attention in the presence of competing visual stimuli (Johnston & Dark, 1990). One method of capturing attention is the use of an interruption, which prompts transition of attention focus from a primary task to a notification (McCrickard, Catrambone, Chewar, & Stasko, 2003). Speier and colleagues (1997) found that in simple, non-challenging work contexts the introduction of interruptions actually increases human performance. This effect may occur as when performing tasks that do not require effortful mindful actions, such as playing some online gambling games, individuals tend to occupy their unused cognitive capacity with non-task-related things, resulting in a loss of focus on their gambling behaviour. These results suggest that by briefly interrupting play on Internet gambling sites with a forced break and responsible gambling message, individuals may be able to refocus their attention on their gambling behaviour, which may allow them to assess whether the amount of time and money invested in the activity is appropriate based on their original intentions.

### **Use of Pop-up Messages Online**

The implementation of responsible gambling strategies should be based on empirical evidence and theoretical frameworks wherever possible. However, given the lack of research on Internet gambling, the design of online responsible gambling programs must initially be extrapolated from findings in other fields. One method employed to temporarily attract attention away from a primary task to secondary information contained in messages is the use of 'pop-ups', which have been increasingly incorporated into computer interfaces including software and web browsers. From an information processing perspective, conveying information to a user who is engaged in another task is made difficult as the user must split their cognitive capacity between the two tasks (Hegarty & Just, 1993). For this reason current Internet responsible gambling strategies that are contained on separate web pages from those used during gambling sessions are not effective as the gambler is engaged with playing and not cognisant of the responsible gambling features or information. Therefore, pop-up messages are considered useful as they reduce the degree to which a gamblers' cognitive capacity is split between two sources and disruption to the session by moving between pages. Pop-ups temporarily interrupt gambling sessions between games to draw the player's attention to the responsible gambling features increasing cognitive awareness of the harm-minimisation strategies and the extent to which they impact gambling behaviour.

The increasing use of pop-up messages on the Internet is based on empirical support for their effectiveness. Studies show that information is better recalled when inserted in a pop-up window than when displayed on a static screen, presumably because they

increase the visual saliency (Stark, 1990). Furthermore, pop-up messages have been shown to effectively communicate information as well as increasing comprehension and application of information to appropriately modify thoughts and behaviour to improve task efficiency and lead to higher performance (Betrancout & Bisseret, 1998).

Despite the apparent benefits of pop-up messages some suggestions have been made that online pop-ups are viewed as intrusive and may result in negative attitude formation (Ha, 1996) or avoidance of the sites altogether (Abernethy, 1991). However, research demonstrates that when used appropriately pop-ups can generate a positive indirect response and can increase the number of pages than an individual views at the site (Moe, 2006). Studies of Internet pop-ups advertisements show that when pop-ups are displayed when the user's cognitive effort is low and are perceived as relevant, valuable and contain useful information, they elicit less irritation and avoidance (Edwards, Li, & Lee, 2002; Pasadeos, 1990).

### **Support for Pop-ups for Responsible Gambling Strategies**

Given the success of pop-up messages already used online it is reasonable to extrapolate that these messages could be utilised as an effective method of facilitating responsible gambling on Internet sites. Furthermore, pop-up messages have been shown to be an effective responsible gambling strategy for electronic gaming machines (EGMs; see Monaghan, 2008). A study of gambler's self-reported responses to modified EGMs in gambling venues in Nova Scotia found that exposure to pop-up message at 60-minute intervals was associated with a small reduction in session length and a decrease in expenditure among high-risk players (Schellink & Schrans, 2002). Messages appearing at 30-minute intervals were reported to be seen by more players and for high-risk players were associated with a decline in the frequency of exceeding budgets set for play (Schellink & Schrans, 2002). In a laboratory study involving university students with gambling experience, participants exposed to pop-up messages whilst playing electronic roulette reported fewer irrational beliefs about gambling and finished their sessions with significantly more credits remaining (Floyd, Whelan, & Meyers, 2006). Furthermore, the messages did not appear to compromise the participant's experience of play and participants reported reading an average of 81% of the messages displayed. Another laboratory study involving university student regular gamblers found pop-up messages were accurately recalled by players immediately following a session of play and at a two-week follow-up (Monaghan & Blaszczynski, 2007). Importantly, players reported that pop-up messages significantly affected their thoughts and behaviours during play, by breaking their focus on play and increasing their awareness of money spent and consideration of whether they needed a break. Significantly, participants reported that if they played real EGMs displaying pop-up messages it would influence their awareness of the time spent playing and the length of their sessions.

