

## Selling dreams—causing nightmares? On gambling advertising and problem gambling

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### Abstract

A review of the literature leads to the conclusion that there are no reliable figures on the impact of gambling advertising on the extent of problem gambling. To measure that impact appears as a very difficult research task. However, we can infer that gambling advertising does add to problem gambling, but with a smaller impact than other influential factors. Thus, alarming claims that gambling advertising substantially increases problem gambling and reassuring statements from gambling companies that advertising merely affects market share and has no impact on the prevalence of problem gambling both appear to be erroneous. Gambling providers are advised to avoid publishing advertising that elaborates on features of gambling known to relate to problem gambling. The controversial nature of gambling advertising is illustrated by the case of Sweden, where advertising and its impact on problem gambling have been hotly debated over the past decade.

**Keywords:** gambling, problem gambling, advertising, marketing, promotion

### Introduction

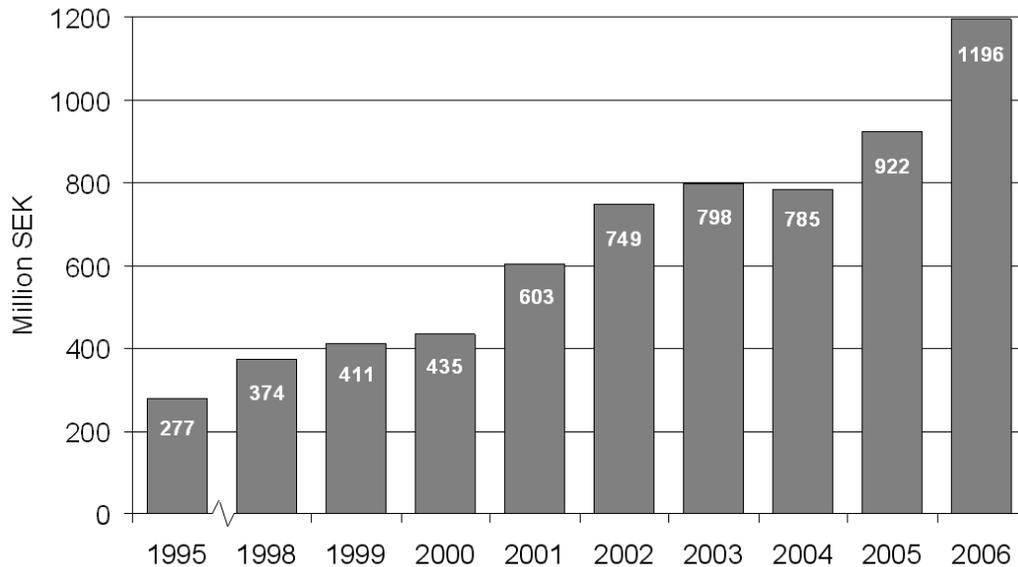
Gambling advertising is controversial in many countries. A telling example is the case of Sweden, where it is repeatedly claimed in public debate that it is unethical to promote an activity with an addictive potential, and that gambling advertising is often misleading; encourages fatalism, materialism, hedonism, and irrationality; undermines the work ethic; and increases the prevalence of problem gambling (Binde, 2005a).

In Sweden gambling advertising is generally perceived as becoming increasingly conspicuous and insistent, and the term 'aggressive' is often used to describe it. This perception has a basis in fact, as the amount of gambling advertising has indeed increased significantly in recent years. Figure 1 shows the estimated total outlay (before rebates) in recent years for gambling advertising in the Swedish mass media (TV, movies, newspapers, magazines, and billboards).

Advertising expenditures in 2006 were more than four times as high as in 1995. This increase reflects a rise in advertising volume, with inflation in this period accounting for only approximately 11.5% of the increased expenditures. Overall, the rise in advertising expenditure has exceeded the rise in the gambling companies' gross

Figure 1

*Outlay for gambling advertising in Swedish mass media (million SEK, before rebates)*



Source: SIFO/RM, Research International. Figures for 1996–1997 were not available. 100 million SEK  $\approx$  11 million EUR or 14 million USD.

turnover. The slight decrease in advertising expenditure in 2004 compared to 2003 stems from a ruling of the Supreme Administrative Court, confirming the contested prohibition against the Swedish mass media publishing ads for foreign gambling companies. The significant increase in 2005 and 2006 compared to 2004 reflects that foreign companies intensely marketed Internet poker by advertising on TV channels available for viewing in Sweden but not governed by Swedish law.

Over the same period, i.e., the last decade, awareness of problem gambling has increased greatly. Problem gambling has become a common topic in Swedish newspapers, and it is regularly debated in Parliament and on TV. There is a widespread perception that problem gambling has become more common in recent years. Although there are no academic studies that confirm this, one gambling company's yearly surveys of gambling behaviour suggest a slightly increased prevalence of problem gambling in 2005 compared to 2004 (Svenska Spel, 2005).

Thus, there is a perception that gambling advertising has become increasingly extensive and aggressive and that problem gambling is becoming more widespread, almost in an epidemic fashion. A causal link is suggested: the insistent exhortation in advertising that people should gamble more is effective, causing a substantial number of people to gamble excessively.

This article discusses to what extent this might be true. Gambling advertising does sell the dream of winning a fortune, but does it cause some people to experience the nightmare of becoming addicted to gambling? Does advertising on TV, in newspapers and magazines, and on billboards add to problem gambling, and if so, to what extent? First, the few existing studies that have a bearing on the subject will be reviewed. Then follows an attempt to assess, in approximate terms, on the basis of available facts, the impact of gambling advertising on problem gambling. Suggestions are made here for future research in this difficult field of inquiry, and finally some implications for the responsible provision of gambling are pointed out.

