

Gambling advertising: A critical research review

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for the

Responsible Gambling Trust

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EXECUTIVE SUMMARY

This report provides a critical review of research on gambling advertising, with particular attention to studies that concern the impact of such advertising on participation in gambling and the prevalence of problem gambling. Methodological issues and the potential of research approaches to produce reliable results are discussed, providing a basis for recommendations about future studies. The report has been commissioned by the Responsible Gambling Trust in the UK and the aim is that the Trust, other organizations and researchers will find the report useful when forming research priorities and planning studies. More generally, the report serves as an introduction to the topic of gambling advertising.

Gambling advertising is ubiquitous today: insistent exhortations to participate in various forms of gambling are common in virtually all kinds of media. It is therefore relevant to ask what the impact on problem gambling might be.

It is very difficult, if not impossible, to assess how many people gamble excessively because of direct or indirect influence from advertising. Part of the difficulty of measuring the impact of advertising on problem gambling is that it is, in general, most probably relatively small.

However, the nature and mechanisms of the impact of gambling advertising, as well as other aspects of it – such as its volume and the ethical questions that it raises – are possible to study in a variety of ways. Thus while *absolute* extent of impact is difficult to assess, it is possible to study the *relative* impact on various groups of people by different forms of advertising. Such research results are valuable for harm prevention and responsible marketing as they differentiate between relatively harmless and relatively risky advertising.

Research topics and approaches are assigned a priority rating: *low – medium – high*. The rating is based on the possibilities of research to produce reliable results, its potential value for understanding gambling involvement and risks of problem gambling, and its practical value for harm prevention and responsible advertising. It is also taken into consideration whether research is likely to give a better understanding of the effectiveness of rules and controls intended to mitigate the possible harmful impact of gambling advertising, which is an area identified by the Responsible Gambling Strategy Board in the UK as needing further research and evaluation of evidence in relation to harm prevention.

The review of research on gambling advertising identifies three broad fields of study – volume and efficiency, impact on problem gambling, and content and messages – discussed in the three main sections of the report. Within these fields, particular forms of research, methods and research questions are distinguished and separately discussed in the subsections. This is an *ad hoc* division that emerged when reviewing previous research – limited in number of studies and fragmentary

as it is. Other more logical or ideal divisions of the cross-disciplinary research field of gambling advertising are possible but would have been impractical for the purpose of this review. The recommendations for future research should be viewed with this in mind – future studies and research programs could combine methods and approaches in new and innovative ways that are not discussed in this review.

HIGH PRIORITY

Surveying the volume and forms of advertising. Statistics and studies of advertising volume, costs and exposure are useful for a number of reasons. The methodological challenges are minor, compared with those of many other kinds of studies of gambling advertising. Recurrent measurements give valuable insight into trends in the gambling market and provide basic facts about the extent and forms of advertising as well as people's exposure to it, giving perspective to discussions and research findings on its impact on problem gambling. As a previous review of the field concluded, hard facts are needed, as much of the discussions on gambling advertising are opinion-driven (Planzer & Wardle, 2011).

Content analysis. Basic knowledge of gambling advertising includes not just its volume and forms, but also the messages it contains. Studies of advertising messages can be of several kinds. Qualitative studies using convenience samples are appropriate for initial exploratory research. Studies including quantification add the benefit of showing how common various messages are; if combined with media tracking, the frequency of messages, the media channels used and the target audiences will become known.

Self-rated impact of gambling advertising. Gamblers in general cannot accurately appraise the extent to which they are influenced by gambling advertising. However, to explore the self-rated impact of gambling advertising is of high priority if different groups of people and various forms of gambling are distinguished and compared. It is advisable to explore the self-rated impact of gambling advertising in research on perceptions of and attitudes towards advertising. Valuable insights can be gained into what kinds of advertising, if any, may have a negative impact on vulnerable groups, such as youth, "at risk" gamblers and people who already have a gambling problem. In qualitative studies, problem gamblers can tell whether, and how, various kinds of advertising have made their situation worse. However, the validity and reliability of these approaches needs further consideration and that should be addressed in future studies.

Self-report studies of perception of advertising. Studies of perception of and attitudes towards gambling advertising have the potential to provide valuable insights into how advertising messages of various kinds are perceived and stood by different groups of people. Their usefulness increases if combined with exploration of the self-rated impact of gambling advertising, subjectively

misleading advertising, and especially when considering risk factors for problem gambling.

