eGambling
THE ELECTRONIC JOURNAL OF GAMBLING ISSUES

intro

Issue 5, October 2001

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The *Electronic Journal of Gambling Issues: eGambling (EJGI)* offers an Internet-based forum for developments in gambling-related research, policy and treatment as well as personal accounts about gambling and gambling behaviour. Through publishing peer-reviewed articles about gambling as a social phenomenon and the prevention and treatment of gambling problems, it is our aim is to help make sense of how gambling affects us all.

The *EJGI* is published by the Centre for Addiction and Mental Health and is fully funded by the Ontario Substance Abuse Bureau of the Ministry of Health and Long-Term Care. We welcome manuscripts submitted by researchers and clinicians, people involved in gambling as players, and family and friends of gamblers.

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The Biopsychosocial Approach to Gambling: Contextual Factors in Research and Clinical Interventions

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Abstract

Objective

This paper argues that adherence to a single, specialised theory of gambling is largely untenable. It highlights limitations of existing theories of gambling at three increasingly specific levels of analysis; namely, the social, psychological and biological.

Method

An overview of each level of analysis (social, psychological and biological) is provided by critically evaluating the contemporary literature on gambling. This is followed by discussions of the limitations and interdependence of each theoretical approach and the implications for research and clinical interventions.

Results

While several recent critiques of gambling research have provided considerable insight into the methodological limitations of many gambling studies, another problem is seldom acknowledged —the inadequacy and insular nature of many research paradigms. It is argued that gambling is a multifaceted behaviour, strongly influenced by contextual factors that cannot be encompassed by any single theoretical perspective. Such contextual factors include variations in gambling involvement and motivation across different demographic groups, the structural characteristics of activities and the developmental or temporal nature of gambling behaviour.

Conclusion

This paper suggests that research and clinical interventions are best served by a biopsychosocial approach that incorporates the best strands of contemporary psychology, biology and sociology.

Introduction

Gambling is one of the few activities that cuts across all barriers of race, class and culture. Although almost all surveys into gambling on a national level have concluded that there are more gamblers than non-gamblers (e.g., Blaszczynski, Walker, Sagris & Dickerson, 1997; Cornish, 1978; Kallick, Suits, Dielman & Hybels, 1979; Volberg & Steadman, 1992), most participants gamble infrequently. Estimates based upon survey data indicate that between 80% and 94% of British adults (Cornish, 1978), between 24% and 68% of American adults (Culleton, 1985; Culleton & Lang, 1985; Kallick et al.,1979) and between 81% and 92% of Australian adults (Grichting, 1986; McMillen, 1995) have gambled at some time in their life.

The introduction of national lotteries, proliferation of gaming machines and construction of casinos has greatly increased the accessibility and popularity of gambling worldwide, and as a result, the number of people seeking assistance for gambling-related problems (McMillen, 1996). Therefore, it is not surprising that there has been a large increase in research into gambling, and more specifically, into the underlying mechanisms and motivations to gamble and the differences between non-gamblers, "normal" gamblers and problem gamblers. Much of this literature has been summarised in a number of recent reviews (Dickerson, 1989; Lesieur & Rosenthal, 1991; Walker, 1992; Griffiths, 1996), all of which applaud the many useful findings yielded by recent gambling research. However, what is also evident is that considerable pessimism has been expressed regarding the extent to which researchers have adequately addressed many fundamental issues of gambling. These include the factors or characteristics which distinguish normal from problem gambling, how to classify and identify problem gamblers, and the mechanisms underlying each level of gambling involvement. Although most reviewers commonly attribute the failure to address these issues to the methodological limitations of many existing studies (e.g., sample size, lack of ecological validity, poor design) and lack of clarity in the theories, concepts and arguments advanced to explain gambling.

A more serious problem is the fragmented, insular nature of research programmes. Despite token recognition of the complexity of gambling behaviour, most research has been rigidly confined to narrow areas of specialisation. Singular theoretical perspectives (e.g., behaviourism, cognitivism, addiction theory) have been assiduously pursued with few attempts to establish links or contrast them with other research programmes. This assumes that a single explanation or theory is sufficient to explain every aspect of gambling behaviour and that rival perspectives are thereby misguided. Yet, as Brown (1986) and Griffiths (1995) recently asserted, this may not be so.

Gambling is a multifaceted rather than unitary phenomenon. Consequently, many factors may come into play in various ways and at different levels of analysis (e.g., biological, social or psychological). Theories may be complementary rather than mutually exclusive, which suggests that limitations of individual theories might be overcome through the combination of ideas from different perspectives. This has often been discussed before in terms of recommendations for an "eclectic" approach to gambling (Brown, 1986) or a distinction between proximal and distal influences upon gambling (Walker, 1992). However, for the most part, such discussions have been descriptive rather than analytical, and so far, few attempts have been made to explain why an adherence to singular perspectives is untenable. Accordingly, the aim of this paper is to highlight limitations of existing theories of gambling at three

increasingly specific levels of analysis: social, psychological and biological.

Central to this view, no single level of analysis is considered sufficient to explain either the etiology or maintenance of gambling behaviour. Moreover, this view asserts that all research is context-bound and should be analysed from a combined, or biopsychosocial, perspective. Variations in the motivations and characteristics of gamblers and in gambling activities themselves mean that findings obtained in one context are unlikely to be relevant or valid in another (Dickerson, 1993, 1995). In each of the following sections, broad details of each level of analysis are provided, followed by discussions of the limitations and interdependence of each theoretical approach and the implications for research and clinical interventions. They begin with a discussion of distal factors thought to influence gambling involvement (Walker, 1992) and continue with an analysis of the limitations of theories of ongoing behaviour.

Explanations of gambling involvement

According to economic theory, gambling is considered merely another commodity, which provides utility to the consumer in the form of entertainment, excitement and the opportunity to win money (Eadington, 1995). Therefore, to determine how many people gamble in a given society it is necessary to consider the success of the gambling industry in distributing and promoting its products (Brown, 1986). Research has consistently shown a positive relationship between the availability of gambling and both regular and problem gambling (Custer, 1982; Dickerson, 1989, 1995; Dielman, 1979; Kallick-Kaufmann, 1979; McMillen, 1995; Marcum & Rowen, 1974; Skolnick, 1978; Weinstein & Deitch, 1974). Whenever new forms of gambling are introduced, or existing forms become more readily available, there is an increase in gambling, suggesting that the demand for gambling products is closely linked to their supply. The more gambling industry infrastructure that is established (e.g., new venues), the larger the range of gambling products (e.g., through the application of new technologies), and the greater the industry's marketing efforts, the more likely people will be to gamble in the first place. For example, these factors have been critical to the success of the UK National Lottery. Not only is the lottery heavily advertised on billboards, television and in national newspapers but also accessibility is so widespread that it is difficult to avoid in most shops (Griffiths, 1997). Similar trends have emerged in Australia where slot machines have been introduced in shopping malls, hotels and suburban clubs in nearly every state (McMillen, 1995).

But why is gambling so popular? According to sociologists, gambling is an inherent component of human society (Goffman, 1967) and human beings have a natural penchant for play, risk and competition. Gambling, they argue, fits easily with cultural values, virtues and lifestyles (Abt, Smith & McGurrin, 1985), so that when gambling becomes more accessible and socially acceptable, more people will gamble. As a form of social interaction, gambling provides a means by which people can escape the boredom of everyday life, adopt new roles and enjoy the excitement of the "action"; namely, the suspense, anticipation and social reinforcement resulting from taking risks and being rewarded for one's daring (Abt & Smith, 1984).

Almost all surveys of gambling (e.g., Griffiths, 1995; Kallick-Kaufmann, 1979) have shown that these broad motivational factors are central to gambling and that attitudes towards gambling are positively related to availability and cultural acceptability. However, this perspective fails to take into account many key findings and observations in gambling research. Surveys have also shown that not everyone gambles and some people gamble more than others (e.g., pathological gamblers). Research has also shown that people often gamble for reasons other than broad social and economic reasons (Walker, 1992). These other motivations may vary according to personal characteristics of the gambler and the type of gambling activity (e.g., Chantal & Vallerand, 1996). Finally, broad social and economic theories fail to explain why certain gambling activities are more popular or "addictive" than others.

Demographic variations in gambling participation have been observed since surveys were first administered (Walker, 1992). Typically, gambling has been more popular in lower socio-economic groups (Blaszczynski et al., 1997; Crisp et al., 2000; Dickerson, Baron & O'Connor, 1994; Dickerson et al., 1996; Dickerson, Walker & Baron, 1994; Downes, Davies, Davis & Stone, 1976; Frey, 1984; Volberg & Steadman, 1992; Walker, 1992), in Catholics rather than Protestants (Grichting, 1986; Kallick-Kaufmann, 1979), among unmarried people (Lesieur, 1984; Delfabbro & Winefield, 1996; Dielman, 1979; Downes et al., 1976; Sommers, 1988), in younger age groups (Mok & Hraba, 1991; Griffiths, 1995; Morgan Research, 1997) and in men (Abbott & Volberg, 1996; Dickerson et al., 1996; Mark & Lesieur, 1992; Volberg & Steadman, 1992). In addition, there are significant demographic variations in gambling activities. Older people and women are significantly less likely than younger men to gamble on (and develop problems with) casino games and racing activities (Hraba & Lee, 1995; Mok & Hraba, 1991), but they are just as likely to gamble on lotteries and slot machines. On the other hand, lottery participation is higher in lower socio-economic groups and in older and middle-aged people (Delfabbro & Winefield, 1996; Dickerson, Walker et al., 1994; Dickerson, 1995). These variations suggest that overall increases in gambling participation (and the incidence of gambling-related problems) are not evenly

distributed across demographic groups. Not all gambling activities are accessible or appealing to certain groups.

Consistent with trends observed in overall participation rates, Australian research (e.g., Blaszczynski et al., 1997; Crisp et al., 2000; Delfabbro & Winefield, 1996; Dickerson, Baron et al., 1994; Dickerson, Walker et al., 1994; Dickerson et al., 1996) has found that the incidence of gambling-related problems is considerably higher in lower socio-economic groups and in younger people, and it is more likely to be associated with slot machines, one of the few activities which attract similar numbers of men and women. Accordingly, understanding demographic variations in overall participation is vital if one is to estimate the likely social effects of expansion or product changes in existing gambling markets. For example, in the future, Internet gambling and new sports betting facilities are likely to attract relatively more younger men, whereas an increase in slot machines or lotteries will have a significant effect upon the number of women gambling (Griffiths, 1999a). These variations exist because not all people hold the same attitudes towards gambling nor do they have the same motivations for gambling. For example, Protestants are more likely than Catholics to regard gambling as a waste of money (Grichting, 1986), whereas people in lower socio-economic groups (regardless of religious background) are more apt to view gambling positively as a way of escaping from the drudgery of uninteresting, routine work and a way to elevate one's living standards (Furnham & Lewis, 1986). By contrast, older people gamble less than younger people; they are less concerned with elevating their position in society (Mok & Hraba, 1991) and more interested in the opportunities for socialisation and relaxation that gambling provides (Morgan Research, 1997).

Variations in gambling preferences are thought to result from both differences in accessibility and motivation. Older people tend to choose activities that minimise the need for complex decision-making or concentration (e.g., bingo, slot machines), whereas gender differences have been attributed to a number of factors, including variations in sex-role socialisation (Abt & Smith, 1984), cultural differences (Walker, 1992) and theories of motivation (Delfabbro, 2000). Specifically, the underrepresentation of women in casino games, racing and sports betting has been explained in terms of the long association between these activities and male subcultures; for example, boys' childhood and adolescent games and male gambling venues. Alternatively, as suggested by recent Australian research, it may be that women have different motivations for gambling (Loughnan, Pierce & Sagris, 1997); namely, a greater desire for relaxation and escape from worries (Crisp et al., 2000). Research by Chantal and Vallerand (1996) suggests that such motivations are more likely to be satisfied by participation in chance activities, such as lotteries, rather than more skilled activities, such as racing.

Variations in motivation are also frequently observed among people who participate in the same gambling activity (Dickerson, Walker, Legg England & Hinchy, 1990; Dumont & Ladouceur, 1990; Fabian, 1995; Griffiths, 1993). For example, slot machine and video poker players may gamble to win money, for enjoyment and excitement, to socialise and to escape negative feelings (Dumont & Ladouceur, 1990; Griffiths, 1995). Some people gamble for one reason only, whereas others gamble for a variety of reasons (e.g., Lesieur, 1984; Moran, 1970). A further complexity is that people's motivations for gambling have a strong temporal dimension; that is, they do not remain stable over time. As people progress from social to regular and finally to excessive gambling, there are often significant changes in their reasons for gambling. Whereas a person might have initially gambled to obtain enjoyment, excitement and socialisation, the progression to problem gambling is almost always accompanied by an increased preoccupation with winning money and chasing losses (Lesieur, 1984).

The importance of the structural characteristics of activities

Another factor central to understanding gambling behaviour is the structure of gambling activities. As shown by Weinstein and Deitch (1974) and Griffiths (1993), gambling activities vary considerably in their structural characteristics, including the probability of winning, the amount of gambler involvement, the amount of skill that can be applied, the length of the interval between stake and outcome and the magnitude of potential winnings. Structural variations are also observed within certain classes of activities such as slot machines, where differences in reinforcement frequency, colours, sound effects and machines' features can influence the profitability and attractiveness of machines significantly (Griffiths, 1993). Each of these structural features may (and almost certainly does) have implications for gamblers' motivations and the potential "addictiveness" of gambling activities.

For example, skilful activities that offer players the opportunity to use complex systems, study the odds and apply skill and concentration appeal to many gamblers because their actions can influence the outcomes. Such characteristics attract people who enjoy a challenge when gambling. They may also contribute to excessive gambling if people overestimate the effectiveness of their gambling systems and strategies (see discussion of cognitive theories below). Chantal and Vallerand (1996) have argued that people who gamble on these activities (e.g., racing punters) tend to be more

intrinsically motivated than lottery gamblers in that they gamble for self-determination (i.e. to display their competence and to improve their performance).

People who gamble on chance activities, such as lotteries, usually do so for external reasons (i.e. to win money or escape from problems). This was confirmed by Loughman et al. (1996) in a clinical survey of problem gamblers wherein racing punters emphasised the importance of skill and control considerably more than slot machine players. Although many slot machine players also overestimate the amount of skill involved in their gambling (e.g., Walker, 1992), other motivational factors (such as the desire to escape worries or to relax) tend to predominate (Walker, 1985). Thus, excessive gambling on slot machines may be more likely to result from people becoming conditioned to the tranquilising effect brought about by playing rather than just the pursuit of money. On the other hand, racing punters tend to be more likely to gamble for excitement (Blaszczynski, McConaghy & Winter, 1986). This has important implications for the psychological study of ongoing gambling behaviour.

Another vital structural characteristic of gambling is the continuity of the activity; namely, the length of the interval between stake and outcome. In nearly all studies, it has been found that continuous activities (e.g., racing, slot machines, casino games) with a more rapid play-rate are more likely to be associated with gambling problems (Dickerson, 1989; Dickerson, 1995; Dickerson et al., 1996; Griffiths, 1995; Walker, 1992; Walker & Dickerson, 1996). The ability to make repeated stakes in short time intervals increases the amount of money which can be lost and also increases the likelihood that gamblers will be unable to control spending (O'Connor, Dickerson & Phillips, 1995). Such problems are rarely observed in non-continuous activities, such as lotteries, in which gambling is undertaken less frequently and where outcomes are often unknown for days. Consequently, it is important to recognise that the overall social and economic impact of expansion of the gambling industry will be considerably greater if the expanded activities are continuous rather than non-continuous.

Theories of gambling behaviour

Although sociological, situational and demographic factors can explain why some people are more likely to gamble than others, these theories cannot explain why some people gamble more than others or what factors contribute to behaviour maintenance in gambling. Psychological theories become

important at this level. Research in this area is remarkably diverse. Almost every major branch of psychology (e.g., cognitivism, behaviourism, Freudian theory, addiction theory), has been utilised in an attempt to understand gambling. Despite this, it is possible to distinguish two broad, general perspectives: first, theories that attribute ongoing behaviour and excessive gambling to habitual processes which are the consequences of gambling; second, theories that state that variations in behaviour result from variations in the characteristics, or "make-up," of individual gamblers. In other words, whereas the first places a stronger emphasis upon psychological determinants of gambling, the second emphasises biological differences between individuals.

Central to psychological explanations is the idea that every person who gambles has the potential to become a problem gambler. This is because gambling activities are difficult to resist by their very nature: excitement, risk-taking and the possibility of monetary gains. The more a person gambles, the more difficult it becomes to resist the temptation to commence a gambling session or stop once gambling has commenced (Dickerson, 1989). Accordingly, it has been suggested that there is no neat distinction between problem gambling and normal gambling; rather there is a continuum from social gambling to "regular" gambling to problem gambling.

People who gamble regularly may display many of the same behaviours as people with gambling problems, although to a lesser degree. This view gives rise to conceptualisations of problem gambling that emphasise the developmental and habitual nature of problem gambling behaviour rather than individual pathology. This perspective avoids terms such compulsive, addiction or pathology in preference for terms such as impaired control (O'Connor et al., 1995). Although researchers' views differ concerning the psychological mechanisms behind loss of control, three general classes of theory will be used to illustrate the limitations of psychological accounts. They are behaviourist theories that explain persistent gambling as a conditioned process; need-state models that see gambling as a form of psychological or physiological dependence; and cognitive theories that attribute excessive gambling to erroneous beliefs about the potential profitability of gambling.

Behaviourist Approaches

Both classical and operant conditioning principles have been applied to the study of gambling. In operant explanations for problem gambling (e.g., Delfabbro & Winefield, 1999a, 1999b; Dickerson, Hinchy, Legg England, Fabre & Cunningham, 1992), persistent gambling is seen as a conditioned behaviour maintained by intermittent schedules of reinforcement, most likely a variable-ratio schedule. This involves the provision of infrequent rewards after

varying numbers of responses. On the other hand, proponents of classical conditioning models (e.g., Anderson & Brown, 1984) argue that people continue to gamble as a result of becoming conditioned to the excitement or arousal associated with gambling, so that they feel bored, unstimulated and restless when they are not gambling. Both the classical and operant perspectives have been central to the development of measures of "impaired control" over gambling (Baron, Dickerson & Blaszczynski, 1995) and clinical interventions using desensitization, aversive conditioning and satiation techniques (see Griffiths, 1995, for a review). In each of these examples, it is assumed that the more a person gambles, the more his or her behaviour is dictated by factors beyond the person's control.

Despite evidence supporting both theories (see Griffiths, 1995; Walker, 1992), neither is entirely satisfactory on its own. Classical conditioning theory seems useful to explain people's motivation to commence a gambling session, but appears less useful to explain persistent gambling behaviour. Conversely, while operant conditioning might explain ongoing behaviour, it appears less useful in explaining why people commence gambling or recommence gambling after a prolonged period of abstinence (Walker, 1992). Researchers have also raised questions about the extent to which gambling behaviour adheres to operant theory at all, since gamblers lose more than they win and because reinforcement magnitudes are not independent of player responses, e.g., stake sizes (Delfabbro & Winefield, 1999a; Griffiths, 1999b). Nevertheless, the importance of subtle variations in machine characteristics upon behaviour (Griffiths, 1993) reinforces the role of operant conditioning in the maintenance of behaviour, although perhaps in more subtle ways than was envisaged.

It is important to recognise that these theories cannot stand in isolation. As with other psychological theories, conditioning theories cannot explain why people exposed to similar stimuli respond differently; why some gamble whereas others do not or why some people gamble more than others. In addition, the effectiveness, or strength of the conditioning effect may be a function of motivational factors and type of activity. Some, but not all, people gamble for excitement or relaxation, and as discussed above, people satisfy these needs by different activities (Blaszczynski, McConaghy et al., 1986). Thus, it is unlikely that classical conditioning will affect all types of gambling or gamblers. Similar difficulties plague attempts to develop general operant theories of gambling. Some activities appear to suit this form of explanation more than others. Examples include slot machines and scratch tickets where there is a short time interval between stake and outcome, and where outcomes are entirely determined by chance. It seems more difficult to apply these principles to skilled gambling games such as blackjack, poker and sports betting, where player decisions can significantly influence outcomes.

