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Abstract: Scholarly research into gambling did not formally begin until 1974, with the First Annual Conference on Gambling being held in Las Vegas. Since then, a plethora of academic research has been published, most of it focusing on problem gambling, be it relating to its behavioural causes, the mechanisms of EGMs and their relation to problem gambling, and/or gambling and its consequences. In 1997 however, Shaffer called for a greater adherence to rigorous scientific standards than is typical in much of the gambling research literature to date. Against the background of the moral and public policy issues surrounding gambling, strong adherence to either a pro- or anti-gambling view renders the objectivity tenet of scientific discourse virtually irrelevant. McGowan (1997) is also critical of a researcher’s ideological stance being brought into play, as he considers that it inevitably prevents the conducting of mature, high-quality gambling research, a point reinforced by McMillan (2009). The ‘anti’ gambling group is classified under the ‘Ethics of Sacrifice’ and the ‘pro’ group under the ‘Ethics of Tolerance’ (McGowan 1997). Like Shaffer (1997), McGowan argues that a middle (objective) road should be taken in gambling research. The majority of gambling academic literature focuses on problem/pathological gambling, thus ignoring the reality that, for the majority of its adherents, gambling is an act of free choice with minimal harmful consequences. In the U.S., the emphasis on problem gambling has been to view it as a medical disorder whereas in Australia it is viewed in terms of the social harm caused not only to the problem gambler but to the additional 5-10 people who are also affected by the gambler’s addiction (Productivity Commission 1999, p. 21). This paper discusses the interdisciplinary gambling literature.

Keywords: Gambling, Problem Gambling, Social Issues Relating to Gambling, EGMs, Gambling and Public Policy, Social Contract Theory, Entrapment Theory, Legitimacy

Introduction

Although problem gamblers represent only 2.1 per cent of the adult population in Australia, their share of expenditure on gambling is 33 per cent. (Productivity Commission 1999, p.2). It is widely acknowledged, however, that the number of problem gamblers is substantially higher (10 per cent) amongst regular gamblers. It would appear that an extreme case of the Pareto principle applies here, as Symond (2007) states that “10% [of] gamblers provide 70% of the spend”. From a marketing perspective, the existence of such an extreme Pareto effect among current customers highlights a problem common, or even paradox, in the marketing of harmful products, namely, that the existence of a hard core of heavy users creates a logical target market, but where “successful” marketing to this target group creates unacceptable harm to both the consumers and the community-at-large. In this sense, the argument is the same in the marketing of tobacco, alcohol and firearms. Gambling expenditure, which is a mark of successful marketing, as well...
as losses to gamblers, increased substantially in 2007-08 at $18.1 billion (Australian Gambling Statistics (AGS) 2010) compared to $10.8 billion in 1997-98 (Productivity Commission 1999, Vol. 1, p.3.2). More than half of all gambling turnover is derived from EGMs – for example, $10.2 billion of the $18.1 billion losses to gamblers in Australia during 2007-08 was derived from gaming machines (EGMs) (AGS 2010). A recent media article claims that NSW registered clubs have admitted that more than twenty three percent of their $A3.4 billion revenue in 2007 was derived from problem gamblers (Saulwick 2010).

This paper examines the literature on gambling, with particular focus on electronic gaming machines (EGMs). As can be seen, the majority of literature focuses on issues relating to problem gambling.

Review of the Literature

Problem Gambling

An initial academic journal search on 29 September 2007 highlighted the strong focus on problem gambling in the academic literature. Table 1 shows the search terms entered in 2007 and 2010 (1 March and 8 November) into Google Scholar, with the resulting number of hits:

Table 1: Academic Journal Gambling ‘Hits’

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2010 (1 March)</th>
<th>2010 (8 November)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Problem gambling’</td>
<td>25,200</td>
<td>145,000</td>
<td>168,000</td>
</tr>
<tr>
<td>‘Recreational gambling’</td>
<td>6,930</td>
<td>29,300</td>
<td>31,200</td>
</tr>
<tr>
<td>‘Gambling from the organisation perspective’</td>
<td>2,300</td>
<td>29,000</td>
<td>30,200</td>
</tr>
<tr>
<td>‘Non-problem gambling’</td>
<td>539</td>
<td>1,090</td>
<td>1,210</td>
</tr>
</tbody>
</table>