## Empirical studies

### Econometric studies of advertising impact

Most gambling companies keep statistics on the influence of advertising campaigns on the sales of various types of games, but such data, although useful for marketing purposes, are rarely made public and may not meet scientific standards. Academic econometric studies of gambling advertising are rare. A few studies compare advertising expenses and/or volume with sales of gambling products, and from that draw conclusions regarding advertising efficiency. One such study is *Over- or under-advertising by state lotteries* by the economist Ping Zhang (2004). This study of lottery advertising in three American states concludes that the impact of advertising on sales is fairly large compared to many other consumer products; a 1% increase in advertising spending would increase sales by 0.1% to 0.24%. A similar study of lottery advertising in the state of Colorado, however, found no significant effect of TV and radio advertising on lottery sales (Heiens, 1999). An analysis of the purchase pattern of lottery tickets in the state of Florida found a negative binomial distribution, suggesting that advertising and other marketing efforts (except for the degree of retail distribution) had little effect on the aggregate size of the lottery market once it matured (Mizerski & Mizerski, 2001; Mizerski, Miller, Mizerski, & Lam, 2004). However, since no comparison was made between periods of different levels of advertising, no definite conclusion could be drawn regarding advertising impact on sales (Mizerski & Mizerski, 2001, p. 144).

Conflicting results such as these are to be expected with regard, more generally, to the issue of advertising efficiency, on which scholars tend to disagree (Kim, 1992). A saying in the advertising industry is that 'only half of the advertising works, but we don't know which half'. In the 1960s it was concluded, 'there is no more difficult, complex, or controversial problem in marketing than measuring the influence of advertising on sales' (Bass, 1969, p. 291). Although advances have since been made in advertising research, this statement still largely holds true today.

It is fairly evident, however, that some advertising campaigns are quite effective in that they make people consume more of a specific gambling product. To increase sales is the rationale of gambling companies spending huge sums on advertising. If

advertising did not maintain or increase sales, there would be no reason to spend money on it. However, in a mature and competitive market the gain in sales for one product often leads to a decrease in sales for another similar product. While advertising may thus work well for each company, by maintaining or increasing sales, the volume of the market as a whole may be unaffected. Advertising may primarily affect the market share of competing products and companies.

Studies that aim at analysing the relationship between volume of advertising and volume of the gambling market as a whole or for specific products face several challenges. They may need to take the following into account:

- There are probably differences in the effect on gambling behaviour between informative advertising (e.g., telling about a new jackpot) and brand and profile advertising (e.g., associating gambling products with certain attitudes and lifestyles).
- Market segments have different degrees of maturity; generally, advertising has a greater impact when the market is immature.
- Advertising has a saturation effect (increased advertising yields diminishing returns in sales).
- Many companies follow a rule of thumb that advertising should be proportional to sales. If sales of a particular product are rising, the company spends more money on advertising that product. This creates a covariation between advertising volume and sales that can be falsely interpreted as advertising causing an increase in sales.
- There are many factors other than advertising that influence the extent of gambling, such as huge jackpots, change in payback percentages of games, introduction of new forms of gambling, significant changes in how games are played, public debate on the risks of gambling, increased availability of gambling through an increased number of sales outlets, and availability on the Internet and via cell phone.
- There are relations both of complementarity and substitution in the leisure and entertainment sectors: variations in the extent of gambling may have to do with the attractiveness of other forms of entertainment and leisure activities.
- There are differences between market segments where there is competition and segments where there is monopoly; in the former case advertising is more likely to affect the size of market share and in the latter case it is more likely to affect total sales (cf. Productivity Commission, 1999, chap. 16, p. 37).

The potential difficulties for assessing advertising impact on the extent of gambling are thus many. The more complex the market, the more problems arise. If the ambition is to analyse the impact of advertising on *problem* gambling, rather than on gambling more generally, there are additional difficulties. Given this complexity, it is not surprising that there seem to be no studies that (a) measure to what extent advertising increases sales of gambling products and then (b) in some way extrapolate to an eventual increase in problem gambling. The problems involved in taking the second step, from an increase in gambling to an increase in problem gambling, will be discussed later in this paper.

## Questionnaire studies

Few quantitative questionnaire studies have a bearing on the possible impact of gambling advertising on problem gambling. The studies discussed in this section are all that were found by the present author in a fairly thorough search of the literature.

A study conducted in New Zealand employed a sample of 143 gamblers of four types: (a) probable pathological gamblers and (b) problem gamblers, as well as frequent gamblers who did not experience gambling problems and played either (c) continuous or (d) noncontinuous games (Abbott, Williams, & Volberg, 1999). Respondents were asked, among other questions, to what extent they recalled gambling advertising. Probable pathological gamblers showed a pattern of recall that differed slightly from those of the other groups, but the differences between the groups were generally small.

Several studies, however, have found that people who gamble more than average recall seeing more gambling advertising than others do (Amey, 2001, p. 178; Carlson & Moore, 1998; Clotfelter & Cook, 1989; Stranahan & O'Malley Borg, 1998). It is not clear, however, whether this covariance is because (a) those who see a lot of gambling advertising are persuaded to gamble more than average people do, or (b) those who gamble a lot are interested in gambling and are thus more attentive to such advertising. Both causes appear to be possible and may have a simultaneous impact, though other factors may also be at work in creating covariance. For example, if younger people gamble more on a specific type of game than older people do, and also spend more time viewing TV channels with a lot of advertising for such games, then there will be a covariance between recall of such advertising and participation in such games without there necessarily being a causal connection. In marketing science, determining the causality of covariance between advertising recall and consumer behaviour has long been a problem (e.g., Palda, 1966).