Need-State Models and Theories of Addiction

Much of the discussion relating to classical conditioning also applies to need-state theories of gambling, which assume that people gamble to escape unpleasant feeling states such as anxiety, depression and boredom. These perspectives have been applied to all facets of gambling, including involvement, ongoing behaviour and excessive gambling. They are incorporated into the DSM-IV classification for pathological gambling (i.e. gambled as a way of escaping from problems or intolerable feeling states). Although not all researchers agree that these motivations signify the existence of a physiological addiction (Walker, 1989), most agree that people can become psychologically addicted to gambling.

The concept of arousal has been studied most extensively (e.g., Anderson & Brown, 1984, 1987; Brown, 1986; Dickerson et al., 1992; Griffiths, 1995) but results have not been consistent. Arousal increases have been observed in some studies, but not in others (see Griffiths, 1995, for a review), and most increases have been relatively small. Variations in arousal have neither co-varied reliably with the persistence of behaviour (Dickerson et al., 1992) nor the onset of gambling sessions. Furthermore, Walker (1992) questioned the explanatory value of arousal theories arguing that the excitement of gambling is unlikely to be independent of people's desire to win money.

Similar problems have plagued attempts to associate gambling with anxiety and depression. While a considerable number of studies (e.g., Bergler, 1957; Blaszczynski & McConaghy, 1989; Blaszczynski, McConaghy & Frankova, 1990; Dickerson, Cunningham, Legg England & Hinchy, 1991; 1992; Greenson, 1947; McCormick, Russo, Ramirez & Taber, 1984; Moran, 1970) have revealed that negative mood states commonly accompany gambling or predict the duration of gambling sessions (Dickerson et al., 1991), most analyses have been confined to problem gamblers and high-frequency gamblers. For this reason, it is unclear whether these mood states are also associated with less frequent gambling. Moreover, it is not possible to determine whether mood states precede or arise as a consequence of gambling. Indeed, as Walker (1992) points out, it may be that gamblers become depressed as a result of losing more money than they can afford.

Again, the temporal dimension suggests that the role of mood states is unlikely to be independent of the gambler's characteristics. As with arousal, it is unlikely that avoidance of negative feeling states will be common to all activities or all gamblers. Blaszczynski, McConaghy et al. (1986) suggested that some activities satisfy these needs more than others; for example, slot machines appear to reduce anxiety, whereas racing provides arousal and excitement. In addition, variations in gambling motivation among participants

involved in the same activity suggest that not all people gamble to satisfy unfulfilled needs. It is also unclear why some people apparently have a greater need for arousal or relaxation than others, and whether this would be sufficient to explain differences between normal and excessive gambling? As suggested by McCormick et al. (1984), it is important to place behaviour in a social context to understand how gambling compensates for, or assuages, problems or deficits experienced in other areas of life. Alternatively, as will be suggested later in this paper, it may be useful to look for dispositional or biological differences to explain the varying motivations and behaviour of individual gamblers.

Cognitive Theories

Despite the fact that the odds of almost all activities are weighted strongly in favour of the house, gamblers continue to believe they can win money from gambling (Walker, 1992). This observation leads to the conclusion that gambling may be maintained by irrational or erroneous beliefs. For example, people overestimate the extent to which they can predict or influence gambling outcomes and tend to misjudge how much money they have won or lost. This hypothesis has been confirmed in numerous studies (e.g., Langer, 1975; Langer & Roth, 1983) showing that people overestimate the degree of skill or control which can be exerted in chance activities, and also, studies using the so-called "thinking aloud" method (see Gaboury & Ladouceur, 1988), which reveal high levels of irrationality in verbalised statements made during gambling sessions. These findings have been confirmed not only under laboratory conditions (e.g., roulette: Gaboury & Ladouceur, 1988; Ladouceur & Gaboury, 1988; Ladouceur, Gaboury, Dumont & Rochette, 1988) but also in ecologically valid gambling settings, using "regular" gamblers (video poker: Ladouceur, Gaboury, Bujold, Lachance & Tremblay, 1991) and in various countries (e.g., slot machines in the United Kingdom: Griffiths, 1994a; slot machines in Australia: Walker, 1992).

Based upon these findings, it has been suggested that irrational thinking may be related to problematic gambling behaviour (Ladouceur & Walker, 1996; Wagenaar, 1988), with persistent behaviour thought to be the result of people's overconfidence in their ability to win money (Griffiths, 1994a; Wagenaar, 1988; Walker, 1992). Evidence suggests that problem gamblers frequently overestimate the amount of control and skill involved in gambling (Loughnan et al., 1997). Unfortunately, these observations have also been made using students with no gambling experience (e.g., Ladouceur et al., 1988, 1991) indicating that irrational beliefs are not positively related to level of gambling involvement. A further problem is that irrationality does not appear to co-vary with other observable facets of gambling; for example, the level of risk-taking (Ladouceur & Gaboury, 1988) or reinforcement frequency

(Ladouceur et al., 1988). Alternatively, where irrationality positively relates to involvement, few differences in behaviour have been observed. Consequently, Dickerson and Baron (2000) have concluded that irrational thinking is probably more a reflection of demand characteristics than a rational underlying behaviour. A lot of what people say may only result from the difficulty of trying to come up with rational, meaningful statements in chance-determined situations.

In additional to these conceptual difficulties, it is also possible that contextual factors play a role in cognitive research. For example, Griffiths (1994a) found that regular players had greater difficulty than occasional players in verbalising their thoughts while they were gambling. Regular players seemed capable of gambling without attending to what they were doing, suggesting: (a) that cognitive processes did not play a major role in the maintenance of their behaviour, or (b) that the original justifications or rationales for behaviour were less accessible. In either case, Griffiths' observations suggested that temporal factors (namely, how long a person has been gambling) appear to be important. Therefore, all other things being equal, it appears that valid comparisons cannot be drawn between gamblers with differing levels of gambling experience; for what holds for infrequent gamblers might not hold for regular players, and vice versa.

Similar problems arise when combining samples of people who may or may not have similar motivations for gambling. Cognitive approaches assume that people overestimate their chances of winning because obtaining money is an important motivation for their gambling. However, as is clear from the previous discussion, not all people gamble for this reason. Moreover, as shown by Burger and Cooper (1979) and Burger and Smith (1985), the way in which people respond to or interpret gambling tasks may vary according to their level of control motivation. People who for whatever reason, are more motivated to seek control in their lives appear more prone to overestimate the extent to which they can influence the outcomes of chance-determined activities. Accordingly, variations in control motivation in cognitive studies of gambling would be an additional, and uncontrolled source of within-sample variation, which could influence the reliability of the statistical effects observed.

Finally, it is again important to observe that cognitive theories need to take structural variations in activities into account. Many cognitive processes thought to underlie gambling behaviour (e.g., overestimations of control, biased attributions) are more likely to be observed when activities are perceived as having some skill component (Langer, 1975). With some activities, there is a genuine possibility for skilful play (e.g., racing, blackjack, table poker). The more people play or know about these activities, the greater

their awareness of the skills involved. Thus, beliefs about control and skill are neither completely irrational nor consistent across players. Instead, in these situations, researchers must examine the quality of play; for example, to what extent the person adheres to optimal strategies, rather than look for evidence of irrational thinking (e.g., Keren & Wagenaar, 1985).

Even in activities where outcomes are chance-determined, there are likely to be variations in the extent to which gamblers' perceive that the outcomes are solely chance-determined (e.g., roulette and craps are probably more likely to be perceived as skilful than Australian slot machines because of the greater complexity of the rules and the possibility for variations in playing strategy). Therefore, it may be ineffective to compare results across studies using different chance activities without controlling for variations in perceived skill.

Biological and Dispositional Theories

Social and psychological explanations are insufficient to explain the full complexity of gambling behaviour. Whether ongoing behaviour is explained in terms of behaviourism, need-state models or cognitive theories, it remains unclear why one person gambles more heavily than another. In other words, while it seems likely that increased involvement with gambling is likely to contribute to loss of control over behaviour, development of irrational beliefs and greater psychological dependence, it is important to determine what makes some gamblers more susceptible to these factors than others. It is here that research into biological and personality factors becomes important. Central to this research is to ascertain whether pathological gamblers possess qualities which would predispose them to excessive gambling. Much of this literature was summarised by Walker (1992), so this discussion is confined to three research areas: whether problem gamblers are particularly disposed towards developing an addiction; whether they have a greater need for arousal; and whether gamblers are naturally more impulsive than non-gamblers.

Studies into the first question have been undertaken by examining overlaps between potentially addictive and problematic behaviours with alcohol, illicit drugs and gambling. This includes research into problem gamblers with psychoactive substance abuse problems (e.g., Ramirez, McCormick, Russo & Taber, 1984; Linden, Pope & Jonas, 1986; Ciarrocchi & Richardson, 1989) or those who also have drug or alcohol use problems, or both (e.g., Lesieur, Blume & Zoppa, 1986; Lesieur & Heineman, 1988; Griffiths, 1994b, 1994c). The incidence of cross-addictions in populations of pathological gamblers has been cited as evidence for the existence of an addictive personality type (Blaszczynski, 1996). In addition, research by Comings et al. (1996), for example, has suggested a genetic basis for gambling in some people. They

reported that a variant of the dopamine D2 receptor gene (DRD2), which has been associated with other addictions, including alcoholism, was found in 51% of pathological gamblers compared with only 26% of controls. The effect of this gene was more closely associated with pathological gambling than any other addiction. This suggested that the genetic variants of the DRD2 gene may play a significant role in pathological gambling, which supports the concept that variants in this gene are an important risk factor for addictive behaviours.

Although intriguing, such evidence does not provide convincing evidence for the existence of a biological basis for gambling addiction. For a start, many pathological gamblers do not have other addictions (Blaszczynski, 1996). Moreover, as Comings et al. (1996) show, only half of the problem gamblers possessed the so-called "gambling gene," suggesting that this gene is not a necessary factor in the etiology of gambling addiction. Finally, researchers (e.g., Blaszczynski, 1996; Walker, 1989) have questioned the notion of physiological addiction altogether, arguing that there is very little evidence to support the applicability of traditional addiction models to gambling. Gamblers rarely experience cravings, withdrawal symptoms or tolerance in the traditional addictions sense, suggesting that excessive gambling is more likely to arise as a result of other processes. If the term "addiction" is to be used at all, it is better used in a general sense to denote a condition broadly characterised as a repetitive and uncontrollable behaviour that has undesirable consequences for individuals and those around them (Griffiths, 1995).

Secondly, attempts have been made to associate gambling with an excessive desire for arousal or risk-taking. For example, Brown (1986) has hypothesised that pathological gamblers are habitually underaroused or understimulated and need gambling to reach an optimal level of arousal. However, the available evidence offers little support for this notion. While studies by Wolfgang (1988) and Anderson and Brown (1984) have shown that regular gamblers tend to score higher on measures of sensation-seeking than controls, other studies have failed to find any associations at all (Allcock & Grace, 1988; Ladouceur & Mayrand, 1986), or paradoxically, studies have found that problem gamblers tend to score lower than population norms on the sensation-seeking scale (Blaszczynski, Wilson & McConaghy, 1986; Blaszczynski et al., 1990; Dickerson, Hinchy & Fabre, 1987). This has been attributed to the fact that problem gamblers tend to engage in a very limited range of activities compared with other people, which limits the number of items endorsed (their scores) on the sensation-seeking scales. Consequently, it seems unlikely that this variable provides a reliable basis for distinguishing problem gamblers from other gamblers.

Thirdly, researchers have tried to associate excessive gambling with the inability to control impulses. This notion was central to the development of the first psychiatric definition of gambling in the DSM-III (American Psychiatric Association, 1980), which classified pathological gambling as a form of impulse disorder, not unlike compulsive stealing (kleptomania) and hair-pulling (trichotillimania). Gamblers were hypothesised to have experiences characteristic of other recognised impulse disorders, such as, physical and psychological tension prior to the commencement of gambling and to experience a strong sense of pleasure or release once the activity had commenced (McGurrin, 1992). Implicit in this explanation was the idea that gambling was unplanned, or involuntary, and highly repetitive.

Despite the inconsistency of psychometric evidence on this topic (Allcock & Grace, 1986), clinical observations suggest that a loss of control is common to problem gambling (Blaszczynski & McConaghy, 1989; Carlton & Manowitz, 1987; McCormick, 1994;). Researchers have argued that there are similarities between problem gambling and children with attention deficit disorder (ADD) (Goldstein, Manowitz, Nora, Swartzburg & Carlton, 1985), in that both are characterised by limited attention spans, impulsive behaviour, inability to delay gratification and insensitivity to punishment. Carlton et al. (1988) confirmed this by administering a modified ADD scale to a sample of 16 problem gamblers and found that they scored significantly higher on ADD items than a control group. This suggested the possibility that ADD during childhood may be an antecedent to the development of gambling problems in adulthood. Recent psychobiological evidence suggests that such traits can be directly linked to deficiencies in the production of certain neurotransmitters thought to be associated with impulse control. One of these substances is serotonin (5-hydroxtryptamine: 5-HT), which has an inhibitory effect upon the cortex and is associated with more controlled behaviour (McGurrin, 1992). It has been found that decreased 5-HT levels are associated with heavy alcohol consumption (Branchy, Shaw & Leiber, 1981), whereas higher levels increase the likely effectiveness of alcohol treatment programmes (Naranjo, Sellers & Lawrin, 1986). McGurrin (1992) and Griffiths (1995) have argued that this substance may also play a role in the development of problem gambling.

The question that remains, however, is how researchers will ascertain the direction of causality; namely, whether decreased 5-HT levels are the result, or cause, of excessive gambling. This problem extends to all attempts to draw associations between dispositions and gambling behaviour. This indicates the importance of a temporal dimension in gambling. Since gambling is likely to influence the characteristics of gamblers, it may be unwise to assume that observations of one sample can be generalised to other samples of gamblers with different levels of gambling experience.

Physiological accounts assume that such factors should override other environmental or contextual factors and allow for the development of a general theory of gambling addiction. However, this is clearly not so. Apart from the conceptual difficulties associated with determining a causal relationship between characteristics and behaviour, these theories are unable to account for the full diversity of gambling patterns and behaviour. They fail to explain demographic differences in the preference for activities and variations in motivation. Neither can they explain why some activities are more "addictive" than others and why the structural characteristics of specific activities (e.g., slot machines) can influence behaviour. Therefore, it appears that excessive gambling is likely to result from both dispositional and psychological factors and the complex interaction between them. Psychological explanations must play a role because of the obvious importance of external factors (e.g., environmental and situational variables) in the development of gambling habits. However, it is also clear that internal factors influence how certain individuals respond to these situations. The implications of this observation for the study and treatment of problem gambling are discussed below.

Conclusions and Implications for Research and Interventions

In summary, it seems that gamblers are first influenced by sociological factors; for example, the availability of gambling opportunities, attitudes and habits of parents, friends and peer groups as well as a lack of alternative activities. During the middle stages of development, there are many factors which heavily influence the maintenance of gambling behaviour. Three of these factors are schedules of reinforcement, the "escape" qualities of gambling and cognitive biases, all of which have been summarised in this paper. While it remains unclear exactly how some people come to gamble excessively, it is agreed that persistent gambling eventually leads to a desperate "spiral of options" (Lesieur, 1984) where gambling is largely maintained by the desire to win money, recover losses and pay back debts. Gambling is thus a complex, multidimensional activity that is unlikely to be explained by any single theory. Instead, this research is best served by a biopsychosocial model that stresses the individual and idiosyncratic nature of the development of gambling problems and emphasises the role of contextual factors internal and external to the process of gambling itself.

Recognition of this complexity has important implications for gambling research both in terms of the selection of samples and data analysis. Firstly,

the existence of structural variations in activities suggests that results obtained using one activity cannot be generalised to other activities that are not structurally equivalent. Existing research suggests that continuity and the element of skill involved are two factors that must be similar in order for valid comparisons to be made. Secondly, studies of gambling motivation are unlikely to be valid unless both individual and situational factors are taken into account. Since motivations differ across demographic groups (e.g., different genders and ages), across activities and over time, studies must ensure that these factors are controlled before drawing conclusions. Samples should contain equal numbers of men and women of a similar age with similar levels of gambling experience. Alternatively, in situations where this cannot be achieved, gender, age and experience should be used as co-variants, or as the first variables in regression analyses.

Thirdly, in recognition that personality may influence the strength of experimental effects, it is important that researchers match comparison groups in terms of these variables. For example, cognitive experiments investigating the illusion of control should include measures of "desirability for control" (Burger & Cooper, 1979), whereas arousal experiments should include measures of gambling motivation. In addition, researchers should not assume that biological differences or psychological factors will explain all gambling behaviour. Instead, it may be useful to explore the interaction between these different levels of analysis; for example, by examining whether variations in the structural characteristics of activities (e.g., reinforcement frequency) affect people with, or without, the characteristic under observation.

Implications for Prevention, Intervention and Treatment

Since sociological factors appear to be critical in the acquisition of gambling behaviour, prevention needs to be aimed at the social and situational antecedents. This can be approached from a number of levels (e.g., societal, school, family, individual, etc.), some of which may be more practical than others. Since problem gamblers start gambling at a significantly earlier age than non-pathological gamblers, an obvious step would be for governments to legislate against young people gambling (i.e. below 18 years of age). A "blanket ban" on gambling would, in most cases, reduce acquisition until at least late adolescence. Both parents and peers may model gambling; therefore, the family's role in maintaining gambling behaviour should be addressed in therapy and prevention plans should aim to increase the gambler's contact with non-gambling peers. Also, evidence or knowledge of a

gambler's own negative thoughts or feelings about gambling behaviour, and irrational biases may provide useful cues for behaviour modification (Stumphauzer, 1980).

These findings have led to suggestions to enhance educational awareness of the dangers of gambling not only amongst children and adolescents but also parents, guardians and teachers. Although recommendations of this nature have typically tended to focus upon the need for greater awareness of the "true" odds and the unprofitability of gambling, we believe that this approach needs to be applied with caution. It is quite possible for education to have the opposite effect; namely, to increase students' knowledge of how to gamble. In addition, it is questionable whether knowing the true odds has a significant effect upon dissuading people from gambling, given that many problems gamblers are well educated and have, in some cases, some knowledge of basic mathematics. For many, the belief that they are inherently lucky or different from others helps maintain their interest in gambling. Accordingly, educational campaigns that focus upon the negative consequences of gambling and alternatives to it may have greater success. While these sorts of campaigns are unlikely to prevent gambling in all young people, they might reduce (a) the total number of adolescents who start to gamble and (b) the amount of time an adolescent spends gambling.

The fact that some gamblers are socially rewarded for gambling cannot be altered directly, but more adaptive personal and social skills can be taught as responses to stress (i.e. emotional antecedents); for example, relaxation, assertion and social skills training (Stumphauzer, 1980). Alternatively, where people seek the company of other gamblers as a way to escape from unpleasant feeling states or life stress, the development of alternative interests, hobbies and social networks should be afforded priority during intervention. This approach could also be extended to people who gamble alone. An essential aspect of treatments should be to identify and address the factors that are antecedents to gambling, those that provide the underlying motivation and social and cultural context in which the behaviour has developed. Only when these are addressed can treatments be extended to more specific psychological aspects of the behaviour itself. This is because these broader social and structural factors influence a person's exposure to gambling, their opportunities to gamble and their ability to recover. Detailed analysis of the person's daily schedule and the nature and extent of available social supports is essential during this phase of treatment.

Viewing problem gambling as a biopsychosocial process recognises the diversity of psychological factors involved in maintaining the behaviour as well as the fact that problem gamblers are not a homogeneous group; in fact, there appear to be a number of subtypes. This has major treatment implications.