As can be seen from the above table, the strong focus on problem gambling in the academic literature continues to dominate. It should be noted that, in addition to the articles under ‘problem gambling’, all other search terms contained a vast majority of articles relating to problem gambling. Certainly, gambling literature searches conducted over the past several years by the authors have confirmed the overwhelming focus on problem gambling in the academic literature. An Australasian Gaming Council (AGC) email newsletter (January/February 2010) however, highlights a report by the NSW Population Health Survey showing a slight decrease (0.4%) in the level of problem gambling in that State. Further, a study of twins in relation to problem gambling rates in Australia showed that problem gambling “is no more prevalent than schizophrenia or anorexia nervosa” (Slutske et. al. 2009, p. 63). Furthermore, researchers such as McMillen (2009) refer to Australian statistics showing a decline in gambling expenditure, both in terms of per capita spending and “as a proportion of household discretionary income” (p. 7). In addition, Novak and Allsop (2009) state “every indicator suggests that problem gambling is small and in trend decline” (p. 1).

Following consensus regarding the lack of a national definition of problem gambling, “Australian and State/Territory Government Ministers agreed to the implementation of a National Gambling Research Program” (Australasian Gaming Council 2008, p. 1). The following definition was recommended as the national standard: “Problem gambling is charac-
terised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community” (ibid).

The following review of the literature will identify the main factors associated with problem, or potentially problem, gambling.

**Sociodemographic Factors**

Much of the literature identifies a higher proportion of males than females having an existing, or potential, gambling problem (GRP Report No. 6 2003, Welte et al. 2006), with male adolescents appearing to be at significantly higher risk of EGM addiction (Griffiths 2009; Messerlian, Derevensky and Gupta, R. 2004 and 2005; Welte et al. 2006). Youth gamblers experience issues of suicide and depression (see for example, Nower et al. 2004), issues that also affect problem gamblers at any age. Recent research shows however that gambling activities appear to be increasing among older adults. Nower and Blaszczynski (2008) reported that men these adults commenced gambling in mid-life and exhibited gambling problems close to age 60, although Griffiths and Delfabbro (2001) state that “problem gamblers start gambling at a significantly earlier age than non-pathological gamblers” (p. 18). Other research identifies a higher prevalence of problem gambling amongst older adults who were sampled at gambling venues in comparison to older adults from the community (McNeilly and Burke 2000). Women start gambling at a substantially later age than men, although there was no evidence of differences between the sexes in terms of the age that treatment for gambling problems was sought, according to a study by Tavares et al. (2001).

Studies show that parallels exist “between problem gambling and children with attention deficit disorder (ADD)” (Griffiths and Delfabbro 2001, p. 16). The GRP study (2004) showed that problem gamblers in the state of Victoria (Australia), in addition to the higher likelihood of being male, are older (in the age groups of 39-64), have a family history of gambling, have lower education levels and consume drugs and/or alcohol. A study by Hing and Breen (2001) showed that female participation in certain forms of gambling including EGMs was comparable to that of males in relation to problem gambling factors. A 2007 British study demonstrated a link between problem gamblers and low levels of income, low skilled occupations and family members with gambling problems (Orford et al. 2009a). Family and friends view of gambling as an acceptable activity was also found to result in a higher likelihood of gambling uptake (although not necessarily resulting in problems) (Welte et al. 2006).

**Psychological and Personality Factors**

Although sensation-seeking was not shown to have a strong association with problem gambling, empirical results by Parke, Griffiths and Irving (2004) demonstrated that pathological gamblers possess a high level of competitiveness and a low ability to defer gratification. A further study by Parke, Griffiths and Parke (2007) found that, whilst positive attitudes/‘illusions’ as a coping mechanism are beneficial in many circumstances (as, for example, when facing bad news about one’s health or financial circumstances), having positive attitudes in situations of adverse circumstances such as gambling losses, can counteract external attempts at promoting responsible gambling.