In these questionnaire studies separate questions dealt with advertising recall and gambling habits, and the answers to the questions were then compared. Another approach is to ask respondents how they think they have been influenced by gambling advertising. A Canadian survey of youth between 10 and 18 years old indicated that over 90% of respondents recalled seeing advertising for lotteries on TV, as well as on billboards (69%), in newspapers (68%), and in magazines (55%) (Felsher, Derevensky, & Gupta, 2004). Among those who recalled seeing such advertising, 39% thought that because of this they would be more likely to buy lottery tickets.

In a Swedish study (Jonsson et al., 2003) 151 people without gambling problems were compared to 151 problem gamblers. The participants in the study were selected from respondents to a prevalence study conducted 2 years earlier (Rönnerberg et al., 1999) according to a 'twin' design: each problem gambler was matched with a non-problem gambler with respect to age, sex, and social characteristics. Problem gambling was defined as scoring 3 or more on the South Oaks Gambling Screen (SOGS, lifetime measure, Lesieur & Blume, 1987) in the prevalence study. The extensive battery of

screens and questionnaires administered to the 302 participants included a question asking to what extent the respondent had been tempted by gambling advertising to gamble more frequently or spend more money on gambling. A statistically significant difference was found between the two groups: problem gamblers reported to a greater extent than non-problem gamblers to have been influenced by advertising. Inspecting the distribution of responses on the 5-point Likert-type scale used in the questionnaire reveals that the difference arises mainly from problem gamblers stating to a greater extent than non-problem gamblers that they were 'scarcely' or 'somewhat', rather than 'not at all', influenced by gambling advertising (J. Jonsson, personal communication, February 28, 2004).

It should be noted that in this Swedish study, the great majority in both groups of gamblers report that advertising had little or no impact on their gambling habits: 71.2% of problem gamblers answered that they had 'not at all' or 'scarcely' been influenced by gambling advertising, while the corresponding figure for non-problem gamblers was 77.9%. Only 8 of the 151 problem gamblers and 5 of the 151 non-problem gamblers reported that advertising influenced their gambling 'quite a lot' or 'very much'. A notable weakness of this study is that the 'problem gamblers', according to the definition used in the study, at the time of answering the question on advertising impact had a mean past-year SOGS score of 2.48. Thus, the majority had no or only minor current problems with gambling; only 2 of the 151 'problem gamblers' reported having ever sought help for gambling problems.

In an American study there was, however, no doubt that the participants had severe gambling problems, since they consisted of 131 pathological gamblers in treatment (Grant & Kim, 2001). Pathological gambling according to DSM-IV criteria (American Psychiatric Association, 1994) was verified by clinical assessment, and the mean SOGS score was 14.1. The respondents had spent on average 16 hours a week and 45% of their income on gambling. A quarter of them had committed crimes in order to pay gambling debts. The study included a question regarding the perceived impact of gambling advertising, and 46% of the participants reported that the urge to gamble was triggered by advertising on billboards, television, or radio. No other phenomenon was mentioned as a trigger to a similar extent. The second most common trigger was 'boredom/free time' (24%), and the third most common was 'thoughts of winning' (19%).

This American study found that those who reported gambling advertising as a trigger appeared to have developed pathological gambling comparatively rapidly. The two researchers conducting the study suggest that the reason for this may be that 'constant exposure to specific triggers to urges would naturally reinforce the behaviour, and this may explain why these subjects progressed to pathological gambling quickly' (p. 961). It should be noted, however, that in other investigations of the triggers experienced by problem gamblers advertising has not emerged as important (Brown, 1987; Hodgins & el-Guebaly, 2000, 2004; Hodgins & Peden, 2005).

Canadian female gamblers who had concerns about their gambling but were not in treatment were the participants ( $N = 365$ ) in a study of various aspects of problem

gambling (Boughton & Brewster, 2002). When addressing the importance of 20 items in creating urges and temptations to gamble, 20% indicated that 'exposure to ads on TV, billboards and newspapers' was 'very or extremely' important. The most commonly endorsed item was 'feeling that my luck will change' (67%), while the least endorsed was 'drinking or drug use' (8%).

The four questionnaire studies described above, in which respondents were asked to assess the impact of advertising on their propensity to gamble or on their gambling habits, have several limitations. First, when respondents are asked about the urge to gamble or likelihood of gambling, it is not clear to what extent this self-assessment reflects actual influence on gambling behaviour.

Second, assessing the impact of advertising on one's own mental processes and behaviour may be difficult. A person's consciousness of advertising impact ranges from high to low. An example of high consciousness would be someone noticing an ad in which a casino offers food and entertainment at a good price. The person subsequently visits the casino, dines, is entertained, and gambles. In retrospect, the person can state that had it not been for seeing the ad, he or she would not have gambled that evening. An example of low consciousness would be someone reading a newspaper article located next to an ad for a scratch lottery ticket. Some days later, the person passes by a billboard advertising the same lottery; later that day, when buying a chocolate bar in a convenience store, he or she gets the idea of buying a scratch lottery ticket as well. If asked about the reason for buying the ticket, the person may reply that the purchase was on a whim and say nothing about the ads, which were barely noticed but nevertheless entered his or her mind.

Psychological research has shown that advertising influences people in ways in which they are largely unaware (Harris, 1987; Krugman, 1965, 1968, 1977, 1988; Messaris, 1992; Walsh & Gentile, in press). People may be exposed to ads that they barely notice, but that nevertheless influence their behaviour, for example, when they have to choose between two brands of a similar product in a store (Krugman, 1977). Repeated exposure to an advertising message may lead to a subtle, and for a person unnoticeable, restructuring of perceptions of and attitudes to brands and products (Krugman, 1965). The impact of advertising on aggregated consumer behaviour can be substantial, even if the impact on the individual is small. People who have not thought of buying a specific product will hardly be persuaded to do so by advertising, but those who are already thinking of buying it might be. In a large population these people constitute a considerable number of consumers. Furthermore, advertising often appeals to emotion and imagination rather than rational thought, and is therefore difficult to handle with critical reason: 'the most effective influence occurs when the person influenced doesn't realize it is happening' (Walsh & Gentile, in press).