For instance, Griffiths (1995) outlined two very different types of gamblers. The first type appeared to be addicted to gambling itself and played to test skill, gain social rewards and mostly, for excitement (i.e. the "buzz" or "high"). This was termed a "primary addiction" and appears to be a mixture of Moran's (1970) "subcultural" and "impulsive" types of gamblers. Identifying the environmental, situational or emotional factors that precede a gambling session would be next stage in the intervention. The use of imaginal desensitization, counterconditioning and situational exposure are methods, which have been used to teach people to resist the urge to gamble. Of course, therapists differ in their view concerning the factors underlying this urge. Whereas some emphasise the learned or conditional quality of the behaviour and emphasise the role of stimulus-control, others may emphasise irrational beliefs or the person’s desire to obtain physiological stimulation from the activity.

Furthermore, as emphasized by Griffiths (1995), a second type of gambler may gamble for the reasons described earlier, such as escape. These gamblers are usually depressed and socially isolated, and could be described as having a "secondary addiction" in that the player uses gambling as an escape from a primary problem (e.g., broken home, relationship crisis, etc.). It seems that this type of "escape gambler" is not confined to the United Kingdom. This type appears to be a mixture of Moran's (1970) "neurotic" and "symptomatic" types. If the primary problem is resolved by excessive gambling, then playing should disappear. This distinction obviously has clinical usefulness and may also help explain conflicting research, some of which states that gambling is a social activity and some of which states that it is a solitary activity. As discussed above, such gamblers are likely to benefit from any intervention that tries to find alternative activities that take the place of gambling.

Conclusions

Examining gambling and problem gambling as a biopsychosocial behaviour makes it evident that individual differences and broader contextual factors must be considered and not ignored. This paper provides evidence that a narrow focus upon one theoretical perspective in research and clinical interventions may, in many cases, not be justified. Such an approach fails to consider the interrelationships between different levels of analysis. It would be of limited value to many gamblers whose problems have a different etiology, which may be multifaceted. As Gambino and Shaffer (1979) pointed out over two decades ago, individuals are self-determining agents, and therefore, a taxonomy of situations must be developed to describe the vast majority of contexts and conditions in which people use substances or engage in habitual behaviours to alter their perceived experience.

They also make the important point that these behaviours are not completely self-developed or understood by the people themselves and should be examined more broadly. This is because, gambling becomes a habitual behaviour. Since the perceived experience of the individual can change over time, it is possible that focusing upon the self-reported factors currently maintaining the behaviour does not provide insights into the factors that led to the behaviour developing. Thus, when one takes a biopsychosocial view, it becomes possible to perceive the individual gambling in terms of its broader social and cultural context. This approach also suggests that different perspectives and approaches may be beneficial, so long as they appear to apply to the particular gambler concerned. Moreover, it indicates that a variety of treatments could be beneficial simultaneously.

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The Effect of Skilled Gamblers on the Success of Less Skilled Gamblers

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Abstract

This paper uses computer simulations to examine the effect of highly skilled gamblers on the success of moderately skilled gamblers. It shows that

skilled players negatively impact the outcome for less skilled players. A player's winnings are not only affected by the house rake or vigorish but also by the skill of other players. It is concluded that less skilled players are often better off playing a game of chance than a game of skill.

It is our contention that professionals in the field of gambling studies can gain a great deal of insight into problem gambling by closely examining the games gamblers play. The purpose of this article is to examine some differences between games that involve some skill and those that involve only chance in order to help treatment and prevention workers understand the dynamics of these games. For example, understanding the nature of the game and its effects on the individual gambler can help a therapist understand a client's motives and beliefs, which may facilitate a more individualized, client-centered approach to the treatment.

Gambling games can be divided into two categories: games of chance, such as lotteries, keno, craps, roulette, baccarat, bingo and slots; and games of skill, such as horse race betting, sports betting, poker and blackjack. For example, playing bingo requires perceptual and motor skills, but winning is purely a matter of chance. In contrast, winning at poker is dependent on skills relative to the other players. The number of skills involved and the long-term prospects of financial return vary for each type of game. In Hold'em poker, skilled players can make a decent living (Warren, 1996), but in poker games played against the "house," such as Caribbean Stud Poker, players cannot beat the house edge, regardless of how skilled they are (Cardoza, 1997). Players of games based on skill are more likely to be male, with the exception of horse racing, and more likely to be younger (Kelly et al., 2001).

The relationship between skill and problem gambling is particular interesting. According to data on problem gambling treatment collected in Ontario, just over 40% of gamblers in treatment list a game of skill as their major area of concern (Rush & Shaw-Moxam, in press). Several researchers have noted that problem gamblers often have an inflated sense of their own skill (Gadboury & Ladouceur, 1989; Toneatto, Blitz-Miller, Calderwood, Dragonetti & Tsanos, 1997). Are problem gamblers who play games of skill simply unskilled players? An alternative view is that some of the "skilled" gamblers in treatment might actually be skilled but not be as skilled as other players.

Books on how to gamble successfully often portray games of skill as games in which the player has a chance of winning in the long run (e.g., Warren,

1996; Patterson, 1990). However, the mixed skills of gamblers playing these games affect the outcome for every player. Against novices the first author (Nigel), can play a successful game of poker, but against experienced players, he most often loses. The second author (Barry) fairs somewhat better against good players. The goal of this paper is to measure how skilled players affect the success of less skilled players, so that the dynamics of a game of skill can be understood.

Method

The goal of this paper is difficult since it often takes thousands of games to accurately measure skill in gambling. Furthermore, tracking enough gamblers for a sufficient amount of time is time consuming and probably not possible (casinos don't like people researching on their property). Consequently, this paper relies upon simulations.

Two games are compared: roulette (see Wong & Spector, 1996) and Hold'em poker (see Warren, 1996). One hundred thousand simulations on both poker and roulette were conducted. Conducting these simulations at exactly the same skill level is not particularly realistic because players do improve (and sometimes get worse). However, applied to the current moment in time, these simulations allow us to get an accurate estimate of a player's level of skill and their expected financial return.

Roulette is a game in which a little ball is thrown around the edge of a spinning wheel. A player places a bet on one of the 37 (or 38) numbered slots that they think the ball will land on. There are many betting options available.

Hold'em poker is a popular casino poker game where as many as 10 players can play at the same time. Players play against each other while the dealer merely deals the cards and handles the money. Each player is given two cards face down; the remaining cards are community cards that are dealt face up in the middle of the table. Players make their hands by creating the best five-card combination of their own two cards and the community cards. There are four rounds of betting. For the poker simulation, Wilson's Software Turbo Texas Hold'em was used.

Turbo Texas Hold'em is an elaborate program that allows players to teach themselves the game. In addition to basic playing instructions, the game provides extensive statistics on how players play as well as how the other characters play. The opponents in this game are not random; they have

programmed profiles that react to the many specific poker situations that they might encounter. These profiles are designed to match the types of players one might meet around an average poker table —they have names that are amusing and relevant.

The game comes with 40 pre-designed profiles. Player profiles can vary from "tight" (folds most hands) to "loose" (stays in most hands) to "passive" (checks or calls, but rarely bets or raises) to "aggressive" (often bets or raises). Specific types of players such as "loose but aggressive," or "tight but passive" can be selected, and opponents can learn how to counter their styles. Players can also create their own characters. More to the point, players can set up a line-up of characters and then run a high-speed simulation to determine the long-term outcome of various strategic moves.

In the context of poker, an operational definition of skilled play means that players adjust their play to their position in the hands (i.e. Are they first or last to bet?); they gauge the odds of making a particular hand compared to the size of the pot (the "pot odds"); they try and figure out their opponents hands by "tells" and betting patterns, and usually tend to play tight and aggressive, but must occasionally vary their play by bluffing (loose) or checking (passive) in order to avoid giving away their strength (see Warren, 1996, for details).

Three simulation studies were conducted.

Study 1

Poker

First, a line-up was constructed using an average player, a player that was neither particularly good nor bad, nor tight or loose —but fairly aggressive. This profile is called Igor (by the company's software). To see the normal spread of scores when only average-skilled players were involved, Igor was copied 10 times into the line-up. That is, Igor played against nine other copies of Igor. The game played was 10-20 Hold'em, where a blind bet (a forced bet for the first two players) and the first and second rounds of betting are in $10 increments, and the third and forth rounds ("turn" and "river") are in $20 increments.

The "rake" is the casinos way of making money. They take a percentage of each pot as profit or charge a per hour fee. The rake in casino card rooms varies from 3% to 5%. We selected 5%. The simulation data did not include

the rake, so we had to estimate the effect of the rake on each player's net balance, which was based on the average size of pots and the number of pots won.

In real life, the rake is taken off in fixed amounts (e.g., $1, $2, etc.) and is capped at a maximum (e.g., $4). Thus, sometimes the rake is more than 5%, while other times it is less. In this simulation, the rake is an exact percentage from each hand. This inaccuracy somewhat overestimates the size of the rake, but does not otherwise affect any of the conclusions that we draw from the data.

Roulette

Roulette was much easier to simulate than poker because there are few decisions to make. One of the difficulties was to determine how to create a roulette simulation that would produce the same range of scores as a poker game. To do this we first conducted 100,000 simulations of poker and obtained from the program the average investment per hand ($14.80) and average winning pot size ($86.40). It was then determined that the closest roulette bet to these numbers was a $15 bet on a "six line" or "double street" that pays 6 for 1 (i.e. returns $90).

The double street is a group of six numbers that are together on the betting table (e.g., 4, 5, 6, 7, 8, 9) but may be scattered around the wheel. The player wins if the ball lands on any of these six numbers. Poker bets, however, vary from zero to hundreds of dollars. To mimic this situation, the roulette bets were varied from $0.50 to $30, averaging at $15. A rake of 5% on a poker game would produce a house edge in poker of about 2.7%.

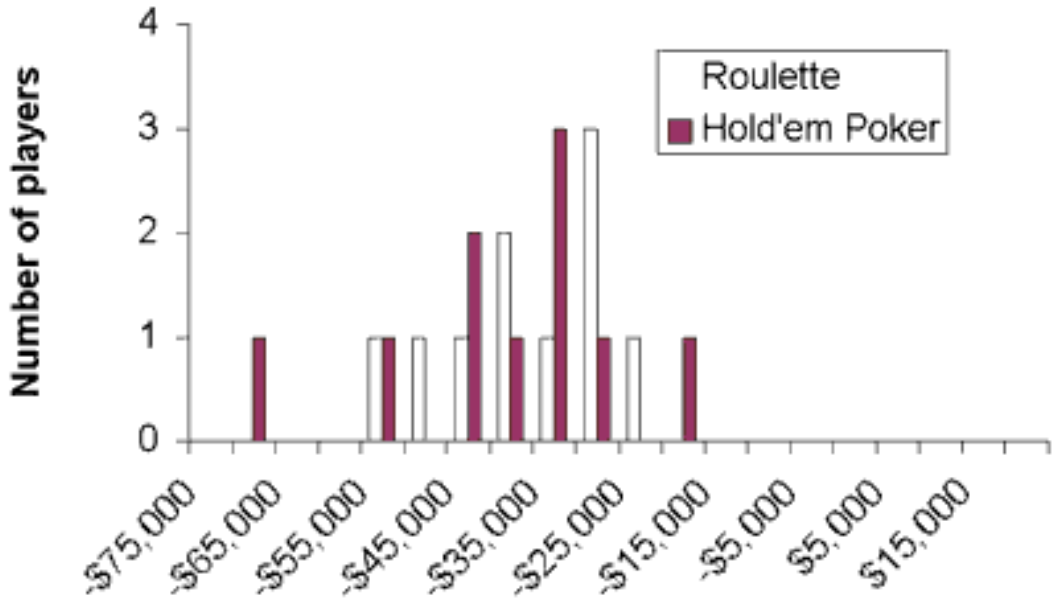
To get the equivalent edge in roulette we used the parameters of the European wheel, (one zero), which is available in Europe, Quebec and a small number of casinos in Las Vegas and has a house edge of about 2.7%. These parameters were programmed into a quick basic program similar to Turner's (1998), and then the simulation was run.

Results

Figure 1 shows a comparison of the two games. The poker range is similar, $t(18) = .45$, ns, but includes both lower and higher scores due to the greater variability of the bets. Since all 10 poker players were matched in skill, all of

the variation in their outcomes is random. That is, when a group of players are up against players of equal ability, the net outcome is random, and in the long run, only the casino wins.

Figure 1: Distribution of outcome after 100,000 spins/hands of roulette and poker.



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Study 2

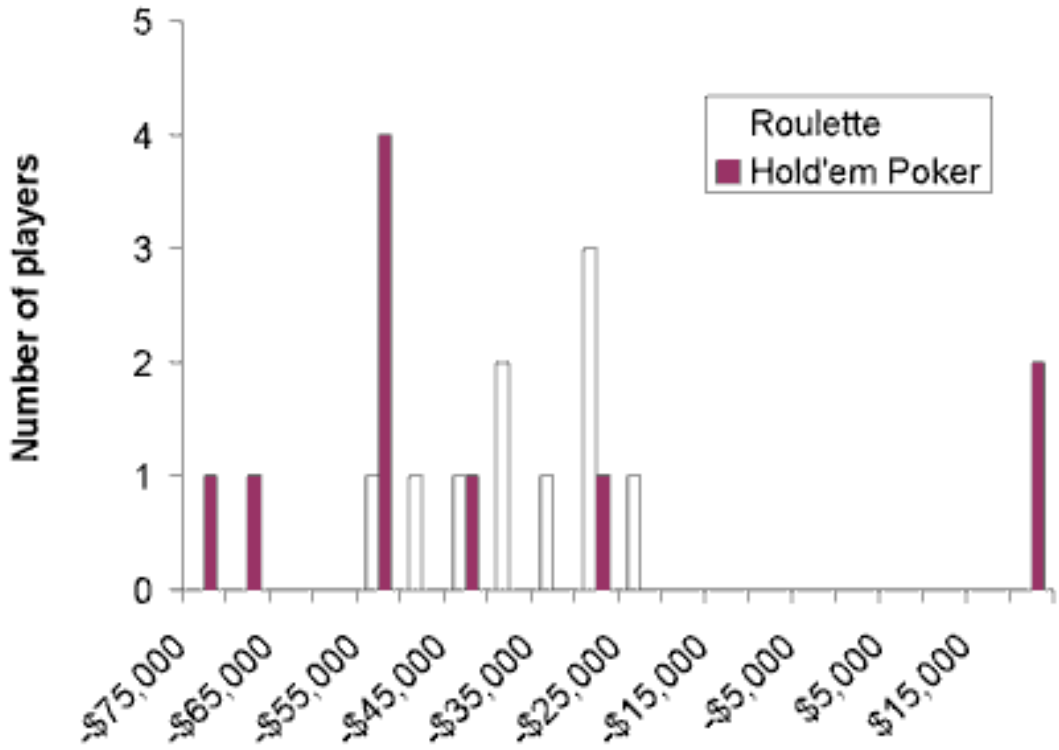
A second poker simulation was conducted where two more skilled poker players were introduced: (1) Tricky Dicky, a tight player who "slow" plays (i.e. checks acting as if he has a poor hand then raises, a strategy that is particularly effective against loose players), and (2) Advisor T., who plays "pump it or dump it" (i.e. if the hand isn't good enough to raise, he folds it, which is effective against tight players). Both of these players are tight, but they vary their strategy depending on circumstances. The roulette data is the same as the first simulation since skilled roulette play is not really possible.

For comparison, additional simulations for poker were conducted where the number of skilled players varied from 20% to 80%. Simulations were also run where even fewer skilled players were added to the mix.

Results

Figure 2 shows a comparison of the two games. The poker range is now very different from the roulette range. The two skilled players have scored large wins, while the remaining eight average-skilled players ("Igors") have racked up large losses. Since the eight average players were matched in skill, all of the variation between them is random. However, the difference between the average-skilled players and the two skilled players is not random but due to the superior playing ability of the two skilled players. What this simulation shows is that when skilled players are introduced into the mix, the average player may be better off playing a game of chance (e.g., roulette) than a game of skill, $t(16) = 3.3$, $p<.01$. As noted below, the actual outcome depends on a number of factors including the mix of players.

Figure 2: Effect on the distribution of outcomes after 100,000 spins/hands with 2 skilled poker players present.



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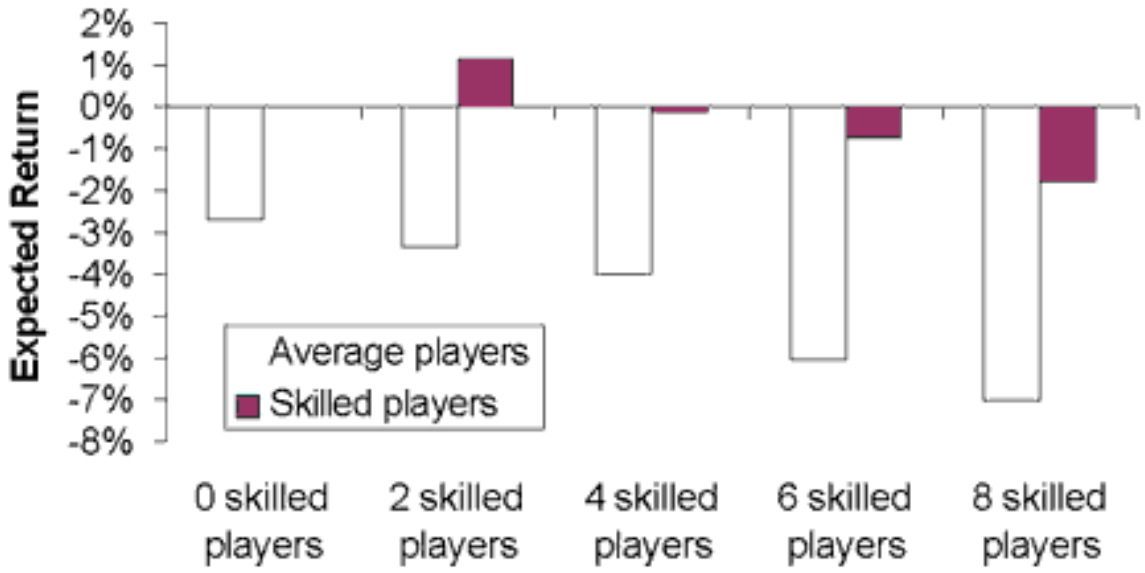
Interestingly, the skilled players did not come out ahead because they won more often. On the contrary, the skilled players won between 8,605 and 9,271 pots, while the eight average-skilled players won between 10,216

and 10,638 pots each. This illustrates an important rule in poker: skilled poker players are more selective, and therefore, enter fewer pots. They win less often, but are more likely to win the pots that they do enter. Average-skilled players tend to pursue more hands, and therefore, lose more when they do lose.

On average, these poker players played against an expected return (house edge) of -2.69%; however, when playing against skilled players the average return was -3.1% for the Igors, which is a relatively small house edge. The skilled players achieved an average return of +1.35%, approximately the same advantage card counters can achieve in blackjack.

Figure 3 shows the effect of adding additional skilled players to the game. When playing against eight skilled players, the expected return drops steadily for the average-skilled players to -7%. Interestingly, the expected return also drops for the skilled players, because they are playing against each other. In fact, according to this analysis, skilled poker players only have a positive expectation if the majority of their opponents are less skilled. If the final two Igors were replaced with skilled players, the outcome for the skilled players would be random —identical to the results of the first stimulation in which all players were of average ability.

Figure 3: The expected return for skilled and unskilled players as the number of skilled players increases.



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As stated earlier, the profile/character used to represent an average player, Igor, was not a particularly bad player, just a little too loose and aggressive. Other profiles representing players that were much too loose, too tight, too aggressive or too passive were also tried. For example, when a very loose player and a very tight player were played against the Igors, the Igors had an average return of +1.6%. The very loose player, G.A. Joe, achieved an average return of -22.3%, and the very tight player, Crusty Jack, played at a return of -10.1%. Against average players, these two particularly weak players played with an expected return that was worse than most slot machines. Alternatively, if Igor played against both weaker players and more skilled players, he tended to break even, more or less (+0.05%).