Advertising codes and risk factors for problem gambling. It is a high priority to perform systematic and comprehensive reviews of how risk factors for problem gambling relate to themes and messages in gambling advertising. These reviews should preferably consider the varying motivations for gambling across different forms of gambling, and for different types of gamblers, and how these motivations may turn into forces that drive excessive involvement. Such reviews would be useful for formulating evidence-inspired responsible advertising codes and regulations. The risk factors identified can be further explored in empirical studies of how people perceive and react to advertising messages and would thus allow for evidence-based codes and policies.

MEDIUM PRIORITY

Eye-tracking: an experimental method for exploring exposure. Eye-tracking is an experimental method that could be used in studies of gambling advertising. Eye-tracking methodology shows differences between potential, actual and perceived exposure; it can give insights into the appeal of various kinds of marketing messages to different categories of consumers. Eye-tracking can also be used to evaluate the actual attention that people pay to responsibility messages embedded in gambling advertising.

Possible experimental methods from alcohol advertising studies. Since many kinds of experimental methods could be used to explore the perception of and reaction to gambling advertising, it is difficult to comment in general about their priority in relation to other research approaches. Problem gambling has a psychological dimension and it is warranted to support experimental and other research into that area. Such research could very well include gambling advertising, for example in the form of visual cues in experiments. That would have the potential to produce knowledge valuable both more generally for the understanding of the underlying mechanisms of problem gambling on the individual level, and specifically about how gambling advertising influences the individual. Research of this specific kind has high priority; otherwise experimental research has medium priority.

The professional production of gambling advertising. Content analysis can only suggest what the intentions of the sender of advertising messages are. Studies of how advertising professionals work with gambling promotion are lacking and would have the potential to provide valuable information about how advertising messages are intended to be perceived, and for what categories of consumers they are intended.

Deception in gambling advertising. Gambling advertising not only raises the issue of problem gambling; as with all other advertising, it should not be misleading. Empirical research about to what extent different categories of people are misled by various forms of gambling advertising would make advertising guidelines and policies more evidence-based.

The ethics of gambling advertising. While it is easy to have an opinion on the ethics of various aspects of gambling promotion, it would be of value if professional ethicists and philosophers analysed and discussed the topic. Business ethics and moral philosophy have inquired into similar topics, using established conceptual frameworks and logical deduction from basic ethical principles.

LOW PRIORITY

The economic efficiency of advertising. Although studies of advertising efficiency may reveal conditions specific for gambling markets and produce results that could be of some interest in rough assessments of the impact of advertising on problem gambling, such studies are valuable primarily for gambling companies and of academic interest to economic advertising research.

Longitudinal youth studies. Longitudinal studies have been made with regard to the impact that alcohol advertising may have on youth drinking. Because of the many and severe methodological problems that longitudinal studies of the impact of gambling advertising would face – such as how to measure exposure and how to control for confounding factors – there is a significant risk that they would not produce reliable results. The results are bound to be contested, as are the results of longitudinal studies of alcohol advertising impact. Unless a study proposes innovative and feasible ways to handle the methodological problems, studies of this kind have low priority.

Econometric studies of advertising impact. Econometric studies of the impact of gambling advertising on problem gambling prevalence, using research designs similar to those of studies of the impact of alcohol advertising, face great methodological challenges and appear to have little prospect of producing reliable results. Unless convincing ways of tackling the methodological problems are suggested, such studies have low priority.

Cross-sectional observations. Cross-sectional observations of association between on the one hand recall of gambling advertising and on the other hand intentions to gamble, gambling involvement, or having gambling problems do not indicate anything about causality – that is, the impact of gambling advertising. They are therefore of limited value and in themselves of low priority. Nevertheless, they do reveal something about the role that advertising plays for gamblers

and are therefore of value as part of studies of perceptions and attitudes towards gambling advertising.

Research about gambling advertising benefits from the following (some points are not applicable to all kinds of studies):

- Acknowledge that high consumption of gambling is not the same as problem gambling; any study of advertising impact on the individual level needs to make this distinction;
- If exploring the impact of advertising on problem gambling, a clear definition of problem gambling should be used and there should be an explicit hypothesis about how advertising impact may relate to problem gambling according to that definition;
- If using or implying a total consumption model, the complications of applying such a model to gambling should be addressed;
- Being informed by knowledge from econometric studies of advertising efficiency under various types of consumer market conditions;
- Being inspired by the large body of theories and research in advertising and cultural studies concerning persuasion and messages in advertising;
- In the future covering new modes of promotion, such as via social networks on the internet and “social gaming”.