Research shows that problem gamblers use gambling as a means of escaping from the problems of everyday life (Wood and Griffiths 2007) and/or to earn income (Nower and
Blaszczynski 2010, Walker et al. 2004). Research also confirms that problem gamblers lose track of whether they are winning or losing during EGM play (Nower and Blaszczynski, 2010). This same study however, demonstrates that it is the interaction between the player’s cognition and the EGM, rather than any so-called ‘addictive features’ of the machine itself, which leads to excessive levels of play. Other research presents evidence of irrational beliefs, such as superstition, amongst problem and non-problem gamblers (Joukhador, Blaszczynski and Macallum 2004; Delfabbro 2004), with other findings demonstrating a significant lessening in irrational beliefs associated with losing, as the reality of their situation sets in (Monaghan and Blaszczynski 2009). Although increased gambling arousal as a result of ‘excitement’ has often been postulated to be “the gambler’s drug”, measurement of heart rate differences between regular and non-regular gamblers demonstrated the same increase in both groups during play whereas, unlike regular gamblers, the heart rate of non-regular gamblers did not return to normal in the period following play (Griffiths 1993, p. 365).

The suggestion that gambling may trigger a physiological response in a similar fashion to that observed in drug-alcohol abuse and other maladaptive behaviours, lays open the possibility of neurological and/or endocrinological explanations which have been explored in the medical literature, most notably by the eminent neuroendocrinologist scholar Robert Sapolsky (see as an example his 2000 article “Glucocorticoids and Hippocampal Atrophy in Neuropsychiatric Disorders”).

Addiction and/or Co-addiction

In categorising physiological and psychological indicators of maladaptive behaviour, ten vulnerable access points have been identified through which consumers may be driven to make maladaptive choices as part of their decision making processes, particularly in terms of drugs or behaviours (Redish 2008). These are “(1) moving away from homeostasis, (2) changing allostatic set points, (3) euphorogenic “reward-like” signals, (4) overvaluation in the planning system, (5) incorrect search of situation-action-outcome relationships, (6) misclassification of situations, (7) overvaluation in the habit system, (8) a mismatch in the balance of the two decision systems, (9) over-fast discounting processes, and (10) changed learning rates” (Redish 2008 p. 415). One or more manifestations of these vulnerabilities can result in an individual’s addiction, or potential thereof. Macallum and Blaszczynski (2002) consider that “substance abuse is a common comorbid condition of pathological gambling” (p. 411) and that failure to treat both addictions simultaneously may lead to higher rates of relapse. Understanding the neural paths in the decision making process can lead to an understanding of disorders of addiction and pathological gambling with the associated link to controlled and uncontrolled/impulsive behaviour (Bechara 2003). Authors such as Welte et al. (2006) have also found a correlation between problem gambling and substance abuse.

Community Attitudes

Negative perceptions towards EGMs are widely held in the Australian community (one sees the regular diet of negative media stories in Australia) and studies such as GRP (2004) show largely negative attitudes by Victorians. On closer examination however, the GRP study found that Victorians (a) prefer gambling taxation over other forms of taxation and (b) agree...
that the primary responsibility for a reduction in gambling lies with the individual, although recognising it is a shared responsibility between individuals, gambling operators and the government.

Negative community attitudes towards gambling also exist in Britain (see Orford et al., 2009). In terms of future studies of attitudes towards gaming establishments, a scale such as the Casino Attitudes Scale (CAS) developed by Sutton and Griffiths (2008) could be used “to identify how positive or negative attitudes toward casinos are associated with other psychosocial variables (e.g. personality factors)” (p. 244), which may be helpful when considering the introduction of future gaming establishments into a community.