The point is that the outcome of play depends on the mix of players present; against equally matched players, the game results are random and have a return that is about the same as European roulette and somewhat better than most slots machines. However, against more skilled players, the player disadvantage for weak players can be extremely great. It should be noted that even though many average-skilled players face a negative return, they often do not have a gambling problem. They often play poker just to enjoy the game.

Study 3

A final simulation was conducted to illustrate that these findings are not restricted to poker but also apply to sports betting and other skills-based games. In sports betting the house edge averages at around 4.55%, and this is accomplished by a 9.09% vigorish or commission charged on all wins (see www.professionalgambler.com/vigorish.html for more information). For example, if an $11 bet is made, it pays $21 for a win (a bet of $11 plus a $10 win). The extra $1 is the commission.

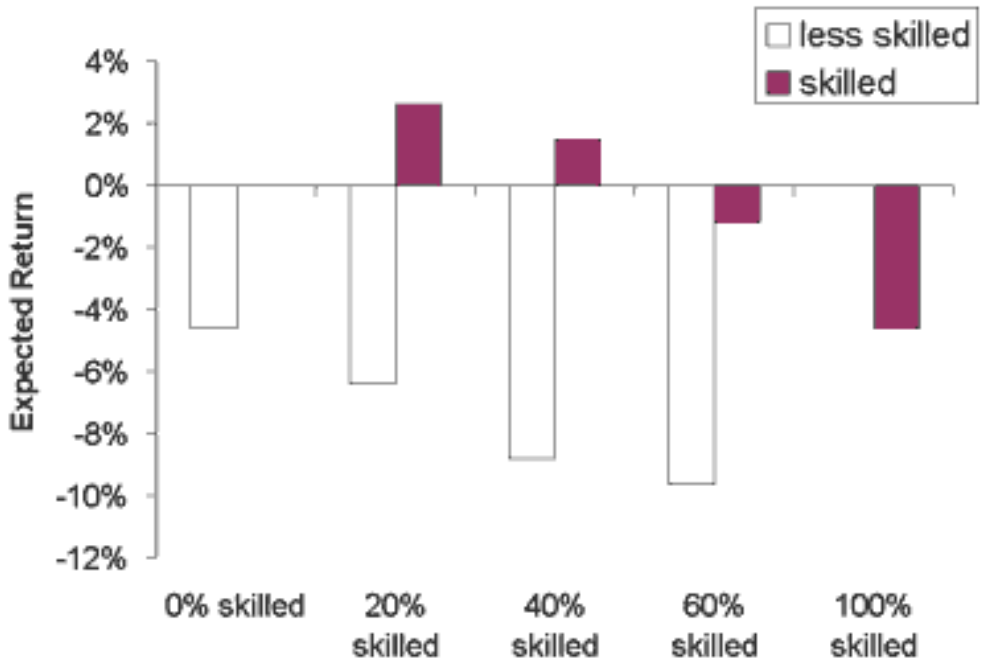
The bookie sets a "line" for the teams that turn the sport game into a situation where the player has a 50% chance of winning. For example, if the line says that the Yankees will win by one and a half runs, then a player only wins the bet if the Yankees score two runs (more than another team). If the bookie places the line with 100% accuracy, the game is random; but since bookies are only human, there is usually some opportunity to win. In addition, a bookie sometimes has to shift the line to encourage bets on an underdog that isn't getting enough action. A skilled player has to out-think both the bookies and the other players and look for opportunities.

A relatively simply program was constructed to examine this situation. In this simulation, a situation was set up where all players had an equal chance of winning. The next simulation was conducted in which 20%, 40% or 60% of the players were 5% more likely to guess the winning team than the less skilled players; but the line was adjusted to maintain the 4.55% overall house edge. This program does not really take into account the skill of the bookie. But the skills of the bookie would simply add more random variation to the data and would not otherwise affect the results.

Results

Figure 4 illustrates what happens to the expected return of the less skilled bettors as the number of skilled bettors is increased. The results are nearly identical to the results obtained in the poker simulation.

Figure 4: The expected return for skilled and unskilled sports bettors as the number of skilled bettors is increased



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Discussion

The results of this study illustrate two important aspects of playing a game of skill. Firstly, if all players are equally matched in skill, the outcome is random. Secondly, if highly skilled players are introduced into a game, the less skilled players are more likely to lose. These rules also apply to horse racing, sports betting and stock market investing. In each case, players can only make money if they have better information and strategies than other players do. If the information is shared and the strategies are the same, the outcome is random. Andrew Beyer (1983) describes how "speed handicapping" is no longer a sure-fire moneymaker. He states, "If [speed figures] have become somewhat less profitable than they used to be, it is only because so many bettors have discovered what a wonderful device they are (pg. 88)."

In sports and horse betting, players do not play directly against each other; a player's level of skill affects other players because pay-out odds in horse racing or the "line" in sports are adjusted based on the bets of other gamblers. A player's skill level is also affected by the skill of his or her bookie; a particularly good bookie will leave fewer opportunities for the astute player. Only those players who take the time to rationally evaluate all the information available, watch the races or games for subtle clues, look for games where the bookies and other bettors have underestimated horses' or teams' abilities can get an edge. "Trip handicapping" (Beyer, 1983) can help, but knowing that a second place horse from two weeks ago lost because it was "parked" in the fifth path around the last turn, and that its speed figures are underestimated, requires prodigious study and observation.

If all of the players are using the same information, no one can achieve any real long-term edge, and like roulette, in the long term, only the house (e.g., bookie, broker, casino) wins. However, some highly skilled players often have more information, and as a result, the average-skilled player in each of these games can be at a tremendous disadvantage.

Blackjack is perhaps the only game where skilled players do not immediately hurt the short-term success of less skilled players. However, the successes of card counters forced the casinos to change the rules and made it harder to win at blackjack (see Patterson, 1990; Thorpe, 1962).

In interviews with poker players, Horbay and Fritz (1998) found that poker players in treatment for gambling problems over-emphasized the luck element and under-emphasized the skill element. Successful skilled players (those that do not have a gambling problem), on the other hand, emphasized the skill factor —they see luck as having a minimal role.

Books by skilled gamblers (e.g., Warren, 1996) stress the importance of understanding the short-term influence of luck in contrast to the long-term influence of skill. This idea is key to both retaining emotional control during bad beats (e.g., losing what should have been a sure win) and keeping weaker players in the game. However, even players with problems do possess some skill. According to Browne (1989), many players have periods of problem ("tilt") and non-problematic play.

Are problem gamblers simply players who have a poor level of skill? Do they all suffer from false beliefs about their abilities? According to the data presented here, a person could be reasonably good, and yet, in the long term, still lose money. A problem gambling counsellor might conclude that a problem gambler has a distorted belief about his or her own skill, but the reality may be subtler. Moderately skilled gamblers may be caught in a rather odd net —they might know that they are above average players, and yet, may still lose money in spite of winning more often than not.

The counsellor may find that a slightly different approach is needed for such clients. Telling them, for example, that they cannot win because winning is random, would not sit well with clients who know they have the skills. Their self-appraisal may be, in fact, reasonably accurate. But they may not realize just how skilled they would have to be to beat the house edge and the edge of other players (especially in horse racing). However, if they focus instead on how the house rake and better players take their cuts, this may lead to an understanding. The point is that a counsellor should consider the game that a player frequents, and in the case of skilled games, help players understand how even skilled play does not guarantee winning in the long run.

There are a number of limitations to this study. In this simulation, skill was defined in terms of card playing skills (probabilities, pot odds and the ability to apply strategies). In real life, emotional upsets, fatigue and other psychological states also affect the outcome of a game of skill. The ability to read the non-verbal cues of other players while masking their own is also an important factor for skilled players. This simulation does not take into account these specific kinds of skills; however, for the purpose of the simulation, the specific type of skill doesn't really matter. What matters is

the difference in skill between one group of players and another. Another limitation is that this simulation treats the two groups —skilled and less skilled —as if they were distinct. In reality, skills vary continuously between individuals. It is unlikely that a table exists where all players are matched in terms of skill.

In addition, the behaviour of the individuals in this simulation are fixed, whereas the behaviour of real players vary considerably. Real players with mediocre skills may become more skilled, drop out of play, play well on one occasion, or get too emotionally involved in a game on another occasion and play badly.

The goal of this simulation is not to show how an unskilled player would fair over the course of his or her life. Instead, the goal is to make a realistic estimate of their expected return (probable long-term outcomes over three years), given their current level of skill, and the mix of skilled and less skilled players at the table. The actual results would only apply to individuals who continued to play against skilled players without improving their own skills. These results, however, are consistent with observations of a player in treatment for poker related gambling problems (Horbay & Fritz, 1998), who lost $40,000 over a three-year period.

Part of the allure of poker and other games of skill is that players feel they can win in the long term. The results of this study show that this belief is often illusory, especially if the other players are more skilled. In a game of skill, the less skilled players can be at a greater disadvantage since they are playing against both the house edge (the rake) and the skilled players' edge. It should be noted that many social players who play for fun rather than money are unlikely to develop gambling problems, even if the odds are stacked against them.

However, consider the plight of the average horse race bettor. The house edge at the track is at least 17% (see Beyer, 1983) and actually higher for some of the more exotic bets (e.g., exactas). Apparently, there are horse bettors who win and have a positive expected return (see Beyer, 1983). This means that the remaining horse bettors are not only up against a 17% house take but also contribute to the 1% or 2% positive return that the expert horse bettors take home. If 10% of the horse bettors are bringing home a positive return of 1%, then the average loss of the remaining players has to drop to around -19% to accommodate this 1% profit. Up against 17%, it would take a fair amount of skill to achieve a return of -10%. This explains why even very skilled horse bettors may end up losing money. Today, perhaps only 1% or 2% of horse bettors make money.

Consequently, when a player from a game of skill reports losing consistently, it does not necessarily indicate a lack of ability, but rather that the player has played against the house edge and the edge of more highly skilled players.

This study also has implications for prevention. The types of simulations used in this paper may have a practical application. Showing gamblers how dismal their long-term prospects are may facilitate a re-evaluation of gambling as an activity. Simulations could be used to teach various games as a form of harm reduction. Finally, simulations could also be used to correct such erroneous expectations as the belief that one is due to win.

In summary, this paper shows that an unskilled player is sometimes financially better off in a game of chance than in a game of skill. However, it should be noted that many people play poker not because they expect to make a fortune but because they enjoy playing the game. As long as there are no serious financial consequences, they will continue to play even though they may lose less money at games of chance.

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> "My current research interests are focused on understanding the motivation to gamble and those factors which differentiate between problem gamblers and recreational gamblers. I enjoy the game of poker and hope that my research will keep me on the recreational side of the table."

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Figure 1: Distribution of outcome after 100,000 spins/hands of roulette and poker.

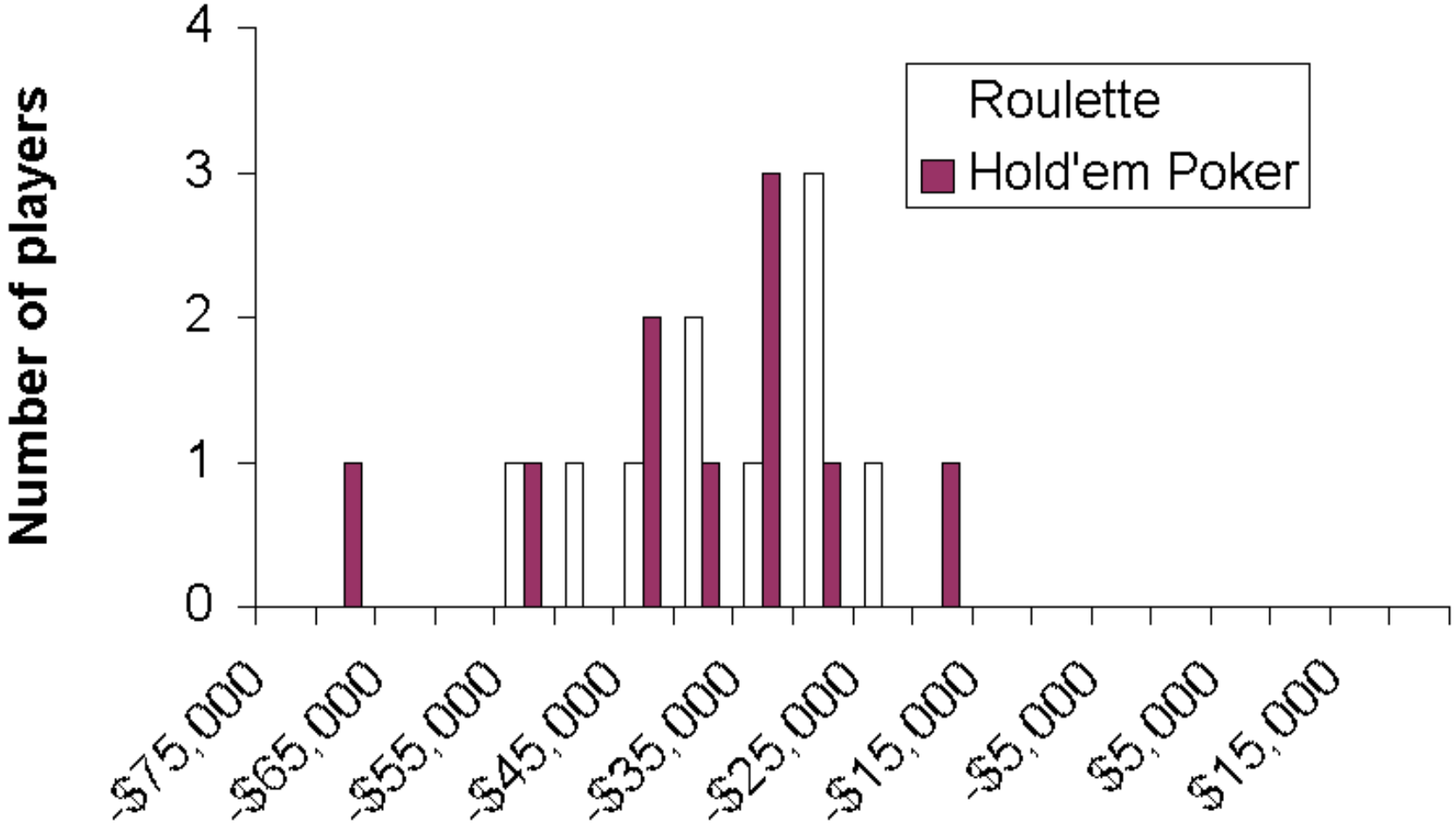


Figure 4: The expected return for skilled and unskilled sports bettors as the number of skilled bettors is increased

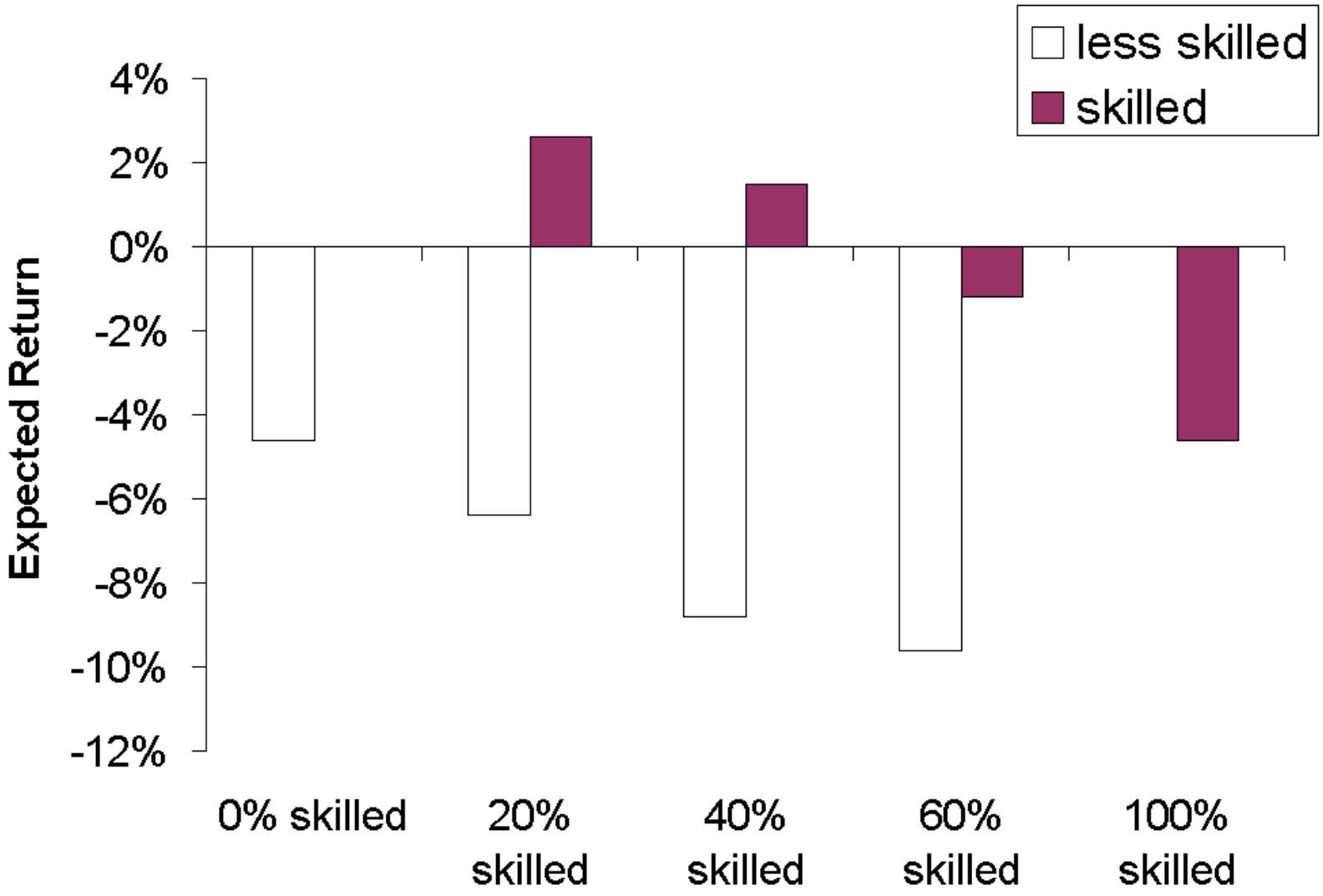


Figure 2: Effect on the distribution of outcomes after 100,000 spins/hands with 2 skilled poker players present.