The conclusion of this report is that although research on the impact of gambling advertising is methodologically challenging, it is possible to conduct studies that produce knowledge valuable for policy making, regulation and the responsible marketing of gambling. While current knowledge at best allows for evidence-inspired policy and responsible marketing, there are good prospects of gaining more knowledge through future studies that would allow policy and responsible marketing to become more evidence-based.

1 ABOUT THIS REPORT

1.1 Aim

This report provides a critical review of research on gambling advertising, with particular attention to studies that concern the impact of such advertising on participation in gambling and the prevalence of problem gambling. Methodological issues and the potential of research approaches to produce reliable results are discussed, providing a basis for recommendations about future studies. The report has been commissioned by the Responsible Gambling Trust in the UK and the aim

is that the Trust, other organizations and researchers will find the report useful when forming research priorities and planning studies. More generally, the report serves as an introduction to the topic of gambling advertising.

1.2 Scope

The focus of the report is on empirical studies of commercial advertising for gambling services in various media formats, such as television, print, internet and billboards.

The report does not comment on “counter-advertising”, that is, mass media campaigns about the risks of gambling and messages in various media and contexts about responsible gambling. Counter-advertising is a topic on its own – typically such advertising is part of multi-method campaigns to prevent problem gambling – and is covered in previous reviews of the literature (Ladouceur et al., 2013; Messerlian & Derevensky, 2007; Planzer & Wardle, 2011; Productivity Commission, 2010; Williams et al., 2012a). There is an extensive literature on counter-advertising in the fields of alcohol and tobacco (Agostinelli & Grube, 2002; Agostinelli & Grube, 2003; Kotler et al., 2002).

The report does not cover research on the impact, on people’s gambling preferences and their involvement in gambling, of depictions of gambling in mass media that are not part of commercial messages, for example, gambling in the news, movies, TV series, books, poker magazines and televised poker tournaments. There is very little empirical research on this, although there are a few studies of the content of mass media coverage of gambling (Binde, 2007a; Borch, 2006; McMullan & Mullen, 2001; Yoong et al., 2013).

Advertising is just one part of the “marketing mix” of gambling companies (the “4P’s”), which includes the Product (design and features), Price (in the case of gambling: pay-back percentage), Place (channels of distribution) and Promotion (though advertising and by other means). The interrelation between gambling advertising and the other components in the marketing mix is outside the scope of this report.

This review focuses on empirical studies. Publications that discuss gambling advertising without presenting new empirical data will be mentioned only when there is some special reason for doing so. This means that policy discussions about gambling advertising are not included (e.g. Dyall et al., 2009; Friend & Ladd, 2009; Monaghan et al., 2008; Moodie & Hastings, 2009). Such policy discussions give recommendations ranging from radically restricting gambling advertising to making it more responsible, with several of them asking for more research.

As stated, this review concerns only conventional and “traditional” advertising – advertisements on television, radio, printed media, cinemas, on web pages,

billboards, and so on. As the media landscape transforms rapidly and “advertising fatigue” spreads among consumers, companies are eager to use new methods for promoting their products and services. Many of these methods take advantage of new channels of communication and social networks on the internet. The marketing of products and brands is embedded in the flow of communication on the internet, being part of, for example, social interaction, games, “social gaming” (Parke et al., 2012), sport events (“live odds”), online quizzes, user-uploaded videos, celebrity web pages and discussion forums. The distinction between non-commercial and commercial communication is fuzzier than ever. Since there is yet little empirical research into these modes of marketing, they will not be covered in this report. However, future study of gambling marketing needs to pay attention to them; this becomes the first recommendation for future research in this report.

Recommendation for future research

- The future study of gambling marketing needs to cover new modes of promotion, such as via social networks on the internet and “social gaming”.

1.3 Methodology

In 2005 the present author wrote a report in Swedish on gambling advertising, which included a review of the literature (Binde, 2005). Extensive searches in publication databases and on the internet were used to locate relevant literature. Parts of this fairly comprehensive text appeared in abridged and updated form in two texts in English (Binde, 2007b; Binde, 2009b). In 2005-2006 the author conducted an empirical and qualitative study of how gambling advertising impacts current and former problem gamblers. The results of the study were presented in a report in Swedish (Binde, 2007c) and in an article in English (Binde, 2009a). In connection with these publications the academic literature was again scanned for relevant works. In the initial phase of writing this report (October 2013), a search for relevant literature was made using Google Scholar. This yielded a number of new and relevant publications.