Yet another problem obscuring the degree of advertising impact is present when someone is asked to self-report on the impact, constituting a third limitation of these studies. To admit that advertising has a major impact on *oneself* is to present oneself

as easily led and somewhat unintelligent. In psychology, the third-person effect is well documented (Davison, 1983): individuals tend to rate the influence of persuasive messages in mass media to be higher on others than on themselves. Probably, the third-person effect is created by both the understatement of the persuasive effect on oneself and the overstatement of the effect on others. The effect is particularly strong with respect to advertising for stigmatized products such as cigarettes and alcohol (Banning, 2001).

Two studies document the third-person effect with respect to gambling advertising (Shah, Faber, & Youn, 1999; Yuon, Faber, & Shah, 2000). In one of these studies (Youn et al., 2000) respondents were asked to what extent they agreed with statements that advertisements for lotteries had a powerful effect on themselves and on others. The responses on a 5-point Likert-type scale ranged from 1 ('strongly disagree') to 5 ('strongly agree'). The mean score for advertising impact on oneself was 2.09 while the score for impact on others was 3.78; thus, individuals considered lottery advertising to have a small effect on themselves but quite a large effect on others. The study revealed that the more someone believed that others were influenced by lottery advertising, the more willing that person was to censor such advertising. There was no such linkage between censorship attitude and perceived effect of advertising on oneself.

Finally, a fourth limitation of self-reporting studies is the difference between non-problem and problem gamblers in terms of their reactions to gambling advertising. For non-problem gamblers, gambling advertising is merely one of many types of advertising that compete for attention. It does not generally attract more attention than advertising for other products does, and, as argued above, non-problem gamblers are likely to underestimate advertising impact, since at least some of it 'slips under the radar' of full attention and conscious examination. In contrast, problem gamblers, who are aware of their problems and are trying to cut down or abstain from gambling, may notice gambling advertising to a much greater extent. Unpublished results from a qualitative interview study of gambling advertising and problem gambling conducted by the present author (Binde, 2007), indicate that the exhortation to gamble delivered by advertising is often clearly noticed by problem gamblers, setting off a conscious mental process characterized by conflicting impulses, emotions, and thoughts. These might include the desire to gamble, distaste for gambling and its negative consequences, evaluation of the consequences of gambling, and thoughts regarding the intentions and morality of the advertiser. This mental process may result in the person either gambling or keeping to an earlier decision not to gamble. Thus, problem gamblers are more likely than non-problem gamblers to recall seeing gambling advertising and to remember eventual gambling episodes connected to such advertising exposure.

## **Qualitative studies**

There are a few qualitative studies, concerning perceptions and attitudes of gamblers more generally, that tell something about how gambling advertising is experienced (e.g., Wood, Griffiths, Derevensky, & Gupta, 2002). However, there are apparently no

published results from qualitative studies dedicated to the subject of gambling advertising. The yet unpublished interview study conducted by the present author (Binde, 2007) focuses on how problem gamblers experience and react to gambling advertising. The sample of informants is strategic, including people having problems with a variety of games, so the study can give only a rough indication of frequencies. Some problem gamblers report that their problems are entirely independent of advertising. Others report that advertising has an occasional and marginal impact on their gambling behaviour. Problem gamblers of a third category, apparently a minority, state that advertising has a manifest and not negligible impact: excessive gambling is sustained and aggravated, and attempts to cut down on gambling fail because of advertising that tempts the person with hard-to-resist offers. However, gamblers of this category stressed that advertising was not a major cause of their gambling problems, which they attributed mainly to personality factors and the high availability of gambling.

An example of manifest advertising impact was a horse bettor, trying to cut down on gambling, who could not resist advertising that told about roll-over jackpots on the popular 'pick seven' trotting game. Also, advertising for new types of horse betting games attracted this person's attention, initiating gambling episodes sustained by the idea that each novelty should be tried to determine if it would prove to be the 'dream' game for which he had an exceptional talent. The preliminary results of this study are in line with anecdotal evidence suggesting that for some problem gamblers excessive gambling is indeed triggered by advertising (Binde, 2005a, pp. 75-76). Similarly, recovered alcoholics have reported that alcohol advertising might trigger drinking (Treise, Taylor, & Wells, 1994).

In conclusion, there are no reliable figures concerning the impact of gambling advertising on problem gambling (cf. Griffiths, 2005). Given that advertising impact is difficult to measure and that problem gambling is neither well understood nor well defined, is it at all possible to get hard figures on the impact of gambling advertising on problem gambling, and if so, what research designs appear promising? To discuss these questions, it is apposite to make a rough estimate of the magnitude of impact: is it likely to be zero, small, or large? That the impact is virtually zero is sometimes claimed by actors in the gambling industry, who argue that advertising mainly affects market share and does not substantially increase the overall consumption of gambling products. In social debate, however, it is often suggested that the impact is considerable.