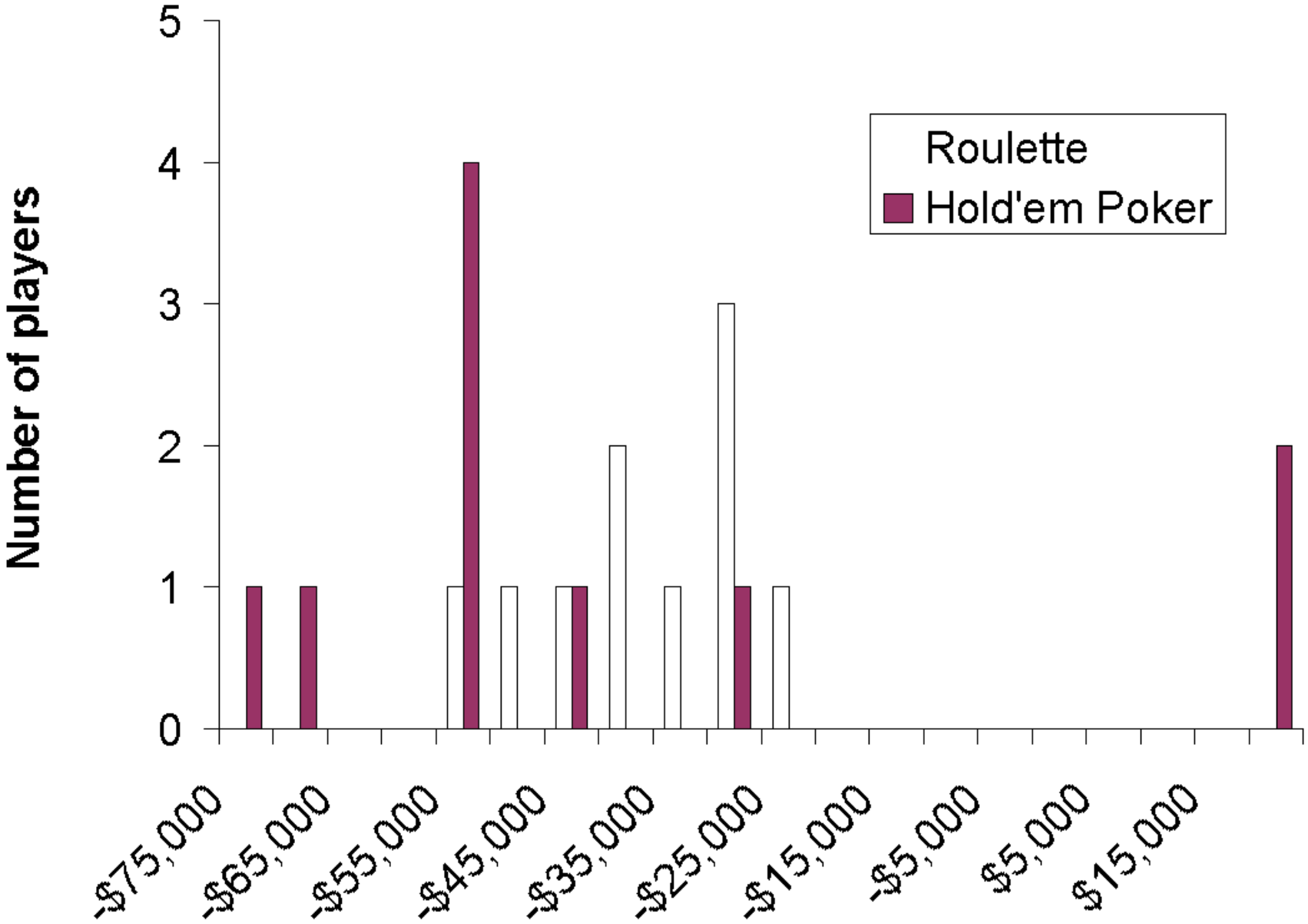
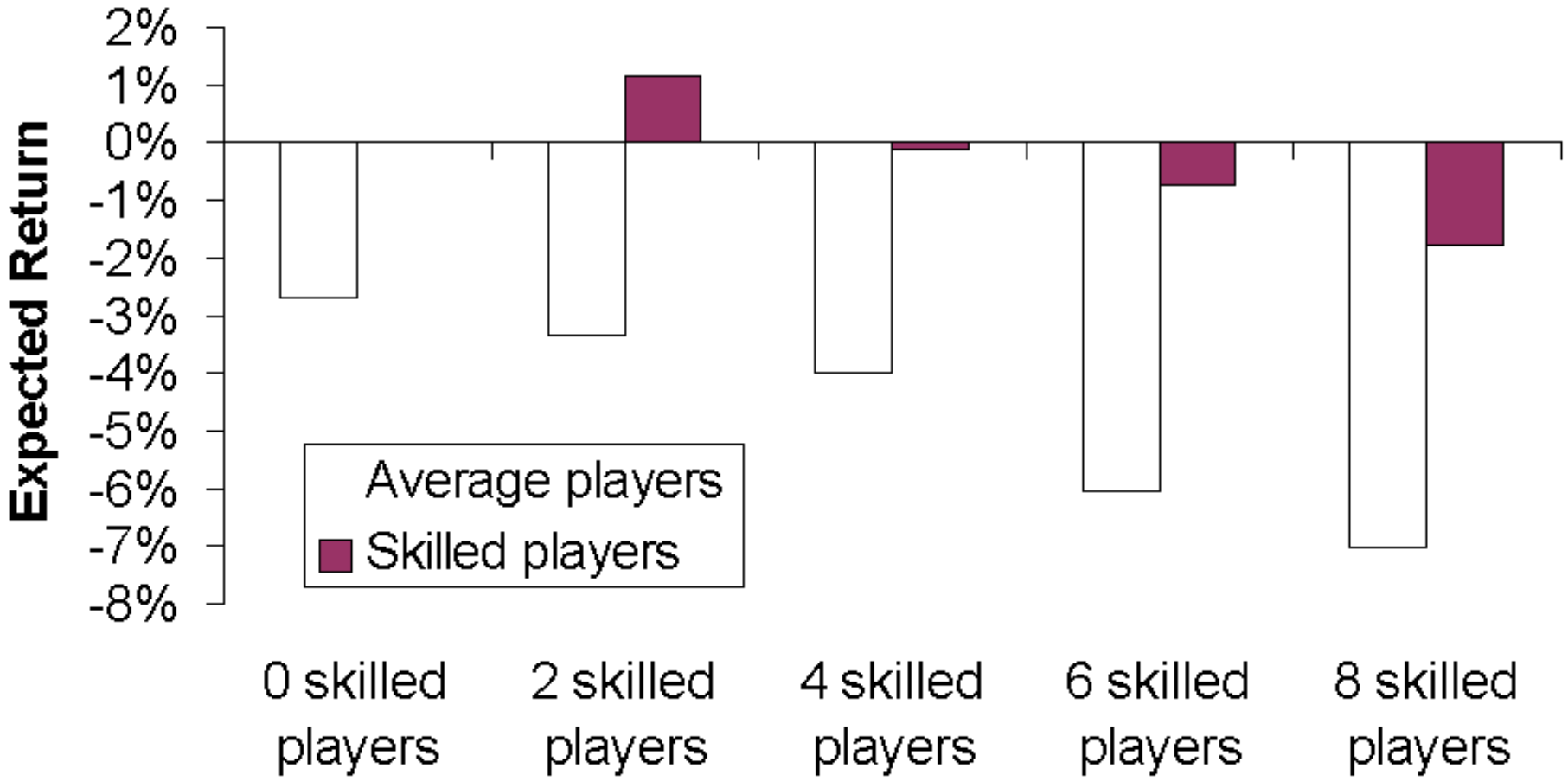


Figure 3: The expected return for skilled and unskilled players as the number of skilled players increases.



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Brief Research Report

Internet Gambling: Preliminary Results of the First U.K. Prevalence Study

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Acknowledgements:

The author would like to thank the research organization MORI who collected the data for this study.

Abstract

Technology has always played a role in the development of gambling practices, and new technologies such as Internet gambling may provide many people with their first exposure to the world of gambling. Further to this, Internet gambling could be argued to be more psychologically enticing than previous non-technological incarnations of gambling because of anonymity, accessibility and interactivity. This paper reports on the results of the first U.K. study of Internet gambling; 2098 people were interviewed for their behaviour and attitudes. Results indicated that only 1% of Internet users (n=495) had ever gambled on the Internet and that there was no evidence of problematic gambling behaviour associated with the Internet.

Introduction

What seems clear is that the field of gambling is not immune to the technological revolution taking place in other fields. Griffiths (1996a, 1999) has argued that these new technologies (e.g., Internet gambling, telephone wagering, interactive television, etc.) may provide many people with their first exposure to the world of gambling and be more psychologically enticing than previous non-technological incarnations. Further to this, it has been alleged that social pathologies are beginning to surface in cyberspace, i.e. "technological addictions" (e.g., Griffiths, 1995a, 1996b, 1996c). Technological addictions can be viewed as a subset of behavioural addictions (see Marks, 1990) and feature all the core components of addiction (e.g., salience, mood modification, tolerance, withdrawal, conflict and relapse, see Griffiths, 1995a, 1995b, 1996b, 1998). Given these assertions, Internet gambling is an issue of potential social and psychological concern.

Internet gambling

No-one is really sure how the Internet will develop over the next five to 10 years, but Internet gambling as a commercial activity has the potential for large financial rewards for its operators. The success of Internet gambling depends on many factors including diversity, accessibility and advertising. Internet gambling is provided by a network of networks that span geographical borders and are not discrete. Internet gambling is therefore global, accessible and available 24 hours a day.

The growth of the Internet raises interesting questions. Perhaps one way to think of this growth is to see the Internet as providing a medium for other addictions (e.g., gambling, computer game playing, etc.). It has been argued (Griffiths, 1996a, 1998) that the Internet could easily be a medium for obsessive and/or compulsive behaviours such as gambling. Some observers (e.g., O'Neill, 1998) have argued that Internet gambling provides "a natural fit for compulsive gamblers." Griffiths (1999) also raises the following issues:

- *Underage gambling*. How can you be sure that adolescents are not accessing Internet gambling by using a parent's credit card?
- *Problem gambling*. How can you stop problem gamblers from gambling?
- *Gambling while intoxicated*. How can you be sure that a person under the influence of alcohol or other drugs does not have access to Internet gambling?
- *Internet gambling in the workplace*. How can you be sure that a person is not wasting time at work gambling on the Internet?
- *Electronic cash*. How can a person with a credit card be prevented from spending more than they intended? It is very likely that the psychological value of electronic cash will be less than "real" cash (and similar to the use of chips or tokens in other gambling situations). This may lead to some kind of "suspension of judgment."
- *Hours of operation*. How can you prevent a person from playing all day? The Internet never closes, so it is theoretically possible to gamble all day, every day.

Internet gambling is a new phenomenon and to date no research on prevalence has been published. This study, therefore, provides the results of the first U.K. survey of Internet gambling, examining both behaviour and attitudes.

Method

A total of 2098 people (918 male and 1180 female) were interviewed across 167 different sampling points by MORI, a market research company. (MORI was founded in 1969 and is the largest independent research service agency in the United Kingdom.) People were interviewed face-to-face in their homes, and the interviewers used computer-assisted techniques. The data were weighted in order to represent the entire U.K. population. Of the 2098 participants, 495 (24%) were Internet users.

Results

Attitudes toward gambling:

Participants were asked a number of questions about their attitudes toward gambling in general. Gambling was defined as "risking money for a future reward on a particular activity," such as horse race betting, slot machine gambling, etc. Fifty-one per cent thought gambling was generally addictive, 20% described it as an unhealthy activity, 22% said it was a dangerous activity and 56% thought it was a waste of money.

Attitudes toward Internet gambling

Participants were also asked a number of questions about their attitudes toward Internet gambling compared to non-Internet gambling. Eight per cent thought Internet gambling was more addictive, 5% said it was more unhealthy, 9% claimed it was more dangerous, 13% said it was less regulated and 21% claimed it was more likely to attract children.

Gambling on the Internet:

Participants who were also Internet users (n=495) were asked about their actual Internet gambling behaviour. The results showed that no-one gambled regularly (i.e. once a week or more) on the Internet and that only 1% were occasional Internet gamblers (i.e. less than once a week). Results also showed that a further 4% had never gambled but would like to do so, whereas the remaining 95% had never gambled on the Internet and said they were unlikely to do so.

Teenage Internet gambling:

Participants who were between 15 and 19 years old (n=119) were also asked if they had ever gambled on the Internet, and if they had, whether they had used a parent's credit card. No-one in the sample had done either, although 4% said they would like to gamble on the 'Net.

Female Internet gambling:

Female participants (n=1180) were also asked about their attitudes toward gambling online as compared to gambling in a betting shop. Of those surveyed, 73% said they would never gamble on the Internet. However, 2% reported that they would rather gamble on the Internet because it's safer, 9% said it's less intimidating, 9% claimed it's more anonymous, 2% said it's more fun and 13% claimed it was more tempting.

Conclusions

The results of this first U.K. survey of Internet gambling behaviour and attitudes are interesting but not that surprising given the relatively low use of the Internet in the U.K. (Traditionally, in the U.K. most people have to pay by the minute for Internet access, which most likely inhibits use.) Interestingly, general attitudes toward gambling were quite negative (i.e.

people thought it was addictive, unhealthy, etc.), whereas attitudes toward Internet gambling appeared quite positive. However, this may be due to inexperience and/or ignorance of the issues involved. For instance, only 13% of the sample thought Internet gambling was less regulated than other forms of gambling. This is clearly not the case as there is little legislation in the U.K. concerning Internet gambling.

Although there has been speculation that Internet gambling is addictive, there is no evidence from this study. Although a problem gambling screen was not administered, the fact that no-one in the study was a regular gambler suggests that there were few problems (if any) among this particular population. However, as the number of online users in the U.K. increases, the potential for problem gambling will increase. This study should therefore be viewed in the context that it was carried out at a time when Internet use was limited in the U.K. The U.K. has a higher prevalence of Internet use than France or Germany, but its rate is much lower than the U.S. and many Scandinavian countries (Snoddy, 2001).

This survey also highlights a small minority of women who think that Internet gambling may be a more positive experience than visiting the male-dominated environment of the bookmaker. These women claimed the Internet was not intimidating, but was safer and more fun. Internet gambling may therefore (in the future) provide a safe forum for women wanting to gamble —at least from a perceived point of view.

Since many teenagers now have access to the Internet either at home or at school, there has been a pressing concern that children and adolescents will take up gambling on the Internet. This perception was partly shared by participants; one in five of those surveyed felt that Internet gambling would be more attractive to teenagers. Having said that, no teenagers in this study gambled on the Internet. However, one in 20 teenagers interviewed found the prospect of using their parent's credit card to gamble tempting.

Internet gambling is at the cutting edge of future entertainment and is an issue that must be grasped by many people (legislators, social policy analysts, psychologists, sociologists, etc.), as the number of sites and users will rise dramatically over the next decade. Gambling online, which is currently a minor activity, may be tempting because of the anonymity and accessibility of the Internet. It therefore has the potential to become a social problem in the near future, unless guidelines and legislation are introduced. It has also been speculated (Griffiths, 1993, 1995c) that structural characteristics of future software programs might promote addictive tendencies. Structural characteristics (i.e. features which manufacturers

design into their products) promote interactivity and to some extent define alternative realities to the user, allowing them feelings of anonymity. These features may be very psychologically rewarding to individuals with these tendencies. There is little doubt that Internet use among the general population will increase over the next few years, and if social pathologies exist, then there is a need for further research.

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[Correction: Figure 1 was omitted from the original article. The first paragraph of the Results section has been altered accordingly. We apologize for this error. –Ed.]

Brief Research Report

Internet Gambling Among Ontario Adults

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Abstract

The increased popularity of the Internet among the general population is of particular relevance to the area of Internet gambling. This paper describes the prevalence of Internet gambling among Ontario adults. Data are based on a random telephone survey of 1,294 Ontario adults. Overall, 5.3% of the Ontario adults interviewed in 2000 reported having gambled on the Internet during the past 12 months. Although women were more likely to gamble on-line than males (6.3% vs. 4.3%), the difference was not statistically significant. Only marital status was significantly related to Internet gambling. Those previously married (divorced, widowed) were significantly more likely to report on-line gambling compared to those who were married (10.9% vs. 4.9%). There were no dominant age, regional, educational or income differences.

Introduction

The global growth of gambling and the increased popularity of the Internet have led to a greater number of people having the ability and willingness to engage in Internet gambling (Sinclair, 2000). Although Internet gambling is considered to be at an early stage, virtually all observers assume the rapid growth of Internet gambling will continue (National Gambling Impact Study Commission, 1999). According to some estimates, $2.3 billion (US) a year is being spent on Internet gaming worldwide, and the market has more than tripled in size since 1997 (Mitka, 2001). One study, which features details on more than 1,400 gambling sites available worldwide, estimates that the number of Internet gamblers will grow from approximately 4 million people in 1999 to 15 million by the year 2004 (Sinclair, 2000).

It has been argued that new technologies are linked to "technological addictions" such as computer game playing or gambling using video lottery terminals (Griffiths, 1995, 1996, 1999). Because the Internet can be used anonymously and is open 24 hours a day, concerns have been raised regarding its potential abuse by underage gamblers, seniors and pathological gamblers (National Gambling Impact Study Commission, 1999).

In Canada, legalized gambling experienced a rapid expansion in the 1990s and recent studies show that the prevalence of gambling and gambling-related problems in the general adult population is increasing (Jacques, Ladouceur & Ferland, 2000; Korn, 2000; Shaffer, Hall & Vander Bilt, 1999). Although Internet gambling represents another emerging public health issue (Korn, 2000; Mitka, 2001), to date, there is no published research in the professional literature on prevalence of Internet gambling among adults in Canada. The purpose of this paper is to provide epidemiological estimates of Internet gambling among Ontario adults.

Method

Our data are derived from the 2000 cycle of the Centre for Addiction and Mental Health *CAMH Monitor (CM)*, an annual cross-sectional telephone survey of Ontario adults. The *CM* cycle consists of 12 independent monthly

surveys with 200 completions expected each month. The 2000 survey used random-digit dialling (RDD) methods via Computer Assisted Telephone Interviewing (CATI).

The design employed a two-stage probability selection procedure. Each month a random sample of telephone numbers was selected with equal probability in the first stage of selection (i.e. households). Within selected households, one respondent aged 18 or older (who could complete the interview in English or French) was chosen according to which household member had the most recent birthday. To increase the precision of estimates from different areas of Ontario, the sample was equally allocated among six strata by area code. The design resulted in a total sample of 2,406 respondents, representing an effective response rate of 61%. To maximize content coverage without increasing the length of any single interview, two questionnaires were employed in CM 2000: Panel A, representing interviews conducted from January to June, 2000, and Panel B, representing interviews conducted from July to December, 2000. The gambling items discussed in this study were asked only of Panel B respondents (N=1,294). Further details about the CM 2000 are available (Adlaf, Ialomiteanu & Paglia, 2001).

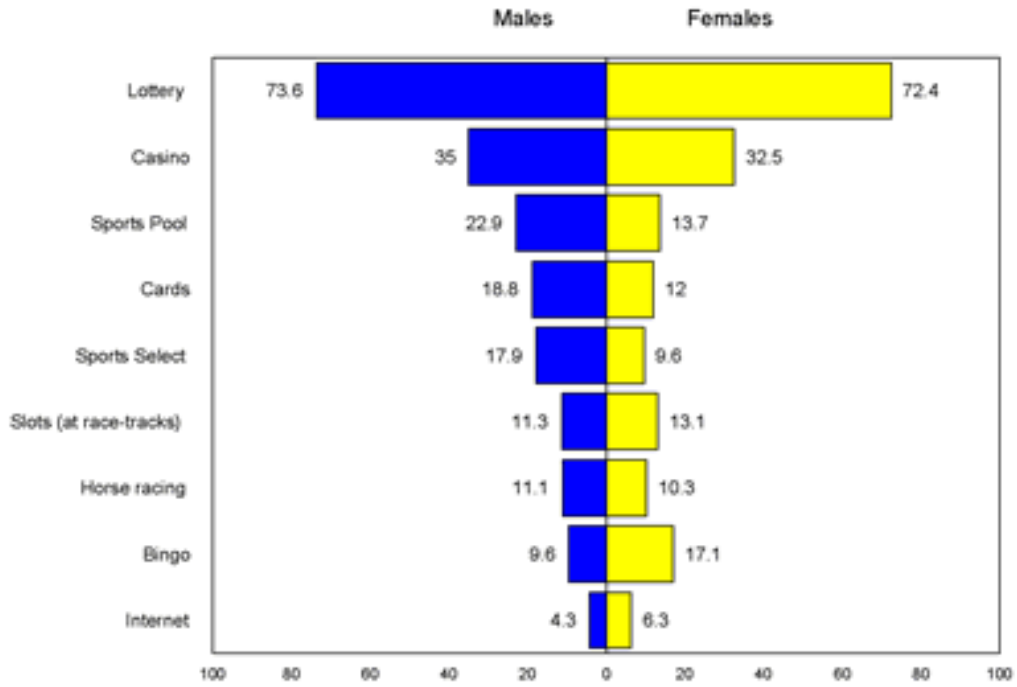
Prevalence of Internet gambling refers to betting money on-line to gamble. Respondents were asked how often, in the past 12 months, they bet money using the Internet? Because our design employed complex sampling methods, we used Taylor linearization methods in order to ensure proper variance estimation for weighted complex sampling (Stata Corporation, 1999). Subgroup analyses were conducted by gender, age, marital status, region, education and income, using logit models. The significance of the group effect was determined by adjusted Wald statistics.