**Situational/Structural/External Features of EGMs**

Increased musical tempo was found to have a significant positive effect on the speed of bets (Dixon, Trigg and Griffiths 2007; Spenwyn, Barrett and Griffiths 2010). Furthermore, whether the music is from the EGM itself or external to it makes little difference in terms of the potential “acquisition, development, and maintenance of gambling behaviour” (Griffiths and Parke 2005, p. 1). A comparison of recall of pop-up messages over static messages on thoughts and behaviours related to warning signs in gaming venues and on EGMs, showed pop-up messages to be more effective (Monaghan and Blaszczynski 2009).

The effectiveness of three different modifications to the structural characteristics of EGMs on harm minimisation strategies was tested by Sharpe et al. (2005). Reducing maximum bet levels on EGMs was the only modification shown to be effective in reducing levels of harm to problem gamblers (the other two modifications being the reduction of reel spin and the removal of large note acceptors).

**The Effect of Advertising on Demand by Consumers for EGM Services**

What is the link between advertising and the consumption of EGM services? Research by Breen, Nisbet and Hing (2006) found a moderating effect on the number and type of advertisements after the introduction of the voluntary Queensland Responsible Gambling Code of Practice in 2003, with the number of advertisements reducing significantly and the emphasis changing from a focus on winning to that of the actual experience of gambling (such as “the atmosphere, excitement and buzz”, p. 1081). Although all external advertising of EGMs is banned in Australia, research by Griffiths (2005) demonstrates that the advertising of lotteries often depicts the odds of winning as being within anybody’s grasp, thereby feeding people’s superstitions and irrational beliefs. Furthermore, casino advertisements invariably appear to portray an image of glamour and excitement, potentially exploiting the vulnerable.

**Studies of Social Responsibility and Gambling**

Various laws in NSW have focused increasingly on responsibility in gambling since 1999 and various restrictions resulted with the introduction of the NSW 2001 Gaming Machine Act. Hing’s innovative PhD (2000) has resulted in a number of publications relating to gambling. Her data were generated during 1998/1999, with her research focusing on NSW Registered Clubs in relation to problem gambling as an emerging social issue. Since then,
there a number of other researchers from a number of different disciplines examining social responsibility and gambling have emerged.

The Reno Model (Blaszczynski et al. 2002) examines the issue of responsibility in gaming and considers that, in addition to gaming providers and the government, the burden of responsibility must also rest on the individual. The Halifax Model was developed by Schellinck and Schrans (2005) in order to address the various shortcomings in the Reno model. The authors recognise that a scientific approach alone (such as laboratory settings) will not be sufficient to address the multi-faceted aspects of the responsible provision of gambling and minimising harm to certain individuals. Furthermore, responsible gambling and the prevention, or minimisation, of problem gambling should not be left to the psychology and health care disciplines. Marketing is recognised by the authors as having a major role to play in this area. Business, along with public policy researchers, economists, psychologists “philosophers and other social scientists” should work closely together, as each of their respective theoretical frameworks will add to the development of mature gambling research (McGowan 1997, p. 288). The Halifax Model recommends that the precautionary principle be adopted in the gaming industry, whereby the gambling product must be shown to be safe prior to release, rather than the current focus on releasing the product and then determining if it is harmful or not.

Gambling and Public Policy

A strong stance against restrictive public policy measures and any attempt by anti-gambling lobbies to influence public policy is taken by Novak and Allsop (2009). Their exhortation is that, “on economic, social and liberty grounds, restrictive government policies against gambling should be resisted. The capacity of individuals to be free to gamble should be the benchmark against which government policies towards gambling consumers and providers will be judged” (p. 1). At the opposite end of the spectrum, Australian Independent Senator Nick Xenophon held a ‘gambling reform summit’ in Sydney Australia (11 June 2010), with the BBC News (Mercer 2010) quoting his ‘extreme anti-EGM’ view:

“They can’t continue to go with business as usual. It is not tenable for a situation where 50% of poker machine losses come from problem gamblers and something has to change. There are literally hundreds of thousands of Australians today whose lives are worse off because of a poker machine addiction, either directly or through a member of their family and this is something that we cannot ignore as a very major social issue.”