## **None, small, or large? A rough estimate of advertising impact on problem gambling**

The studies discussed in the previous section have notable limitations, but taken together suggest that gambling advertising contributes somewhat to problem gambling. At least some advertising makes some people gamble more frequently and for more money. Two studies show that quite a number of problem gamblers report

being triggered to gamble by advertising (Boughton & Brewster, 2002; Grant & Kim, 2001), while another study indicates that problem gamblers are more strongly influenced by advertising than non-problem gamblers are (Jonsson et al., 2003). When interviewed (Binde, 2007), some problem gamblers give detailed accounts of how advertising contributes to excessive gambling and thwarts efforts to cut down on the habit. Others, however, testify that advertising has little or nothing to do with their gambling problem. While these studies indicate that advertising indeed has an impact on the extent of problem gambling, the following three observations suggest that the impact is small rather than large.

First, the most widely advertised types of gambling may have a low prevalence of problem gambling, while games with a comparatively high prevalence of problem gambling may not be advertised at all. In Sweden, for example, the most advertised games are lotteries, which have a low prevalence of problem gambling. At the same time, a substantial number of problem gamblers play almost exclusively on video lottery terminals or illegal poker machines, forms of gambling for which there is no advertising whatsoever. This is the inverse of what one would expect if advertising had a great impact on problem gambling, in which case the most advertised games would attract many problem gamblers. This does not rule out, however, that a person may be persuaded to play one type of game by seeing advertising for another.

Second, if gambling advertising had a substantial effect on the prevalence of problem gambling, this effect should have been noted. For example, in some countries and states, gambling advertising has suddenly increased or decreased as a consequence of changes in laws and regulations, but no evident effects on problem gambling seem to have been reported. Furthermore, a cursory comparison of problem gambling prevalence rates between countries where there is a great deal of gambling advertising and countries where there is little does not suggest any obvious covariation. Excessive gambling is doubtless a behaviour as old as gambling itself. There are numerous historical examples of societies in which the prevalence of problem gambling was apparently high, despite the absence of gambling advertising. Thus, problem gambling can be widespread in a society even in the absence of advertising.

Finally, studies of advertising for addictive substances (i.e., alcohol and tobacco) provide an indication of the magnitude of the possible impact of advertising on problem gambling. Such studies are numerous and of different types. Since alcohol and tobacco advertising is controversial, the results of some of these studies have been contested. However, when the results are critically examined and taken together, these studies suggest that advertising for alcohol (Nelson, 2001; Smart, 1988) and tobacco (M. Duffy, 1996) generally has only a marginal impact on total consumption and excessive use. Advertising seems to have a greater impact only in certain circumstances, among which the most obvious is an immature market. As an illustration of the complexities of the relationship between advertising and consumption, consider the impact of informative (price) advertising as distinct from brand (image) advertising (Tremblay & Okuyama, 2001). In theory, if advertising

focusing on the *price* of an alcoholic beverage increases, then this would signal increased price competition. Such competition implies lowered prices, which means higher consumption. Advertising focusing on *brands*, however, increases brand loyalty; consumers become more willing to pay extra for a particular brand of alcoholic beverage. This allows companies to raise prices, which consequently may decrease total consumption. In sum, if advertising for psychoactive and addictive substances such as alcohol and tobacco has only a marginal impact on the extent of the detrimental health effects of consumption, then it is likely that the same holds true for advertising for a psychoactive and potentially addictive activity like gambling.

## Possible mechanisms of advertising impact

Having concluded that gambling advertising is likely to have some impact on the extent of problem gambling, we can speculate on the possible mechanisms of this impact.

A number of individual and social factors have been identified as increasing the risk of a person developing problem gambling (for summaries of such factors, see Blaszczynski & Nower, 2002; Griffiths & Delfabbro, 2001; McGowan, Droessler, Nixon, & Grimshaw, 2000; Potenza, Fiellin, Heninger, Rounsaville, & Mazure, 2002; Raylu & Oei, 2002). If advertising can be connected to such factors, then this suggests that advertising adds to the prevalence of problem gambling and indicates possible mechanisms by which this influence is exerted. Some of these factors apparently have little to do with advertising, as the following list indicates:

- sociological and demographic factors, such as low income, low education, young age, being male, and belonging to a minority ethnic group;
- friends who gamble and approve of gambling;
- gambling at an early age;
- a family history of problem gambling;
- traumatic childhood experiences;
- a strongly felt need for dissociative experiences;
- obsessive-compulsive disorder;
- antisocial personality disorder;
- age-related damage to certain parts of the brain;
- alcoholism.

There are, however, other factors commonly regarded as increasing the risk of developing gambling problems, factors that in theory can be connected to advertising for gambling products:

- *High availability of gambling.* Gambling advertising informs and reminds us of the availability of gambling. It increases awareness of the existence of games and their features as well as of where these games can be played. A high availability of gambling would not affect the extent of problem gambling if people were not *aware*

of the availability.