Results

As seen in Figure 1, Internet gambling was the least commonly reported form of gambling for both men and women. Overall, 5.3% (4.1% to 6.9%, 95% CI) of Ontario adults interviewed in 2000 reported having gambled on the Internet during the past 12 months (see Table 1). Although women were more likely to gamble on-line than males (6.3% vs. 4.3%), the difference was not statistically significant. There was a significant univariate effect for age, with people aged 50 to 64 reporting the lowest rates of Internet gambling, and those aged 65 and over reporting the highest rates (1.5% vs.

8.1% respectively), but after controlling for other demographics this effect did not hold.

Figure 1
Types of Gambling Activities in the Past 12 Months by Gender, Ontarians Aged 18+ , 2000



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Only marital status was significantly related to Internet gambling. Previously married (widowed, divorced) people were significantly more likely to report on-line gambling compared to those who were married (10.9% vs. 4.9%). There were no dominant regional, educational or income differences.

Additional analyses revealed that 6.7 % (5.1% to 8.7%, 95% CI) of past year gamblers (N= 1,042) reported past year Internet gambling. Moreover, findings evident among the total sample also held for those who gamble among the respective demographic groups: women, people over 64, and previously married people reported the highest rates of Internet gambling. But only marital status was a significant predictor of gambling on-line after controlling for other variables (data not shown).

Table 1. Percentage reporting Internet gambling during the past 12 months, unadjusted and adjusted group differences, Ontario residents aged 18 or older, 2000

		N	%	95% CI	Unadjusted Odds Ratio	Adjusted Odds Ratio for Factors 1 to 6
Total Sample		1,294	**5.3**	(4.1, 6.9)		
1) Gender					NS	NS
Women	(Comparison Group)	722	**6.3**	(4.5, 8.6)	---	---
Men		572	**4.3**	(2.7, 6.8)	.67	.78
2) Age					*	NS
18-29	(Comparison Group)	294	**4.4**	(2.4, 8.0)	---	---
30-39		302	**6.9**	(4.3, 10.9)	1.59	1.09
40-49		266	**5.6**	(3.2, 9.6)	1.26	.86
50-64		242	**1.5**	(0.5, 4.2)	.32*	.19**
65+		205	**8.1**	(4.4, 14.5)	1.90	1.04
3) Marital Status					**	**
Married/Living with Partner	(Comparison Group)	768	**4.9**	(3.4, 6.9)	---	---
Never Married		272	**3.5**	(1.8, 6.9)	.72	.64
Previously Married		239	**10.9**	(6.4, 17.9)	2.38**	2.72**
4) Public Health Regions					NS	NS
Toronto	(vs. Provincial Average)	208	**7.7**	(4.4, 13.3)	1.63	1.79
Central South		120	**5.0**	(2.2, 10.9)	1.03	.95
Central West		167	**3.2**	(1.3, 8.1)	.66	.75
South West		224	**5.2**	(2.9, 8.9)	1.05	.98
Central East		155	**3.2**	(1.3, 7.7)	.65	.63
East		207	**7.1**	(4.3, 11.6)	1.49	1.64
North		213	**4.3**	(2.1, 8.6)	.87	.79
5) Education					NS	NS
Less than high school	(Comparison Group)	180	**6.7**	(3.3, 13.2)	---	---
Completed high school		370	**6.0**	(3.6, 10.1)	.89	.92
Some college or university		390	**5.4**	(3.5, 8.3)	.79	.77
University degree		343	**3.6**	(2.1, 6.3)	.52	.49
6) Income					NS	NS
<$30,000	(Comparison Group)	219	**6.3**	(3.3, 11.6)	---	---
$30,000-$49,000		217	**4.4**	(2.2, 8.7)	.69	.94
$50,000--$79,000		284	**6.5**	(3.9, 10.6)	1.03	1.72
$80,000+		278	**5.3**	(2.9, 9.5)	.83	1.79
Not stated		296	**4.3**	(2.4, 7.7)	.67	.97

Notes: *p<.05; **p<.01
Asterisks in shaded rows indicate the significance of the group effect, based on Wald test.
Odds greater than 1.0 indicate that gambling is more likely to occur in the group being compared to the comparison group.
Odds less than 1.0 indicate that gambling is less likely to occur in the group being compared to the comparison group.

(click figure for larger image)

Discussion

Although the data provide some unique and timely information regarding Internet gambling in Ontario, they are not without limitations. Indeed, we must recognize that the estimates of Internet gambling are potentially affected both by errors in reporting Internet gambling and errors due to missing respondents. It is likely that both types of error would understate the Internet gambling estimates. Also, no information was gathered regarding the prevalence and frequency of Internet use among Ontario adults.

Several implications and observations may be drawn from the findings. First, many traditional demographic factors, such as sex, age, region and socioeconomic factors, are not particularly forceful factors in Internet gambling. This form of gambling is robust and appears to span all configurations of individual social and economic status. Second, although rates of Internet gambling are not excessive, given the simultaneous expansion and diffusion of both Internet access and gambling, continued surveillance is important. Third, given the absence of a significant association between Internet gambling and low income, some may speculate the existence of a potential regressive influence of Internet gambling (Korn, 2000). In this context, investigations must assess the association between Internet gambling and disposable income, which was not examined in this study.

Some of the findings provide a conduit for future investigation. First, we need to assess what may be generalized and what are potential factors related to the elevated rate of Internet gambling among previously married respondents. Although this group also reported elevated rates of alcohol problems and psychological distress (Adlaf & Ialomiteanu, 2001), additional analyses indicated that such factors did not nullify the significant association between marital status and Internet gambling. Another finding worthy of attention is the elevated rate of Internet gambling among people aged 65 years and older. Although the association between age and Internet gambling was not significant, this finding still merits attention in future research.

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Figure 1

Types of Gambling Activities in the Past 12 Months by Gender, Ontarians Aged 18+ , 2000

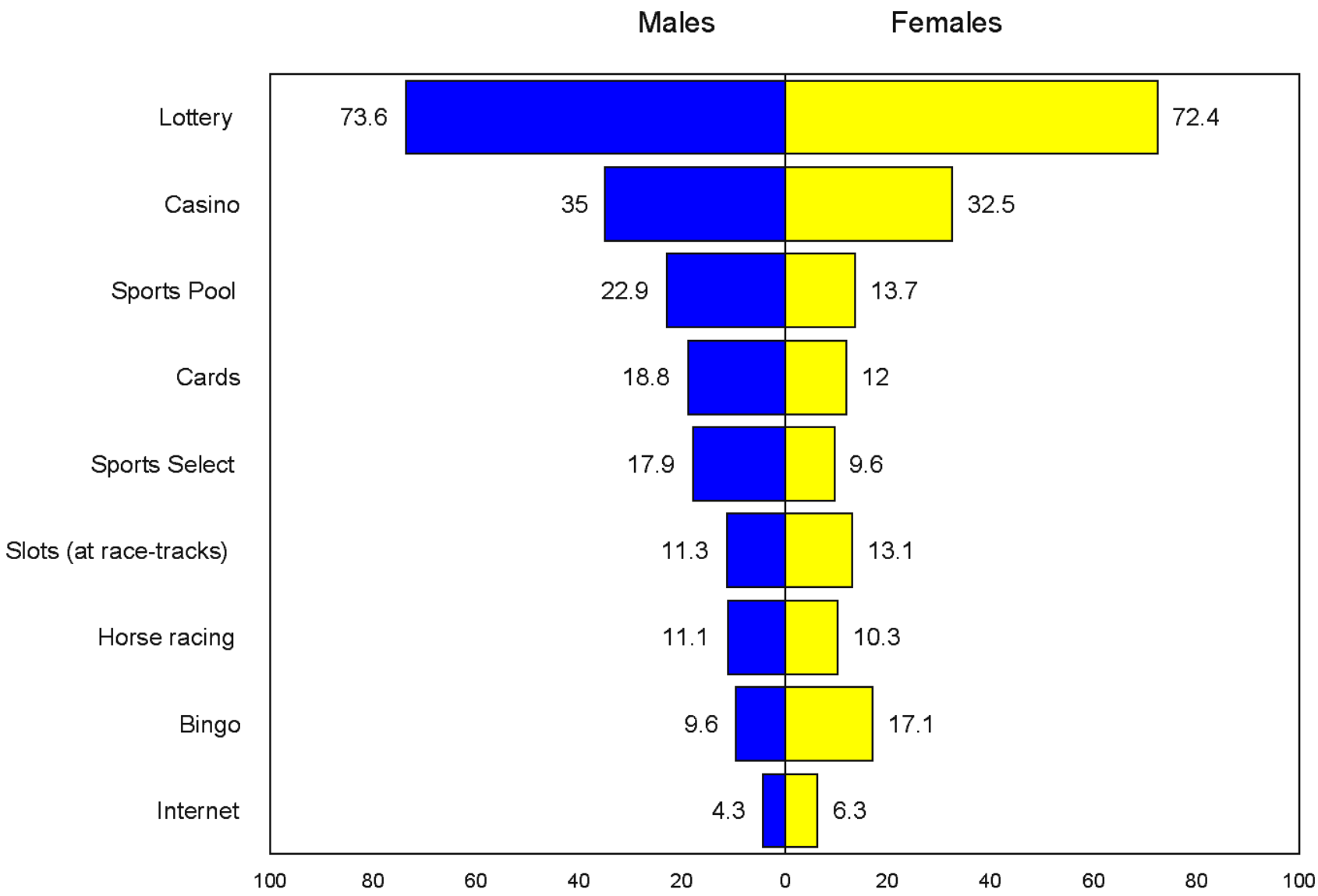

Table 1. Percentage reporting Internet gambling during the past 12 months, unadjusted and adjusted group differences, Ontario residents aged 18 or older, 2000

		N	%	95% CI	Unadjusted Odds Ratio	Adjusted Odds Ratio for Factors 1 to 6
Total Sample		1,294	**5.3**	(4.1, 6.9)		
1) Gender					NS	NS
Women	(Comparison Group)	722	**6.3**	(4.5, 8.6)	---	---
Men		572	**4.3**	(2.7, 6.8)	.67	.78
2) Age					*	NS
18-29	(Comparison Group)	294	**4.4**	(2.4, 8.0)	---	---
30-39		302	**6.9**	(4.3, 10.9)	1.59	1.09
40-49		266	**5.6**	(3.2, 9.6)	1.26	.86
50-64		242	**1.5**	(0.5, 4.2)	.32*	.19**
65+		205	**8.1**	(4.4, 14.5)	1.90	1.04
3) Marital Status					**	**
Married/Living with Partner	(Comparison Group)	768	**4.9**	(3.4, 6.9)	---	---
Never Married		272	**3.5**	(1.8, 6.9)	.72	.64
Previously Married		239	**10.9**	(6.4, 17.9)	2.38**	2.72**
4) Public Health Regions					NS	NS
Toronto	(vs. Provincial Average)	208	**7.7**	(4.4, 13.3)	1.63	1.79
Central South		120	**5.0**	(2.2, 10.9)	1.03	.95
Central West		167	**3.2**	(1.3, 8.1)	.66	.75
South West		224	**5.2**	(2.9, 8.9)	1.05	.98
Central East		155	**3.2**	(1.3, 7.7)	.65	.63
East		207	**7.1**	(4.3, 11.6)	1.49	1.64
North		213	**4.3**	(2.1, 8.6)	.87	.79
5) Education					NS	NS
Less than high school	(Comparison Group)	180	**6.7**	(3.3, 13.2)	---	---
Completed high school		370	**6.0**	(3.6, 10.1)	.89	.92
Some college or university		390	**5.4**	(3.5, 8.3)	.79	.77
University degree		343	**3.6**	(2.1, 6.3)	.52	.49
6) Income					NS	NS
< $30,000	(Comparison Group)	219	**6.3**	(3.3, 11.6)	---	---
$30,000-$49,000		217	**4.4**	(2.2, 8.7)	.69	.94
$50,000--$79,000		284	**6.5**	(3.9, 10.6)	1.03	1.72
$80,000+		278	**5.3**	(2.9, 9.5)	.83	1.79
Not stated		296	**4.3**	(2.4, 7.7)	.67	.97

Notes: *p<.05; **p<.01

Asterisks in shaded rows indicate the significance of the group effect, based on Wald test.

Odds greater than 1.0 indicate that gambling is more likely to occur in the group being compared to the comparison group.

Odds greater than 1.0 indicate that gambling is more likely to occur in the group being compared to the comparison group.

Odds less than 1.0 indicate that gambling is less likely to occur in the group being compared to the comparison group.

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opinion

[This article prints out to about 8 pages.]

The Opinion section has many purposes including being a forum for authors to offer provocative hypotheses, as in this article, that are not supported by science.

–The Editor

Why Don't Adolescent Problem Gamblers Seek Treatment?

By Mark Griffiths, PhD
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Acknowledgement:

I would like to thank Robert Ladouceur for posing the original question contained in this article and for his continued debates with me on this problem.

Abstract

Surveys have consistently shown that the prevalence rates for problematic gambling are higher in adolescents than for adults. Given this finding, why is it that so few adolescents, compared to adults, enrol in treatment programs? This paper outlines ten speculative reasons why this situation exists.

The possible reasons why adolescent problem gamblers don't seek treatment include the following:

1. More adolescents deny they have a gambling problem compared to adults, and therefore, fewer of them seek treatment.
2. Adolescents may acknowledge they have a gambling problem but do not want to seek treatment.
3. There are few or no treatment programs available for adolescents.
4. Available treatment programs are not appropriate and/or suitable for adolescents.
5. Adolescent problem gamblers may undergo spontaneous remission and/or mature out of gambling problems, and therefore, may not seek treatment.
6. Adolescent problem gamblers are constantly "bailed out" of trouble by their parents, and therefore, do not get treatment.
7. The negative consequences of adolescent problem gambling are not necessarily unique to gambling and may be attributed either consciously or unconsciously to other behaviours.
8. Adolescent gamblers may lie or distort the truth when they fill out survey questionnaires.
9. Screening instruments for assessing problematic gambling may not be valid for adolescents.
10. Researchers may consciously or unconsciously exaggerate the

adolescent gambling problem to serve their own careers.

All over the world, prevalence surveys of adolescent gambling have shown that a small but significant number of adolescents display signs of problematic gambling. Further to this, surveys consistently show that the prevalence rates for problematic gambling are higher in adolescents than in adults. Given this consistent finding, it raises the interesting paradox of why so few adolescents enrol for treatment programs compared with adults. This short paper speculates and gives 10 reasons why this situation might exist. Each reason is examined briefly in turn before conclusions are reached.

(1) More adolescents deny they have a gambling problem compared to adults, and therefore, fewer of them seek treatment

This proposition seems plausible, but there is no direct empirical evidence to support such a claim. It is well known that many adult gamblers continually deny they have any kind of gambling problem, an observation that has also been noted in adolescents (Griffiths, 1995). However, there is no evidence to indicate or even suggest that adolescents experience denial at a higher rate than adults do.

(2) Adolescents may acknowledge they have a gambling problem but do not want to seek treatment

Again, this is plausible, but there is little empirical evidence to support the claim. However, it has been noted that families of adolescent problem gamblers are often protective —if not overprotective —and try to keep the problem within the family (Griffiths, 1995). Therefore, it may be speculated that seeking formal help may be a last resort option for most adolescent gamblers.

(3) There are few or no treatment programs available for adolescents

It is true that specialized treatment programs for problem gamblers have only really started to emerge in noticeable numbers over the last 10 years, and that they have been confined to a few countries (e.g., USA, Australia, Canada, Spain, The Netherlands). Services specifically for adolescent problem

gamblers appear to be few and far between. It could be argued that this is a "Catch 22" situation: If only a few adolescents turn up for treatment, treatment programs won't be able to provide specialized service, and adolescent problem gamblers cannot turn up for treatment if it does not exist!

(4) Available treatment programs are not appropriate and/or suitable for adolescents

To some extent, this explanation is interlinked with number 3, but is, in fact, different. This explanation points out that there are gambling treatment programs available, but most of the programs are group-oriented (e.g., Gamblers Anonymous, hospital treatment programs, etc.). Adolescents may not want to be integrated into what they perceive to be an adult environment. For instance, there is some evidence from the U.K. that shows that adolescents who turn to Gamblers Anonymous feel they don't fit in and may be alienated by the dominating presence of older males (Griffiths, 1995). Also in the U.K., the majority of adolescent gambling problems concern slot machine playing; however, adult problem gambling is more likely to consist of horseracing and/or casino gambling. Adult problem gamblers, therefore, find it hard to accept gambling problems outside of their own experience and cannot understand why adolescents find slot machines to be problematic (Griffiths, 1995).

(5) Adolescent problem gamblers may undergo spontaneous remission and/or mature out of gambling problems, and therefore, may not seek treatment

There are many accounts in the literature of spontaneous remission of problematic behaviour (e.g., alcohol abuse, heroin abuse, cigarette smoking), and problematic gambling is no exception. Because levels of problem gambling are much higher in adolescents than in adults, and fewer adolescents receive treatment for their gambling problem, it is reasonable to assume that spontaneous remission occurs in most adolescents at some point, or that there is some kind of "maturing out" process. There is a lot of case-study evidence (Griffiths, 1995) highlighting the fact that spontaneous remission occurs in problem adolescent gamblers, and that gambling often ceases because of some kind of new major responsibility (job, marriage, birth of a child, etc.).

(6) Adolescent problem gamblers are constantly "bailed out" of trouble by their parents, and therefore, do not get treatment

Unlike adult problem gamblers who quite often take responsibility for themselves and their families, adolescents have no "real" responsibilities and are usually housed, fed, clothed and generally looked after. If adolescents get into trouble because of their gambling, their families will mostly likely act as a safety net and bail them out. It could be speculated that very few adolescents reach treatment programs because they are constantly "bailed out" by their parents or guardians. In addition, adolescents are typically at a rebellious phase in their lives, and to some extent, society tolerates these undesirable behaviours because in most cases the behaviour subsides over time. The same kinds of behaviours in adults aren't usually tolerated, and so they are treated differently by both family and society in general.

(7) The negative consequences of adolescent problem gambling are not necessarily unique to gambling and may be attributed either consciously or unconsciously to other behaviours

Some adolescents may attribute their undesirable and/or criminal behaviours (e.g., stealing) to other behaviours, such as alcohol abuse or illicit drugs. For instance, in the U.K., some writings (Yeoman & Griffiths, 1996; Griffiths & Sparrow, 1996) have noted that criminal behaviour attributed to a drug problem is probably more likely to result in a lighter sentence than if problematic gambling were the cause. It appears that problematic gambling as a mitigating circumstance is of less importance to judges and juries than, say, drug abuse.

(8) Adolescent gamblers may lie or distort the truth when they fill out survey questionnaires

This is a reasonable enough assumption to make and can be made against anyone who participates in self-report research — not just adolescents. All researchers who utilize self-report methods put as much faith as they can into their data but are

only too aware that other factors may come into play (e.g., social desirability, motivational distortion, etc.) that can either underscore or overplay the situation. In these particular circumstances, it may be that adolescents are more likely to lie than adults, therefore increasing the prevalence rate of problematic gambling. However, it seems unlikely that the large difference in prevalence rates would be due to this factor alone.

(9) Screening instruments for assessing problematic gambling may not be valid for adolescents

Although there are many debates about the effectiveness of screening instruments (e.g., SOGS, DSM-III-R, DSM-IV, GA Twenty Questions) for assessing problematic gambling, it could be the case that many of these question-based screening instruments are not applicable, appropriate and/or valid for assessing adolescent problem gambling. Although there is now a validated junior version of the DSM-IV (DSM-IV-J) (Fisher, 1993), most research assessing problematic gambling in adolescents has used adult screening instruments. It may be that there is little difference between adult and adolescent screening instruments. If there is a difference, the results are most likely to be under-reported as items asking about illegal behaviours, such as fraud or embezzlement, are highly unlikely to be reported by adolescents.