One cannot help but question the political rhetoric that “50% of poker machine losses come from problem gamblers”, as this statistic does not appear to be supported elsewhere in the literature cited. It should be noted that Senator Xenophon was elected at the outset on his ‘No Pokies’ policy platform.

Along a similar vein, Doughney (2007) accuses EGM public policy makers of being “ethically blind” in that they do not incorporate an ethical perspective in their policy decisions (p. 311).
**Legitimacy**

Given “the theoretical finding that in order to be viewed as legitimate, EGM operators need to ensure that: (a) socially responsible programs are implemented throughout their businesses, (b) they adhere to the law, and (c) they satisfy a range of stakeholder expectations” (Buchanan and Jones 2009, p. 8), the legitimacy literature will also be examined.

Institutional theory postulates that organisations influence, and in turn are influenced by, society and that a ‘social contract’ between the two entities exists. Organisations therefore, in order to develop or protect their legitimacy, try to ensure they have policies, processes and practices that meet societal expectations (Hoque 2005). Legitimacy theory, developed from institutional theory, has emerged as an important area of scholarly research. According to Brinkerhoff (2005), three types of organisational legitimacy exist: normative; pragmatic; and cognitive, with Patten (1991) stating that the “concept of economic legitimacy was, until recent years, largely the only constraint placed on business by society: (p. 298). Dowling and Pfeffer (1975) state that organisations achieve legitimacy when the social values of an organisation are congruent with “the norms of acceptable behaviour in the larger social system of which they are a part” (p. 122). A strong link exists between society’s expectations and the marketing goals of organisations, with Abratt and Sacks (1989) stating that “it is only when a conflict between the interests of the business and society is perceived that companies generally see the relevance of societal marketing” (p. 28). Suchman (1995) found that many researchers refer to the term ‘legitimacy’ but very few define it. Accordingly, he develops a definition of organisational legitimacy: “Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (p. 574).

**Entrapment Theory**

Given the overwhelming focus on problem gambling, entrapment theory is also pertinent. Entrapment can relate to a deliberate strategy on behalf of the organisation to entice customers and then ‘entrap’ them, whether through the promise of greater rewards commensurate with time spent in the activity, or through structural factors such as the layout (‘servicescape’) of the facility. It can also relate to ‘sunk costs’, whereby customers can become entrapped when they spend more time and money in order to try and recuperate some, all, or exceed, monies already ‘invested’ in the activity. Garland (1990) refers to the effect of sunk costs in terms of increasing commitment to the activity as “throwing good money after bad” (p. 728) (also referred to in the economics literature as ‘exit barriers’). The ‘responsibility effect’ is examined by Schulz-Hardt et al. (2009) in relation to “escalating commitment and entrapment”, whereby people spend more time and money on an activity even if they know it will result in negative outcomes. This will hold only if the person had the responsibility for making the decision in the first place, vis a vis someone else having influenced them in their decision (p. 175). A study by Ariyabuddhiphongs and Phengphol (2008) examined the relationship between gambler’s fallacy (the belief that numbers do not appear randomly, i.e. that a ‘good streak’ must follow a ‘bad streak’), entrapment (escalating commitment, or ‘throwing good money after bad’) and near miss (when gamblers numbers are very close to the winning numbers) amongst Thai lottery players. Results found the strongest support for near miss, with gambler’s
fallacy and entrapment acting in concert with near miss “to strongly influence lottery gambling” (p. 303).

Conclusion

Scholarly research on various factors relating to gambling has increased significantly over recent years. As can be seen, a plethora of academic literature into problems associated with gambling exists. In addition to the problem gambling literature, this paper has also identified literature in three other areas, namely public policy and gambling, entrapment theory and legitimacy.

Pathological gamblers exhibit adverse effects which extend to the host community. At the same time, gambling expenditure results in a commercial return to shareholders (including the “State”). Marketing of EGMs, whilst subject to strict regulatory controls in Australia, also needs to be within a tolerance limit which is acceptable to the public. Having said that, the industry continues to develop sophisticated tools to market/promote a potentially harmful product in which consumers’ susceptibility to addiction has been well characterised.

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