- *Participation in gambling.* This factor should be considered as distinct from availability. Advertising exhorts people to gamble and is likely to increase overall participation. When someone gambles, he or she is exposed to the features of that form of gambling that make it enjoyable for the casual gambler. At least some of these features are those that also make that form of gambling addictive for the problem gambler. Continuous exposure to the potentially addictive features of games—such as their capacity to excite or relax—makes it more likely that someone with the potential for developing problem gambling may realize it, for example, during a stressful period of his or her life.
- *Features of the brain's reward system.* As mentioned above, the study by Grant and Kim (2001) suggests that advertising constitutes a trigger for gambling. In neurobiological terms, such triggers are linked to the activation of the reward system of the brain. In Skinnerian terms, they constitute cues that activate conditioned responses.
- *Impulsive personality.* Advertising can be assumed to have a greater influence on the behaviour of an impulsive person than on a person of average impulsiveness. According to the DSM-IV criteria (APA, 1994), pathological gambling is an impulse control disorder.
- *A substantial early win.* Numerous studies conducted in various countries report that a large proportion of problem gamblers had won a substantial amount of money early in their gambling careers (Delfabbro, Lahn, & Grabosky, 2005; Turner, Zangeneh, & Littman-Sharp, 2006; Walker, 1992, p. 137-138). Presumably, this event created a lasting impression that it is easy to win and that gambling can produce intense feelings of joy and satisfaction. Much advertising for gambling gives the impression that it is easy to win, which might reinforce such impressions.
- *Overconfidence in one's own skill in sports and horse betting.* Advertising for sports and horse betting often exaggerates the importance of skill (Binde, 2005a). Attribution of gambling wins to one's own skill, while blaming losses on bad luck or occasional and unlikely events, is a thought configuration found among some problem gamblers (Gilovich, 1983; Rosecrance, 1986).
- *Sensation-seeking personality.* The theme of some advertising is the excitement of gambling. For example, ads may emphasize high odds, big jackpots and the thrill of gambling. This may persuade people who are exceptionally sensation seeking to satisfy their need for excitement through gambling rather than through other activities. Although not all gambling involves sensation seeking (Dickerson, Hinchy, & Fabre, 1987), some forms do (Zuckerman, 1994).
- *Irrational thinking.* Although the importance of irrational thinking and cognitive factors in problem gambling is somewhat disputed (Delfabbro, 2004; Dickerson, 1991; May, Whelan, Meyers, & Steenbergh, 2005), most researchers agree that irrational thinking contributes to problem gambling. Advertising often suggests that luck is of importance. It emphasizes the wonderful consequences of jackpot wins while saying little about the minute probability of winning, and in other ways exploits biases in how people think about probabilities (Binde, 2005a; Mumpower, 1988).

Thus, among the individual and social factors identified as increasing the risk of someone developing problem gambling behaviour, some appear unrelated to advertising, while some in theory could be related.

So far the discussion has concerned mainly the short-term impact of advertising on problem gambling. However, advertising may also have a long-term impact. The power of influencing social attitudes and values is often attributed to advertising, typically in an undesirable way, towards favouring selfishness, materialism, and irrationality (for an overview, see Pollay, 1986). In this vein gambling advertising is commonly assumed to reinforce the idea that money brings happiness, the thinking that easy money is preferable to honest work, and, more generally, the perception that gambling is a perfectly normal and acceptable form of entertainment for everyone— young and old, men and women alike. This impact on attitudes contributes, it is argued, to the increased prevalence of gambling, which has the consequence of making problem gambling more prevalent.

It is difficult to determine to what extent this is true. Undoubtedly, advertising to some extent speeds up changes in values and attitudes, and this might apply to gambling advertising as well. The more liberal view of gambling that emerged in the 1960s and 1970s, however, was part of a general shift of attitudes in Western societies towards many behaviours formerly not generally accepted, behaviours such as homosexuality, swearing, nudity in public media, working on Sundays, and extramarital sex (Binde, 2005b; Brenner & Brenner, 1990; Burnham, 1993; Clotfelter & Cook, 1989; Dixon, 1991; Dombrink, 1996; Panasitti & Schull, 1994; Reith, 1999). It should also be noted that despite massive amounts of gambling advertising, attitudes towards gambling have actually become more critical over the past decade in some countries, such as Sweden. Problem gambling is a 'hot topic' in public debate, and there are frequent calls for stricter regulation of the gambling sector.

To conclude, it is possible that, from a long-term perspective, gambling advertising has contributed somewhat to more liberal attitudes towards gambling, and that a consequence of this shift has been an increase in problem gambling. There are reasons for also assuming that gambling advertising increases problem gambling in the short term, but its effect is most likely smaller than those of other factors that influence prevalence rates. This short-term impact can be assumed to consist of three distinct effects, all of which connect with social and psychological risk factors for developing problem gambling.

(a) Advertising recruits new players, some of whom later become problem gamblers. This effect ought to be at its strongest when a new game is introduced and when the market is immature. For example, people may be persuaded by advertising (Web banners or TV commercials) to try Internet poker, a game that for some becomes an obsession. Had it not been for advertising, a number of these persons would not have started playing and others would have done so later, when they were perhaps more aware of the risks involved or when Internet poker operators had increased their implementation of measures to counter excessive gambling.

(b) Advertising intensifies established gambling habits. On the continuum between problem-free gambling and pathological gambling, some people will, because of advertising impact, move a little towards pathological gambling. A problem-free gambler may develop at-risk gambling behaviour, an at-risk gambler may become more of a problem gambler, and a problem gambler may behave more like a pathological gambler.

(c) Advertising may sustain and aggravate established problem gambling by providing hard-to-resist impulses for gambling that make it harder to adhere to a decision to quit or cut down on gambling.

To determine more precisely the magnitude of advertising impact on the extent of problem gambling, an impact which as far as can be judged is small, what research methods appear promising?

## **Suggestions for future research**

### **Questionnaire studies and qualitative investigations**

Individuals may be asked, via questionnaires, separate questions about their recollection of advertising and their gambling habits. However, there is, as pointed out earlier, a fundamental problem in analysing answers concerning causality, and also a bias in how non-problem compared to problem gamblers recall advertising. Such studies will hardly give an idea of the extent of advertising impact. Studies in which respondents themselves assess the impact of gambling advertising yield results concerning how individuals *believe* advertising has influenced their gambling. In the case of the problem-free gambler, however, such self-reporting appears to be of little value in measuring actual advertising impact, since advertising often has a subtle and hard-to-gauge impact on individual behaviour. Problem gamblers can, as argued, be expected to notice the influence of advertising more clearly than ordinary gamblers can, and questionnaires asking apposite questions about this influence will probably illuminate this aspect of advertising impact.