(10) Researchers consciously or unconsciously exaggerate the adolescent gambling problem to serve their own careers

This explanation is somewhat controversial but cannot be ruled out without at least examining the possibility. If this explanation is examined on a logical and practical level, it can be argued that those of us who have careers in the field of problem gambling could potentially have a lot to lose if there were no problems. Therefore, it could be argued that it is in the researcher's interest for problems to be exaggerated. However, there is no empirical evidence that this is the case, and all researchers are aware that their findings will be rigorously scrutinized. It's not in their best long-term interest to make unsubstantiated claims.

Concluding Comments

Although the list may not be exhaustive, it does give the main speculative reasons why adolescent problem gamblers may be under-reported in turning up for treatment. It is likely that no single reason provides more of an explanation than another does. However, there does not seem to be any empirical evidence for at least three of the assertions made (i.e. adolescents denying having a gambling problem, adolescents not wanting to seek treatment, and researchers exaggerating the adolescent gambling problem to serve their own careers). However, just because there is no empirical evidence does not mean that it is not possible.

Of the reasons remaining, some include those that are not unique to adolescents (e.g., invalid screening instruments for measuring problem gambling, lying or distorting by participants on self-report measures, denying having a gambling problem, and not wanting to seek treatment). These may therefore be more unlikely reasons why adolescents do not turn up for treatment compared to the reasons that seem to particularly refer to adolescents only (i.e. spontaneous remission and/or maturing out of adolescent gambling problems, adolescents being constantly "bailed out" by parents, lack of adolescent treatment programs, and inappropriateness of treatment programmes).

What is quite clear is that there is no single assertion in this article that provides a definitive answer to the adolescent gambling treatment paradox. It is most likely the case that many of the plausible explanations interlink to produce the obvious disparities between prevalence rates and enrolling in treatment programs.

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GamCare Helpline and Counselling Service

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Programme Description

GamCare provides a "stepped-care" approach for the support and counselling of problem gamblers and their families in the United Kingdom. The first stage of this programme is the GamCare Helpline.

The GamCare Helpline provides confidential counselling services and offers advice and information for anyone in the U.K. affected by a gambling dependency. The Helpline is caller-centred and combines telephone counselling, crisis intervention, information delivery and referrals. The Helpline is specifically targeted to reach three main groups: problem gamblers; partners, parents or family members of problem gamblers; and professionals

working in the field of gambling dependency or with gambling related issues.

The GamCare Counselling Service is the second stage of the "stepped-care" programme. It provides individual and couple counselling and abides by the British Association for Counselling Code of Ethics and Practice. All counsellors receive regular supervision of their client work.

Philosophy of Service

There are still limited resources for the treatment and support of problem gamblers and their families in the United Kingdom. By offering telephone counselling along with advice and information, the Helpline helps the caller engage in the counselling process, possibly for the first time. The caller makes a significant start by addressing a gambling problem on the Helpline and developing insights for future counselling work.

If the caller wants to have individual or couple face-to-face counselling, the caller can phone the GamCare Counselling Service and arrange for an assessment session(s). In 2000, 77 per cent of all counselling referrals came through initial contact with the Helpline.

The main aims of counselling are to:

- help reduce the frequency of problem gambling
- develop ways of coping with problem gambling behaviour
- understand some of the underlying reasons why gambling has become a problem, and
- address associated issues and behaviours.

The counselling is integrative and uses a range of therapeutic interventions relevant to the needs of each person. The most effective approach is found to be a combination of cognitive behavioural therapy, which helps reduce or stop problem gambling, and developing coping skills and psychodynamic therapy, which helps clients gain insight into the reasons for their behaviour.

Profiles of our Services

Staff

The Helpline is staffed by GamCare trained and supervised Helpline counsellors. They are employed largely on a volunteer basis. Some have counselling or counselling skills training, others have personal problem gambling experience and some have both. The counselling service staff are qualified counsellors or psychotherapists and have extensive client experience. They are paid on a sessional basis.

Description of our clients

Typically, both callers to the Helpline and clients attending face-to-face counselling have long-standing gambling problems. These problems have often resulted in substantial financial loss, the breakdown or near breakdown of relationships, and impaired physical and psychological health. In 2000, only a small percentage of callers and clients were female problem gamblers. Clients under 35 tended to access the Helpline while the counselling service attracted a slightly older group. Twenty-seven per cent of clients who met with counsellors face-to-face were from ethnic minority communities.

Slot machines and on and off course betting were the most common modes of problem gambling, representing 92 per cent of calls to the Helpline and 89 per cent of counselling work. Other problem areas were casino table games, scratch cards, private card games and spread sports, and financial betting.

Programme Evaluations and Research Involvement

At assessment, clients have a semi-structured interview covering the DSM-IV criteria for pathological gambling and the South Oaks Gambling Screen. They are also evaluated across different areas of client functioning. At closure, and again at follow-up, the extent of the client's resolution or improvement across all domains is measured.

At present, there is no research involvement.

Outcomes

During 2000, 77 per cent of clients at closure had either stopped or reduced their problem gambling behaviour. There were also considerable improvements across areas of client functioning. During follow-up, many clients who had regressed in their gambling reported prior deterioration in their problem area(s) of day-to-day functioning as well.

Adrian Scarfe
Counselling Manager, GamCare

This Service Profile was not peer-reviewed.

Submitted: April 10, 2001

The Electronic Journal of Gambling Issues: eGambling invites clinicians from around the world to tell our readers about their problem gambling treatment programs. To make a submission, please contact the editor at phil_lange@camh.net.

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first person

First Person Account

[This article prints out to about 5 pages.]

October 24 Was the Day I Took the Drastic Step

The author's name has been withheld on request, and all names have been changed.

–The Editor

Friday, April 7, 2000 was my first meeting with Gen, my gambling counsellor. I could have saved a lot of grief had I seen her sooner, or ended up in a worse predicament, had I waited any longer.

A lot of things were both good and bad for my husband Paul and I that year, and so it was the same with my new pastime: gambling. Prior to the beginning of this year, I was not sure that gambling was, in my case, bad. There were, of course, many factors and excuses leading to my problems. My life had changed —and so did my survival skills. I had retired and remarried, determined to love all of the above.

It is true I chose my new husband, but without realizing it, I married the whole Macho Group in a more real way than I was aware of at the time. Suddenly, I was no longer captain of my own ship. My new family consisted of his seven children, their mates, and my son and his lady. Grandchildren and dogs are

never an issue with me, but there are five and two, respectively. Not relations, but influential on the impact of my new life were Wilhelm, Ursula and Bohdan, the list goes on. My, no, *our* little home had so many huge egos in it that I, the Lion and King of the Castle, became a mouse. This was slow to register with me, but stress signals surfaced; stomach pains, an ulcer, insomnia, loss of joy.

Relief originally came from Paul, although I can't give him all the credit (or blame). He took me to a casino, a totally new experience for me. It did not impress me too much at first, but I learned the rudiments of what happens there. It was "take it or leave it" for some time, but it became a godsend when I needed a diversion to get away from an overbearing situation at home and to regain my car driving skills and my confidence.

The drive from west Toronto via the QEW highway to Casino Niagara became a time to listen to the radio and tapes; the short bus rides from parking lot to casino, a time to talk or listen in on conversations. I would time my trips to counteract what I considered Paul's unfair treatment of me. I now had a way out: the slots.

Paul went up north for the weekend, with Bohdan, his son for the day, then topped it off with golfing. (I would liked to have been included.) No matter, I could gamble by myself; it was safe, inconspicuous, comfortable and time passed.

Paul was often too busy to take me out. He worked on the computer, or watched endless sports on TV. I would have liked more couple stuff. (I used to keep trim and slim by dancing and I miss it so.)

Visits with kids are outings for Paul, but I am new to drinking wine and conversations that often bypassed me and reverted to a language I did not understand. I could go to the casino anytime so I would select times with less traffic, a time of day when my car wouldn't overheat, and I could watch the sunset over the Burlington Skyway. The casino is open 24 hours a day.

It is important to say here that this was quite acceptable to Paul, he was off the hook so to speak. The person hooked was me. At first I went to the casino because it was something to do, then I got to like it, and finally, I had to go. It did not happen over night, or did it? For my birthday, Paul gave me a card with some money to spend at the casino. I went for the evening and stayed past midnight, until morning. This party for one became expensive as did many others.

Paul went through his own traumatic time, his wife was out of control in more ways than could be tolerated. He had many moods. He was often just quiet when he saw how miserable I looked and felt, and would say there was nothing he could say or do. He was relieved when I got home safely. Other times he would do other stuff, be out when I got home or not answer the car phone. We did not discuss our relationship. Paul is not one to verbalize; his anger comes to the surface whenever I suggest a talk.

He did notice however that I did not realize how serious this problem had become —and I didn't. I believed I could control it; I was a strong, principled person. I tried, but I could not go home once I was in the casino. I never felt tired; money did not seem real, just tokens. It was only when I had to take some money from my RRSPs that I realized I needed help.

Typical of the way we were at that time, Paul said he would get me info on gambling on his computer, but he put off doing it. In the meantime I emptied my bank account. I asked Paul to lend me some money. I should not have asked, and he should not have said no. This was probably the first time in my life I had asked for help; usually, if I couldn't get what I needed from my own earnings, I just did without. I felt many things; I was worried, lonely, but mostly, I was unhappy.

Divorce had come up when Paul was angry, even before my gambling. I told him we could go through with it, but my way was not giving up on something as serious as marriage vows. I was still firm in that belief. My resilience was law and this time I told him that his strong personality was too much for me. Divorce may have to happen if all else failed. I did not want anything of his, and he could not have anything of mine. It would have to be final and happen very quickly, not be just a word to use in disagreements. This was a day of emotional upheaval for both of us.

Help came with a phone call to the Problem Gambling Service. I spoke to Gen who explained how I could go and speak to her in confidence as often and as long as it took me to get better. Paul came with me and waited until she met us both in the waiting room. Gen then took me to her office for the first of many hour-long consultations. Gen proved to be just the person for me. We worked together each week making plans about how to get me to slow down and control the obsession —but to no avail. I did not stop gambling until October 2000 when I went to Mohawk Race Track security and registered for self-exclusion. I am certain that I would still visit the slots if I hadn't taken this drastic step.

Paul and I moved to the country, and we developed a new understanding of each other. Divorce came up once, but we both know that our life together is

good, and with mutual respect for each other we can only get happier. I no longer look to Paul to do things with me that he does not enjoy. I have regained my life. I don't allow others to impose on my territory. My personal likes, wishes and feelings are just that —personal —and I share them with discrimination. I have cultivated bonds and respect with most of the family and our friends. I had to distance myself from a couple of people and that too feels good too, because it was necessary.

I am impressed with the achievements of my therapist who helped turn my life around —just as I am incredulous that so much harm penetrated my mature and strong personality. I fantasize about visiting the casino, just as I fantasize about losing weight or winning a lottery, but I hope these things stay as possibilities and that life goes on.

Gen suggested that I have a list of things I can do when I get the old urge to flee, and now I fantasize about these things as well. Come spring (it is now mid-February), I will look for work with animals (my first love). Paul and I will drive to the ocean (my second love). If we don't go together, then I will find a way to do it myself. Other things that I like to do include going to my room, which is totally mine (no one else goes there but me) to read, write and listen to music; going for a walk or car ride. If I'm feeling really frustrated, I can check into a friendly hotel to repair whatever ails me. Closer to home, I now have my space and lots of countryside to gaze at.

This First Person Account was not peer-reviewed.

Submitted: February 20, 2001

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review

Book Review

Double Down: Reflections on Gambling and Loss

By Frederick and Steven Barthelme (1999).
New York, NY: Houghton Mifflin, 198 pages. Cloth cover.
Price: US$24.00. ISBN: 039-595-429-0.

Reviewed by Nigel E. Turner, Centre for Addiction and Mental Health, Toronto, Ontario, Canada
E-mail: Nigel_Turner@camh.net

Barry Fritz, Quinnipiac University, Hamden, Connecticut, USA

Double Down by Frederick and Steven Barthelme is an autobiographical account of two brothers' descent into gambling addiction. The twist is that it is not the gambling losses, but a bizarre legal hassle that form the conflict and (partial) resolution of the plot.

In the book, the Barthelme brothers describe how they started gambling casually, often going to the casino with friends for a good night out. After their mother's death, their gambling escalated and it increased to problematic levels following their father's death.

Double Down introduces gambling counsellors and researchers to the world of gamblers in action; gamblers that don't really want to quit. The book nicely illustrates to the reader that social class, education and intelligence do not necessarily immunize people against becoming problem gamblers. These brothers are not stereotypes of degenerate gamblers but rather more akin to the professor-gambler portrayed by James Caan in the film *The Gambler*.

The brothers do not gamble because they hate themselves or as a way to punish themselves. Difficulty coping with the deaths of their parents may play a role in their problem, but their main motivation appears to be the thrill of the experience rather than escape. The brothers want to win but can tolerate losing. In fact, they claim that losing is nearly as good as winning. About halfway through the book, they challenge the reader to experience a big loss in order to understand it. But perhaps the brothers' losses were little different from their wins because the losses have no real consequences for them. Through their jobs as English professors and their inheritances, the brothers have no shortage of money to gamble with. Even by the end of the story, after losing in excess of $250,000, they still appear to have enough money left to pay for a good lawyer.

The book also shows how gambling as a social activity does not necessarily protect people from developing gambling problems. Not only do the brothers encourage one another to go to the casino, but they also prevent each other from leaving. There are instances in the book where one of them is ready to leave the casino, but the other wants to stay to win back his losses, so the first one stays, and thus, continues to gamble. Sometimes, the brothers played all night since they were never ready to leave at the same time.

Another insight is the apparent awareness of the addiction and the nearly complete lack of motivation to do anything about it. The brothers appear to be "happily" addicted to gambling.

The weakest parts of the story are the stories of their childhood and their relationships with their parents. The family history is pretty ordinary —lacking any history of abuse, poverty, drug use, gambling problems or trauma that would make their family a plausible source of the problem. Perhaps their emotionally complex family history is a factor, but nothing leads the reader to say "There's the problem; there's the cause." This suggests that they were not

trying to escape from anything in particular, but instead, acting like spoiled middle-class kids that just want to have fun.

The one strong family connection is the deaths of three family members in rapid succession: their eldest brother, Don, followed by their mother, and then, their father. These deaths contributed to an acceleration of their gambling problems, but their problems appear to have started before the deaths. The main effect of the deaths and the substantial inheritance they received was to lessen the threat of any real financial consequences of gambling.

While too much space is taken up regarding their rather ordinary relationship with their parents, hardly any space is given to discussing the role of their wives and girlfriends. For instance, exactly how did Stephen's wife feel while he was throwing away his inheritance? The only hint we get from the book is a brief mention of a credit card ritual. Before heading off to a casino, Stephen would take out his credit cards and leave them on the table, which was an empty gesture since the brothers would obtain casino credit.

Also unexplained is the death of their brother Don and its effect on them. When did it occur relative to the beginning of their gambling problems? The authors hardly mention Don's death, except to say that it caused them both to quit smoking.

The main conflict that drives the plot of the story is that the brothers are accused and arrested for colluding with a dealer to try and cheat the casino. The casino had no real evidence other than a few sloppy plays by the dealer. It's a cautionary tale that suggests that you should not expect a casino to appreciate you after you gamble away your money. It is also a warning about the political power of the gambling industry in the United States.

At the end of the book, the reader is left dangling without any real resolution of the story or the gambling problems; although the flap on the book cover informs you that the case was dismissed. It is particularly interesting how the casino seemed to have so much difficulty understanding these brothers, and assumed that after gambling away so much money, the brothers must want to cheat.

We recommend this book for its insights into the motivations for problem gambling. The reasons offered for their gambling passion are varied. They include grieving, early wins and an emotionally complicated family of origin. But the brothers are most convincing when they discuss the thrill of risk and the excitement of entering a social world separated from their ordinary lives. The price the authors pay for this spice in their life, however, is excessive:

$250,000.

Why do people gamble? There is no single reason. Part of this book's value for counsellors and researchers is that it paints a picture of interconnecting dots, which journals in the field have difficulty capturing. It also left these reviewers with a desire to visit this changing part of the Mississippi landscape. We'd like to taste that Gulf seafood and see the bright lights on the beaches

This book review was not peer-reviewed.

Submitted: May 3, 2001

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***Barry Fritz** is professor of Psychology at Quinnipiac University, Hamden, Connecticut. He is a member of the board of the Connecticut Council on Problem Gambling. He graduated with a BA from the University of Vermont, an MA from Connecticut College, and a PhD from Yeshiva University.*

> "My current research interests are focused on understanding the motivation to gamble and those factors which differentiate between problem gamblers and recreational gamblers. I enjoy the game of poker and hope that my research will keep

me on the recreational side of the table."

Video Review

Winning Strategies: Slots with Video Poker (1997)

Running time: 30 minutes
Producer: Winning Strategies
Available at Amazon.com for US $17.99

Reviewed by Nigel E. Turner, PhD
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Late one Saturday night, I saw an advertisement on TV for a video about how to win at slots. My first reaction was "How can they legally sell such crap?" The advertisement promised legal "casino-busting strategies …designed to make you a better, smarter slots player." "Not possible," I said to myself, but being curious, I ordered a copy.

The big surprise was that it was actually quite good. The video is part of Frank Scoblete's Winning Strategies series and is narrated by Frank Scoblete. James Coburn briefly introduces the video and narrates a few bridging sequences. Far from being filled with misinformation, the video contains a lot of good information about slots. It includes a brief history of slots, a discussion of how slots actually work, a comparison of payouts in various cities around North America, money management strategies and popular myths about slots and why they aren't true. There is a brief section near the end on video poker, but it's mostly just a plug for yet another video devoted entirely to video poker.

My aim in writing this review is to describe the extent to which the information in the video is accurate or misleading and to evaluate the video for potential educational or counselling uses.

Overall, the video gives a number of good tips. It provides information about the nature of slot play and the different types of games available. It recommends using the spin button rather than the lever since less work is

involved. It recommends playing in your "comfort zone," only betting with money you feel comfortable about losing. It also suggests avoiding "progressive machines." A progressive machine is one in which the top prize increases each time a person plays the machine until the jackpot is won. These machines tend to have a lower payout to compensate for the large jackpot prize. The video also advises avoiding the oversized machines called "Big Berthas" that have a lower payout percentage than other slots because they take up more room.

But this video won't escape criticism completely —a few of the points were not adequately explained. In addition, the video encourages betting with "maximum coins" (i.e. the maximum bet allowed —often three or five quarters on a quarter machine) because the best payout comes with larger denominations. This is true. Typically, a slot may pay out 88 per cent for one quarter, but 92 per cent with three quarters. So, max coin does produce a higher payout, but most often the minimum bet will still ultimately lead to lower losses in spite of the lower payback. The video does state that losing 10 per cent of $10 is still less than losing two per cent of $100, but I don't feel that the point is made strongly enough. I also didn't like the way the video implies that money management strategies can help you win. They can't. They can only help you avoid losing too much money. The video may influence viewers and give them undue confidence in the strategies recommended in the video. As a result, they may gamble thinking that money management can help them win.

Many problem gamblers might benefit from watching parts of this video. However, be very selective about which parts of the video to show them because some sections promote the idea that slots are fun and exciting. The sections on how slots work and gambling myths are particularly good and would be appropriate for clients. The section about money management strategies may not be helpful because it sounds like keeping to the system will help you win. However, keeping to the system will only limit how much you lose. For a non-problem population (i.e. primary prevention and education), the entire video may be appropriate if followed by a brief discussion of the limits of money management.