These results indicate that pop-up messages effectively capture gambler's attention during play and communicate information that is comprehended and influences gambling-related thoughts and behaviour in such a way that they facilitate responsible gambling. These effects have been found with regular gamblers indicating that pop-up messages appear to reduce problem gambling behaviour and increase responsible gambling behaviour. Importantly, there is also evidence that pop-up messages do not significantly disrupt or annoy players, which is consistent with evidence from

marketing studies that demonstrate when pop-ups are perceived as valuable they are not irritating.

### **Pop-up Messages Promoting Self awareness**

On the basis of the evidence of the effectiveness of pop-up messages on Internet sites and EGMs it is reasonable to conclude that this mode of presentation may be effectively used to promote responsible Internet gambling. Online gamblers appear to be at risk of becoming dissociated during play, over-involved in the session, and losing track of time. Pop-up messages appearing on Internet gambling sites would break dissociation and help players focus on their gambling behaviour and monitor their time and money spent. This is expected to assist players to gamble in a responsible manner, within their means. To increase the ability of Internet gamblers to regulate their own behaviour appropriately, the content of pop-up messages should aim to facilitate self-awareness and suitable behavioural modification.

The use of messages encouraging self-awareness to facilitate responsible gambling has some empirical support. In a laboratory study, regular student EGM gamblers were exposed to signs during a simulated gambling session prompting them to reflect on the time or money spent during a session and whether they should consider taking a break play (e.g. *“Do you know how long you have been playing? Do you need to take a break?”*; Monaghan & Blaszczynski, 2007). Participants reported these signs had a significant impact on their thoughts and behaviours during the session. Self-appraisal messages reportedly influenced players’ awareness of the time they had been playing and their likelihood of taking a break and the players stated that if these messages were displayed on real EGMs they would have a similar impact. These results indicate that messages encouraging self-awareness appropriately impacted gambler’s thoughts and behaviours to encourage responsible gambling.

Further support for the utility of enhancing self-awareness during gambling is demonstrated by the use of strategy as a key component of treatment for problem gambling. Multiple therapeutic approaches teach gamblers to be more aware of their cognitions, emotions, and behaviours during gambling situations including cognitive-behavioural therapy, mindfulness, and motivational interviewing, all which have been shown to successfully reduce problem gambling (Hodgins, Currie, & el-Guebaly, 2001; Ladouceur, Sylvain, Boutin, Lachance, Doucet, Leblond, & Jacques, 2001; Toneatto, Vettese, Nguyen, 2007). As problem gambling behaviour appears to be related to losing track of time and money spent gambling, dissociation, and becoming engrossed in the game, it is theorised that by assisting gamblers to be more aware of their thoughts and behaviours they will be able to exercise appropriate control over their gambling. Therefore, pop-up messages that encourage gamblers to reflect on their current session and consider whether they need to modify their behaviour (e.g. *“Do you know how long you have been playing? Do you need to take a break?”* or *“Do you know how much money you have spent? Do you need to take a break?”*) may reduce problem gambling and increase responsible gambling behaviour. Furthermore, these signs should not negatively impact players who gamble without problems.

### **Implementing Pop-up Messages on Internet Gambling Sites**

Responsible gambling strategies should be implemented for all online gambling sites that wish to act in a corporately responsible manner and offer players protection by reducing the risk of gambling-related harm. In addition, ‘practice’ sites where



individuals can gamble without spending money should also instigate responsible play practices as individuals may spend excessive time online playing resulting in negative impacts in other life areas. Furthermore, practice sites have been identified as posing significant risks for problem gambling. There is evidence to suggest that the possibility to play without money makes games more attractive, reduces barriers to play, and may undermine attempts to quit (Blaszczynski, Sharpe, & Walker, 2001). Free gambling sites are frequently accessed by youth (reportedly played by over 50% of high-school students surveyed; McBride, 2006) and have been identified as fostering future gambling problems as they are commonly played by adolescents identified as at-risk for gambling problems or already experiencing gambling problems (Derevensky, 2005). The high use of practice sites by adolescents is of considerable concern as, relative to money sites, these have an over-inflated pay-out rate (Griffiths & Parke, 2004; Sevigny, Cloutier, Pelletier, & Ladouceur, 2005), which may lead youth, accustomed to winning to switch to the money sites, where they do not experience the same success. While these sites are promoted as fun and 'educational' they have been referred as a "Trojan Horse strategy" used by online gambling companies to acquire players who will eventually transfer to the 'real-money' gambling sites (Moses, 2006). Therefore, it is suggested that practice sites implement responsible play strategies to protect players, particularly minors, from potential harm.