Qualitative investigations, e.g., interview studies, are likely to produce knowledge about how people experience gambling advertising and about the mechanisms of advertising impact. If gambling advertising adds to problem gambling, people who have or have had gambling problems can tell at least something about the ways advertising has had a detrimental effect on their gambling habits. Such studies may also indicate the extent of advertising impact on problem gambling. For instance, they might indicate that advertising for specific types of games has comparatively little or great impact on problem gambling behaviour.

### **The problematic Ledermann model**

There are numerous econometric studies of the impact of alcohol and tobacco advertising, so it is well worth considering whether econometric methods could be

applied in examining gambling advertising. The principal task of such research would be to compare the volume of advertising with the extent of problem gambling; if a covariation were found, this would indicate that advertising increases the prevalence of problem gambling.

Two main approaches can be discerned in alcohol and tobacco advertising studies: one in which advertising volume is compared to *total* consumption, which is assumed to be an indicator of *harmful* consumption, and another in which advertising volume is compared to tangible indicators of harm, such as the incidence of lung cancer or the number of motor vehicle accidents caused by drunk drivers.

In the first approach, if total consumption of tobacco increases, adverse effects on public health are taken for granted, since every cigarette smoked is dangerous to an individual's health. If total consumption of alcohol increases, it is commonly assumed that problematic and harmful use of alcohol also increases. This assumption was originally formulated 50 years ago by the French researcher Sully Ledermann (1956), and is known as the 'Ledermann model', the 'total consumption model', or the 'single distribution theory'. However, the assumption has been contested, and some researchers argue that the harmful use of alcohol cannot be described with any precision as a function of total consumption; at best, the level of total consumption can be used only in roughly approximating alcohol harm in a given society (J.C. Duffy, 1986).

The application of this type of econometric approach in studying the impact of gambling advertising would seem to be very difficult. As pointed out earlier, such econometric studies would have two steps: (a) measuring advertising impact on the consumption of gambling products and (b) somehow relating levels of consumption to prevalences of problem gambling. Some problems involved in the first step were outlined above. In the second step, the task is to compute problem gambling as a function of total gambling. Evidently, there is some connection between the two. Consider the two extremes: (a) there is no gambling at all in a society, and (b) all citizens gamble for large amounts of money every day. In the first case there would certainly be no problem gambling, while in the second there would be a great deal. In reality, however, the connection between total and problem gambling is quite complex.

Consumption of alcohol is easily and validly defined as the average daily intake of pure alcohol (in beverage equivalent), and it does not matter much what kinds of alcoholic beverages (beer, wine, whiskey, etc.) are consumed. This reasoning is sound, since alcohol is equally addictive and potentially harmful, regardless of the form in which it is consumed. However, the same does not hold for gambling, since not all forms of gambling are equally addictive or hence potentially harmful. The availability of forms of gambling associated with a relatively high risk of developing problem gambling appears to be more decisive for the prevalence of problem gambling than the average consumption of gambling products. For example, the

introduction of slot machines or casinos in a country that previously lacked them would no doubt have a greater impact on the prevalence of problem gambling than would a doubling of the average net expenditure on lotteries. As the critique of the Ledermann model of alcohol use and misuse maintains, the extent of total consumption provides only a very rough indication of harmful use.

### **Is it possible to use prevalence data?**

Let us now consider the other possible econometric approach, in which direct indicators of harm are compared to the volume of advertising. Severe addiction to gambling may cause evident harm in many ways, such as financial troubles, emotional stress, depression, ruined social life, job loss, and incarceration. The severity of such harms is measured, together with behavioural and cognitive indications of problem gambling, by almost all gambling screens. Among these, the SOGS and DSM-IV-based questionnaires are the most commonly used today. Would it be possible to measure, using such instruments, problem gambling at certain points in time, and then to compare the results with a series of measurements of gambling advertising volume, thereby getting an idea of the impact of advertising on problem gambling? This would be difficult, even if the investigation were limited to certain types of gambling.

A basic problem is that, although these screens are widely used, their accuracy in assessing the extent of problem gambling among the general population is not very high. For example, the Swedish prevalence survey of 1999 is considered to be exemplary in its design and execution and used a sample of 9917 individuals (Rönnerberg et al., 1999; Volberg, Abbott, Rönnerberg, & Munck, 2001). The prevalence of probable pathological gambling according to the SOGS-R (in the past year) in this population was estimated to be 0.6% ( $\pm 0.2\%$ ), and an additional 1.4% ( $\pm 0.3\%$ ) of individuals scored as problem gamblers. Given these margins of error, probable pathological gambling may be between 0.4% and 0.8% and problem gambling between 1.1% and 1.7%. Since the impact of advertising on problem gambling appears to be relatively small, it would likely be lost in the fairly large margin of error of prevalence estimates and obscured by variations in the prevalence caused by a host of other factors. These include, as already mentioned, the introduction of new forms of gambling, significant changes in existing games, public debate on the risks of gambling, increased availability of gambling through an increased number of sales outlets, availability of gambling via the Internet and cell phones, and other changes in the gambling market and in society.

### **Using data on percentage of disposable income lost**

Composite measures of problem gambling–inflicted harm, i.e., problem gambling screens, are thus not likely to be useful for studies attempting to measure the impact of gambling advertising on problem gambling. It would be more promising to focus

on a specific harm inflicted by excessive gambling that can be quantified and measured comparatively easily. One such tangible harm is economical: losing a significant proportion of available income when gambling on a specific type of game. Such a method would, on one hand, measure the extent of advertising for a specific type of gambling and, on the other, assess the PDI lost by gamblers on that form of gambling. If there is covariation between these two variables, this would indicate the impact of advertising on problem gambling. To regard the prevalence of problem gambling as a function of PDI lost is an approach first proposed by Michael Walker and Mark Dickerson: 'If it is assumed that gambling-related problems are closely associated with gambling losses in monetary terms, then it makes sense to investigate gambling losses directly, and to express the prevalence of gambling-related problems as a function of personal expenditure on gambling' (1996, p. 245). The rationale of this view is that a relatively reliable indicator of problem gambling is that a person is gambling beyond his or her means.