This video is actually quite good and sections of it might be useful in a clinical setting, but only under supervision and with appropriate debriefing. Although it comes with criticism, it does provide better information than many other "how to gamble" books and videos. I have only two objections. First, the promised video poker section was little more than a plug for another video. (Advertising gambling in books and videos is very common.) Second, the advertisement of this video promises strategies that will help you win. Such a promise would be impossible since slot wins are purely a matter of chance; however, people will

buy the product expecting to learn how to win.

They've marketed it quite cleverly —it doesn't say you will win, but only that you "might" win since careful playing strategies —specifically money management —can stretch your playing time without stretching your risk. I suspect that the people who will buy this video after watching the advertisement will be annoyed when they realize that it doesn't tell them how to win. However, it would be interesting to survey people who purchased the video to see if the video influenced how they play.

This video review was not peer-reviewed.

Submitted: August 1, 2000

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letters

I have read the article by Barry Fritz ...

I have read the article by Barry Fritz ("Chips, Chatter and Friends") in Issue 3. As the partner of someone with a gambling problem, I would like to comment.

The article makes it sound like there can be nothing better in life than gambling. And that the "special people" one can meet while gambling are somehow more special than people met elsewhere. He seemed proud to say that the "elderly lady" defined her own character by her poker playing!

I could substitute my wife with the narrator of this article, and picture her, in the depths of her problem, validating and rationalizing her "hobby" and her newly found "friendships."

She read the article and immediately fell into the trap of "Why can't that be me?" She became irritated and provoked and was inspired to gamble!!

Other articles in EJGI address the roots of gambling and attempt to clinically analyze problem gambling. The Fritz article covers the joy of gambling!

Am I so focused on the problems that I missed something here? It has certainly promoted discussion.

Thanks for your hard work.

[Name withheld by request]

Received: February 22, 2001

"...the pain symptoms disappeared when I play poker"

I have arthritis. I noticed that the pain symptoms disappeared when I play poker.

I attributed that effect to a) distraction , b) endorphin production as a result of playing, or c) some other physiological process as a result of the excitement of gambling.

It would be interesting to have a look at people who gamble recreationally, the elderly playing bingo, for example, to see if they get pain relief from the activity. It would also be of interest to develop a laboratory analog of gambling, where we have the subjects experience a mild aversive stimulus (unpleasant noise) and see if the gaming experience blocks the unpleasantness of the noise.

Are there studies that measure endorphin production while people are gambling? This information might also be useful to have.

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Received: May 17, 2001

This letter is in reference to a discussion on gambling as analgesic (or pain reliever) in Issue 4 – the Editor <http://www.camh.net/egambling/issue4/case_conference/index.html>

Don't Repeat the Mistakes

I have worked in the treatment of substance use problems for over 20 years. In that time, I've seen numerous errors committed repeatedly by most of the many addictions workers I've known. At the time of this writing, serious thought is being given in the United States to allotting major federal funding to "faith-based" programs to provide drug and alcohol addictions treatment. As one critic put it, the public sees secular treatment programs as failures. Regardless of what one thinks about the faith-based idea, the accusation has merit. It does because of several clinical (read: crucial content) mistakes that have been made in alcohol and drug addictions treatment.

The issue of gambling is relatively new in the addictions field, and represents the chance to start afresh. Professionals working with gambling problems can learn from the errors encountered in drug and alcohol addictions treatment.

This is an outline of the more common mistakes in drug and alcohol addictions work. They are, of course, highly interrelated.

1. Lack of critical thinking

Drug and alcohol addictions treatment workers often stay with just one set of ideas throughout their professional lives, especially ideas originating with what worked in their own recoveries or what they learned in school. Many workers become defensive when asked to consider new concepts, especially those that contradict their original set of beliefs.

Addictions clinicians need to logically and objectively consider new information, regardless of their fondness for other ideas. Doing so is the only way to grow and to bring optimal benefits to our clients. New ideas may or may not be accepted finally, but

fresh information always deserves serious examination.

2. Disregard for research

Disturbingly, very little attention has been given to research findings in drug and alcohol addictions treatment. Part of this is the responsibility of the workers themselves who are too comfortable in their assumptions. Another part is on researchers who too often make little effort to speak easily understood English. However, addictions bureaucracies have also contributed to this avoidance. "Clinical supervision" usually becomes just an administrative backup job, rather than real guidance of staff in best practices.

Administrators and staff of treatment programs need to put as much emphasis on research currency as on administration. Researchers need to make increased efforts to reach out to workers to communicate empirical findings.

3. Fondness for simple answers

A "Keep it simple" approach may be helpful for some addicts in early recovery, but it's no way to think about addictions treatment. However, simplistic ideas have been remarkably popular with drug and alcohol addictions workers. Prime examples concern what works in treatment, what causes addiction and how the families of addicts behave. As recent high-profile chaos theory explains, though, we must be willing to sort through complexity to discover real patterns and cause and effect.

Addictions workers need to examine all possible factors that may contribute to the phenomena they see in their work to determine the best ways to approach the problems encountered by addicts and their friends and families. The reality of what is happening with our clients can be clarified, but only with intellectual effort.

4. Blaming the client

"She's in denial. He's not ready." These are popular responses by addictions workers to failures of treatment. Infrequently do staff realize that they are the ones in denial (about the need to

advance their clinical skills) or lacking readiness (to make changes in their work). Blaming the clients puts staff in the comfortable position of not having to question their own abilities — and of telling the public that addictions treatment failures are not due to staff practices, but to the nature of the addicts.

The drug and alcohol addictions treatment field has developed stereotypes about family members and others close to addicts, stigmatizing them as pathological people who have deliberately contributed to the continuation of the addiction. There is no well-executed research that substantiates any such profile, but the blame continues.

Mothers have also been solely blamed for alcohol- and drug-related birth defects, even though evidence exists that fathers' substance use affects their reproductive success.

In the tradition of critical thinking, addictions workers need to always question whether their treatment practices are adequate in light of the inherent resistance in addicted clients. Putting the blame on the clients is not helpful, and indeed, clinically, leaves us at a dead end. And when clients are stigmatized by professionals, objectivity and inquiry are typically absent.

Those who work with problem gamblers as well as any other type of addictive behavior or substance addiction may enjoy reading the articles listed below, which expand on the points in this letter.

Suggested readings:

Babcock, M. (1995).
Critiques of codependency: History and background issues. In M. Babcock & C. McKay (Eds.), *Challenging Codependency: Feminist Critiques* (pp.3–34). Toronto: University of Toronto Press.

Brown, J.D. (1991).
The professional ex: An alternative for exiting the deviant career. *The Sociological Quarterly, 32*, 219–30.

Chiauzzi, E.J. & Liljegren, S. (1993).
Taboo topics in addiction treatment: An empirical review of clinical folklore. *Journal of Substance Abuse Treatment, 10,* 303–16.

Cicero, T.J. (1994).
Effects of paternal exposure to alcohol on offspring development. *Alcohol Health and Research World, 18,* 37–41.

Hare-Mustin, R.T. (1994).
Discourses in a mirrored room: A post-modern analysis of therapy. *Family Process, 33,* 19–35.

Kanda, Z, & Oleson, K.C. (1995).
Maintaining stereotypes in the face of disconfirmation: Constructing grounds for subtyping deviants. *Journal of Personality and Social Psychology, 68*, 565–79.

Orford, J. (1992).
Control, confront or collude: How family and society respond to excessive drinking. *British Journal of Addiction, 87,* 1513–25.

Taleff, M.J. & Babcock, M. (1998).
Hidden themes: Dominant discourses in the alcohol and other drug field. *The International Journal of Drug Policy, 9*, 33–41.

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Received: August 3, 2001

TriCounty Addiction Services Concerned About Insufficiency of Public Education Campaign Intended to Address Gambling Issues

On May 2, 2001, the Board of Directors of the TriCounty Addiction Services

(TriCAS) of Lanark, Leeds and Grenville, Ontario, circulated a letter to the editor to newspapers, radio and TV stations, and public groups expressing our concerns:

Ontario provincial government policies about gaming are pro-gambling without thorough examination of the social, economic and personal impacts of gaming and without proper disclosure to the public of the nature and scope of policies bearing on expansion of gambling. We noted particularly the planned introduction of interactive slot machines —essentially video slot machines —to charity casinos and racetrack gaming floors, without requirement for a public approval process or announcement, and before the completion of impact studies at all charity casinos.

Designated addiction service agencies and other stakeholders dealing with gambling research and treatment were professing a "gambling neutral" position that inappropriately became "gambling policy neutral" and failed to ensure the public would be sufficiently informed to choose wisely about the processes by which the gaming industry is expanding into our communities and about personal involvement in gambling activities.

A pro-gambling shift in most media coverage accompanied that very audible silence of the addiction service agencies and other stakeholders dealing with gambling research and treatment, and there seemed to be collusion between them and the provincial government to delay release of a strong, well-researched, province-wide problem gambling awareness campaign, which addressed risks, costs to society and how to seek help.

We were concerned that we had become inadvertent partners in that silence. Such a campaign had been produced at a cost of approximately $200,000 and was ready to distribute. Advertisements in all media and glossy, coloured posters and brochures were to be distributed to designated treatment agencies in September and October 2000. Our local interest was to have that material circulated prior to municipal referendums in November 2000 to decide voter interest in building a charity casino in the 1000 Islands area east of Kingston. But that did not occur, as the campaign did not go public until mid-May 2001, after the referendums had passed and construction of the 1000 Islands Charity Casino was underway.

Organized and managed by the [then] Canadian Foundation on Compulsive Gambling (Ontario)[currently the Responsible Gambling Council (Ontario) - ed.], the Ontario Partners for Responsible Gambling campaign was diminished to some pale posters and pamphlets and black-and-white local newspaper ads that ran for 22 weeks. This is a far cry from the promised campaign that was to make "Ontarians . . . aware of the problem of and

warnings signs for problem and compulsive gambling, and the treatments available." It was also to "communicate with the target audience when they are most susceptible to receiving the message . . . ." Like before a referendum? Or before a new charity casino opens locally?

Since our original letter, little has changed, and we now have additional concerns:

- Delay of the first component of the campaign, aimed at adult treatment, makes the next components, aimed at prevention for adult, youth and older adults, untimely because research tells us that youth and seniors are the highest at-risk groups.
- Approximately $200,000 was spent to develop the educational products that we have, but is a mere drop in the bucket when approximately $39 million was spent last year by the Ontario Lottery and Gaming Corporation to promote gambling.
- Our agency has not yet received monies promised by the Ontario Substance Abuse Bureau to purchase software and projection equipment needed by our problem gambling addictions counsellor to enable use of the Community Awareness Resource Package at speaking engagements and presentations.
- Our failure to be in the minds of the public may have had repercussions in local town councils, which refused a baseline study of gambling before the 1000 Islands Charity Casino opens.

Some of the questions we are left asking ourselves are

- How do we as volunteers, who commit our time and energy out of concern for our communities, justify our work to them, and our spending of public dollars, if we do not insist on a strong public awareness and problem gambling campaign?
- Without such a campaign and the resources to disseminate it, our capacity to address problems after the fact is hardly accountable. We are aware that any public messages about problem gambling —no matter the media in which they appear —must be repeated over and over for a long time before they become part of public consciousness.
- Do we want our communities to recognize the importance of having input into policy developments that govern both the expansion and management of gaming? If so, communities must first have the information to make informed choices and decisions.

- Providing information to assist the public in making informed choices and having opportunities to give input regarding strategic planning and policy-making is an appropriate way to be accountable to the taxpayers who fund us. Where are our professional and academic colleagues in taking responsibility to promote this accountability?

Addiction service agencies work to address the development of municipal alcohol policies and workplace safety policies. We notice that such work has occurred historically after the fact of awareness about consequences of problem drinking in public places. If we are to learn from our belated response to addiction risks, we need to develop public consciousness now about problem gambling. Communities need preliminary studies prior to establishing new gambling venues, to better assess and address social and financial impacts and accomplish better strategic planning. Again, a solid problem gambling public awareness campaign is necessary.

We do not see our arguments as gambling neutral or anti-gambling, but "pro-learning" ahead of time about the benefits of gambling and the risks of problem gambling. We invite your readers to speak out on these issues and to raise these concerns in their communities.

Sincerely,
John Gill
Chairperson
Board of Directors, TriCounty Addiction Services (TriCAS) of Lanark, Leeds and Grenville

Received: October 5, 2001

We invite our readers to submit letters on gambling topics. Please note that we can publish only a fraction of the letters submitted. All letters must be signed. We cannot publish anonymous letters, or those of a libellous nature. Letters to the Editor are reviewed and chosen by the editor and members of the editorial board. Letters may be sent by e-mail or to the mail address given below. Once a letter is accepted, we will request an electronic version. Each published letter will include the writer’s first and last names, professional title(s) if relevant, city, province or state, and country. Alternatively, for good cause, the editor may confirm a letter's authorship and publish it as [Name withheld]. We reserve the right to edit each submission for uniform format and punctuation.

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Invitation to Contributors

We welcome contributions on gambling and gambling-related issues. Please note that submitted manuscripts are limited to 5000 words in length, not including a 150 word abstract and references. (For First Person Accounts and Reviews please see below.) Prospective authors should always read the last issue of *EJGI* for the latest version of Invitation to Contributors. We encourage electronic submission and accept mail submissions, but cannot accept fax submissions. For details, please see the submission process below. All authors whose manuscripts are accepted will receive a standard legal form to complete, sign and return by mail.

The Review Process

All submitted manuscripts (except Reviews) are reviewed anonymously by at least two people. Each reviewer will have expertise in the study of gambling and will assess and evaluate according to the criteria listed below. The editor will mediate their assessments and make the final decisions.

Submissions are either

1. accepted as is, or with minor revisions;
2. returned with an invitation to rewrite and resubmit for review, or
3. rejected. (Decisions of the editor are final and cannot be appealed.)

Authors will receive an e-mail copy of their manuscript before publication, and must answer all queries and carefully check all editorial changes. Please note that there will be a deadline for a response to queries and no corrections can be made after that date. Authors are responsible for the specific content of their manuscripts.

Feature articles

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Research

We invite researchers to submit manuscripts that report new findings on gambling. All submissions will be peer-reviewed in confidence by at least two reviewers for their scientific merit, and mediated by the editor.

Policy

We invite manuscripts that examine policy issues involving gambling. All submissions will be peer-reviewed in confidence by at least two reviewers and mediated by the editor. The editor will evaluate how successful the author is in exploring how gambling affects public life and policy, historically and currently.

Clinic

All submissions will be peer-reviewed in confidence by at least two clinicians and mediated by the editor for their soundness and value to

practicing clinicians.

First Person Accounts

These narratives will show how gambling affects the author and others (perhaps as family, friends, gambling staff, or clinicians). Submissions will be reviewed in confidence by at least two reviewers and mediated by the editor. The editor will evaluate how successful the author is in making gambling issues come alive to the readers. First Person Accounts do not need abstracts or references.

Reviews

Reviewed by the editor, these brief summaries and discussions will evaluate gambling-related books, videos, Web sites and other media in 1,000 words or less. Reviews should have references if cited, but do not need abstracts.

Letters to the Editor

We invite our readers to submit letters on gambling topics. Please note that we can publish only a fraction of the letters submitted. All letters must be signed. We cannot publish anonymous letters, or those of a libellous nature. Letters to the Editor are reviewed and chosen by the editor and members of the editorial board. Letters may be sent by e-mail or to the mail address given below. Once a letter is accepted, we will request an electronic version. Each published letter will include the writer's first and last names, professional title(s) if relevant, city, province or state, and country. Alternatively, for good cause, the editor may confirm a letter's authorship and publish it as 'Name withheld on request.' We reserve the right to edit each submission for readability, uniform format, grammar and punctuation.

Submission Process

We accept submissions in Microsoft Word, WordPerfect (PC) or ASCII formats. We regret that we cannot accept Macintosh-formatted media. Communications can be sent electronically to (phil_lange@camh.net) to the editor for review. We will take all possible care with submissions. Neither the editor nor the Web site managers accept the responsibility for the views and statements expressed by authors in their communications.

Authors opting to submit hard copies should mail four copies to the address below and ensure that the guidelines are followed. If possible, an e-mail address should accompany mail submissions.

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Manuscripts should be word processed in Times New Roman 12-point typeface, and should be formatted with 1.25 inch margins on all four sides. Do not use a font size smaller than 10 anywhere in the manuscript. The first page should be a title page and contain the title of the manuscript, the names and affiliations of the authors, their addresses and e-mail addresses. The second page should only have the manuscript title and the abstract; this is for the purpose of anonymity. This abstract (of 150 words or less) should describe what was done, what was found and what was concluded. List up to eight key words at the bottom of the abstract page. Minimally, an abstract should be structured and titled with objective, methods or design, sample, results and conclusion. The structured abstract format is acceptable, but not required.

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Examples:

Books

Lesieur, H.R. (1984). The Chase: The Compulsive Gambler. (2nd ed.). Rochester, VT: Schenkman Books, Inc.

Book chapters

Shaffer, H.J. (1989). Conceptual crises in the addictions: The role of models in the field of compulsive gambling. In H.J. Shaffer, S.A. Sein, B. Gambino & T.N. Cummings (Eds.), Compulsive Gambling: Theory, Research, and Practice (pp.3-33). Lexington, MA: Lexington.

Journal articles

Gupta, R., & Derevensky, J. (1997). Adolescent gambling behavior: A prevalence study and examination of the correlates associated with problem gambling. Journal of Gambling Studies, 14 (4), 319-345.

Miscellaneous articles, including government publications

Ontario Ministry of Health. Schedule of Benefits, Ontario Health Insurance Plan. Kingston, Ontario: Ontario Ministry of Health; April 1987.

Papers presented at a conference, meeting or symposium presentation

Ganzer, H. (1999, June). A seven session group for couples. Paper

presented at the 1999 13th National Conference on Problem Gambling, Detroit, MI.

Signed newspaper article

Brehl, R. (1995, June 22). Internet casino seen as big risk. The Toronto Star, pp. D1, D3.

If the article is unsigned or the author's name is unavailable, begin with the title:

Man gambled crime returns at casino. (1996, February 9). The Christchurch Press, pp.32.

Electronic source

Brown, S., & Coventry, L. (1997, August). Queen of Hearts*:* The Needs of Women with Gambling Problems, (Internet). Financial and Consumer Rights Council. Available: http://home.vicnet.net.au/~fcrc/research/queen.htm.

Tables

When submitting tables within the text, indicate the approximate position of each table with two hard returns and dotted lines above and below each location, as illustrated here.

Table 1 about here

Please submit your manuscript with the tables after the references.

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Authors whose manuscripts include graphs or illustrations should communicate with the editor regarding submission formats and standards.

Abbreviations

Well-known abbreviations (e.g., DNA, EKG) may be used without definition; all others must be defined when first used. Except in First Person Accounts, measurements should be stated first in metric units and, if desired, then using British, American or other local equivalents in parentheses. For example, "The two casinos are 10 km (6 miles) apart." However for First Person Accounts authors may use whatever measurements they prefer. Other units of measurement should be used in accordance with current custom and acceptability. Generic names of drugs are preferred; a proprietary name may be used if its generic equivalent is identified.

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links

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http://www.ncpgambling.org NEW

National Council on Problem Gambling : to increase public awareness of pathological gambling, ensure the availability of treatment for problem gamblers and their families, and to encourage research and programs for prevention and education.

http://www.gov.ab.ca/aadac/addictions/subject_gambling.htm

Alberta Alcohol and Drug Abuse Commission: information, brochures and survey results

http://www.responsiblegambling.org

Responsible Gambling Council (Ontario): information, publications and calendar of international gambling-related events

http://www.unr.edu/unr/colleges/coba/game

Institute for the Study of Gambling and Commercial Gaming: an academically oriented program on gambling and the commercial gaming industries

http://www.ncrg.org

National Centre for Responsible Gaming: funding for scientific research on problem and underage gambling

http://www.problemgambling.ca

Problem Gambling: A Canadian Perspective Website (Gerry

Cooper): annotated international links

http://www.youthgambling.org

Youth Gambling Research & Treatment Clinic (McGill University, Montreal, QC, Canada): information, self-quiz and FAQ's

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