One of the strengths of using pop-up messages promoting self-awareness of a responsible gambling strategy is that this should increase responsible gambling, without overtly affecting non-problem gamblers. As such, it can be implemented by online gambling operators without negatively impacting player satisfaction or revenue. Given the high level of competition between Internet gambling sites, by offering consumer safeguards, such as useful harm-minimisation measures, operators should increase player satisfaction while demonstrating corporate social responsibility. While this strategy is suitable for all gambling sites, characteristics of certain games may make them particularly well suited for this approach. Games that are continuous (have a short time lapse between wager and result) and offer the opportunity for frequent betting such as virtual slot machines, live-action sports betting, card games, and casino games appear to be more likely to be played without self-awareness and by problem gamblers (LaPlante, Schumann, LaBrie, & Shaffer, 2008; O'Neil, Whetton, & Duerrwald, 2003; Productivity Commission, 1999; Smith & Campbell, 2007; Wood & Williams, 2007). Gamblers may benefit more from pop-up messages that are displayed during these games as compared to buying lottery tickets online or wagering sites where there may be a considerable time lag between placing bets and learning of the outcome. However, these sites may still be played in problematic ways and should nonetheless include responsible gambling strategies.

The optimal frequency of pop-up messages has yet to be determined and the deficit in research on Internet gambling makes the conduct of online gamblers and problem gamblers relatively unknown. It is essential to display pop-up messages at intervals that promote responsible gambling, without unnecessarily disrupting individuals or play. Pop-up messages are perceived as less irritating when they appear at time that cognitive effort is low (Edwards, Li, & Lee, 2002; Pasadeos, 1990), which is consistent with their aim of alerting players to be aware of their current behaviour. Pop-up messages on EGMs displayed every 30 minutes were shown to reduce the likelihood of high-risk gamblers spending over their budgeted limits (Schellink &

Schrans, 2002) and may be similarly useful for Internet gamblers. However, it is possible for individuals to spend large amounts of money in a 30 minute period, suggesting pop-ups appearing more often may be useful. While further research is necessary, online gambling sites should attempt to implement pop-up messages appearing at appropriate intervals to reduce problematic gambling behaviour. It is suggested that pop-up messages be an appropriate size (e.g. 75% of the screen), with clearly worded messages in large font (e.g. no smaller than size 16) in appropriate colours (e.g. black text written on a white background) with a bold red border to indicate the warning nature of the message.

### **Conclusions**

Individuals who gamble online are at risk of acting in problematic manners and developing gambling problems causing significant distress and disruption in their lives. Despite the lack of regulation, Internet gambling sites have a corporate responsibility to protect their consumers from harm in the best manner possible, without overtly interfering with play. Pop-up messages encouraging players to be aware of their own behaviour whilst gambling is an appropriate responsible gambling strategy as it assists players to gamble within appropriate time and expenditure limits. The use of pop-up messages is supported by evidence of their effectiveness in communicating information that is applied to guide behaviour online and promoting responsible gambling on EGMs. The use of harm-minimisation messages that encourage self-awareness also has empirical support in facilitating responsible gambling.

Further research is required to empirically validate the effectiveness of pop-up messages on Internet gambling websites and to determine the optimal message content and frequency to facilitate responsible gambling. Research could also investigate the use of pop-up messages combined with audio alerts, which may be more effective than pop-ups alone. Furthermore, studies should be conducted to determine the most effective responsible gambling strategies for youth gamblers and practice sites as these are important areas for consideration. Nevertheless, the use of pop-up messages as a responsible gambling strategy should be implemented for all online gambling and practice sites, particularly those offering rapid game play, to protect players from potential harms.

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