A well-off person with an interest in gambling may thus spend substantial net amounts of money on gambling without suffering any harm. However, when gambling expenditures increasingly consist of money that ought to have been used for other things, then problem gambling can be assumed. This is especially true when the gambling expenditures are greater than disposable income minus necessary expenditures for food, rent, etc. In that case, a person's gambling can lead to financial ruin.

Gambling for more money than a person can afford to lose is one of the criteria by which problem gambling is usually defined and measured. Ten of twenty items in the SOGS questionnaire address the detrimental effects of gambling on personal finances. Another two questions also relate to money, asking whether the respondent has argued with people he or she lives with about money used for gambling, and whether he or she has lied about winning money when losing. Two of ten DSM-IV criteria for pathological gambling expressly concern financial troubles; in questionnaire form they appear as, 'Have you committed a crime in order to finance gambling or to pay gambling debts?' and 'Have you asked others to provide money to help with a desperate financial situation caused by gambling?' There are also questions concerning thoughts about ways to get money to gamble, on the need to gamble with increasing amounts of money to get excitement, and on going back to gamble the next day to win back money lost. A person who loses a significant PDI is likely to score as a problem or pathological gambler on these screens.

SOGS has been criticized for including too many questions about money. On one hand, the critics claim that those who are regularly short of money and often have to borrow it may falsely be classified as problem gamblers (Stinchfield, 2002). On the other hand, it is claimed that problem gambling is essentially an impulse control disorder, and that the economic effects are secondary: a person may have gambling problems without having to suffer economically. It has been argued, however, that it is precisely those questions concerning the detrimental economic impact of gambling that are a strong suit of SOGS. There is little doubt that one who borrows money from

here and there, sells personal property to finance gambling, and so on, has a gambling problem. This view is supported by at least one study (Strong, Breen, Lesieur, & Lejuez, 2003), in which it was found that five of the SOGS questions concerning economic troubles, together with the question as to whether or not the respondent has ever gambled more than he or she intended to, discriminate well between different levels of problem gambling severity.

Problem gambling is thus very likely to have negative economic consequences. In terms of absolute amounts of money lost at gambling, these consequences may vary greatly, depending on a person's disposable income: what for one gambler is a huge weekly loss may be insignificant for a wealthier one. The PDI lost at gambling is a relative measure of negative economic consequences: whether poor or rich, the gambler who loses 100% of his or her disposable income on gambling has no money left for housing, food, or anything else. A person with a low income spending 50% of disposable income on gambling may, however, suffer more harm than a person with a high income spending 50%. This could be adjusted by including a logarithmic function.

Thus, a substantial increase in the average PDI lost by gamblers at a particular type of game would most likely indicate an increase in problem gambling. In theory, a model could be developed to describe how PDI lost at gambling is related to the severity of gambling problems and how these problems translate into other indicators of problem gambling, such as SOGS scores. If adequate data could be collected, then such a model might be created and calibrated. If the model's output figures were compared over time to advertising volume, the short-term impact of advertising on problem gambling could be assessed. As a complement to survey-based screens, such an econometric model for measuring problem gambling could be useful for other purposes as well.

## Conclusion

Alarming claims that gambling advertising substantially increases problem gambling and reassuring statements from gambling companies that advertising merely affects market share and has no impact on the prevalence of problem gambling both appear to be erroneous. On the basis of available facts, it can be inferred that advertising indeed increases the prevalence of problem gambling, but its effect is less than those of other relevant factors. Hard figures and reliable estimates of the impact of advertising on problem gambling are, however, lacking. This is not too surprising, since it is very difficult to measure the impact. Using the approaches available today, it is doubtful whether reliable measurements can be made. There is a theoretical possibility of using econometric methods to measure the prevalence of excessive gambling. If such methods can be implemented, it may be possible to get an approximate idea of the impact of advertising on problem gambling with regard to specific game types.

It appears untenable for gambling companies—with the exception of operators offering only traditional lotteries or that have chosen a low-key marketing

strategy—to claim that their advertising does not to some extent contribute to problem gambling. Responsible companies should avoid advertising that features aspects of gambling associated with loss of control and excessive play. Increasing marketing efficiency by targeting those who already consume a great deal—a common strategy in the consumer sector—is questionable in the case of gambling advertising (cf. Wolburg, Hovland, & Hopson, 1999). People who gamble a great deal should not be urged to gamble even more, thereby facing the risk of aggravating problem gambling. The efficacy of widespread advertising in promoting sales should be weighed against the unfavourable impression it creates among large segments of the public, i.e., that it increases problem gambling and is insensitive towards those who are trying to free themselves from an addiction to gambling. Responsible provision of gambling means that companies should be responsive to the opinions of stakeholder groups and the public (Hing, 2003).

Like other advertising, gambling advertising is biased: it exaggerates the positive side of gambling while telling nothing about the possible drawbacks. There is a focus on winning, fun, and excitement, and silence about losing money and the risk of losing control of one's gambling. Gambling providers should counterbalance the biased picture of gambling conveyed in their advertising by explicitly informing consumers of the actual chances of winning, the true cost of gambling, and the risk of becoming addicted to gambling (Binde, 2005a; Dickerson, 1991, pp. 333-334; Eggert, 2004).

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