This review is thus not based on a systematic search for literature, using specific criteria. It is based on an extensive knowledge of the literature that has accumulated over years of involvement in this research field, and without doubt the review encompasses a greater number of published works than what would have been found by a systematic literature search in bibliographic databases. It includes, for example, “grey” literature in the form of non-peer reviewed reports published by various authorities and agencies, as well as works that include minor observations on gambling advertising without indicating that in the title, abstract or keywords.

In all, 33 empirical studies (reported in 36 publications) are identified that focus on gambling advertising or have it as a main topic. Some studies are reported in

multiple publications, and some publications report on several methodologically distinct studies included in a comprehensive research program. The Appendix (Part A) to this report lists the publications and the studies. A further 19 studies (reported in 22 publications) have been found that include minor empirical data relating to gambling advertising, such as the inclusion of a question on gambling advertising in an extensive questionnaire covering various aspects of gambling involvement and cognitions. These studies are listed in Part B of the Appendix.

Some types of studies have been carried out with regard to alcohol advertising but not with regard to gambling advertising. In order to discuss the possibility of carrying out such studies, a number of alcohol advertising studies are presented and discussed. These publications have been located mainly through research overviews and Google Scholar.

1.4 Organization

After this initial presentation (Section 1) of the report follows an introduction to the study of gambling advertising (Section 2). The controversial nature of such advertising is pointed out; the ideology of responsible gambling is discussed; previous reviews are listed; crucial conceptual issues are commented on; possible mechanisms of how advertising impacts the prevalence of problem gambling are presented; and a rough estimate of the magnitude of impact is offered.

Sections 3 to 5 critically review empirical research on gambling advertising and discuss possible research modelled after studies of alcohol advertising. Section 3 discusses the volume of advertising and its efficiency. Section 4 presents and discusses research on the impact of advertising on problem gambling. Section 5 concerns studies of messages in advertising. Section 6 is a concluding discussion. Then follows the list of references and finally the Appendix with two lists of studies examining gambling advertising – one list of studies focusing on the subject and one list of studies that include minor observations on gambling advertising.

Since this report is a stand-alone text, it is inevitable that there is some recapitulation of information and arguments that have appeared in the author's previous publications on gambling advertising. However, this report differs fundamentally from earlier texts since its objective is to evaluate what future research approaches into gambling advertising have good potential to produce reliable and valuable results, and what approaches do not.

1.5 Recommendations

Recommendations for future research are given at the end of each section and occasionally also in connection with general discussion. Recommendations

concerning particular research topics and approaches include a priority rating: *low* – *medium* – *high*. The rating is given by the author on the basis of the following considerations:

- The potential of research to produce reliable results, considering methodological challenges and the complexity of analysis;
- The value of research results for understanding patterns and levels of involvement in gambling among the population and its subgroups, including risk factors for problem gambling and its prevalence;
- The practical value of research results for the prevention of problem gambling, including responsible advertising.

It is also considered whether research is likely to give a better understanding of the effectiveness of rules and controls intended to mitigate the possible harmful impact of gambling advertising, which is an area identified by the Responsible Gambling Strategy Board in the UK as needing further research and evaluation of evidence in relation to harm prevention (RGSB, 2012).

Priority rating is relative. A “low” priority thus does not necessarily mean that a specific kind of research is without value. The author has made the recommendations for future research to the best of his knowledge but of course they do not represent final judgements – as research advances and reality changes, priorities about what research is particularly valuable and promising are certain to change.

The review of research on gambling advertising identifies three broad fields of study – volume and efficiency, impact on problem gambling, and content and messages – discussed in the three main sections of the report. Within these fields, particular forms of research, methods and research questions are distinguished and separately discussed in the subsections. This is an *ad hoc* division that emerged when reviewing previous research – limited number of studies and fragmentary as it is. Other more logical or ideal divisions of the cross-disciplinary research field of gambling advertising are possible but would have been impractical for the purpose of this review. The recommendations for future research should be viewed with this in mind – future studies and research programs could combine methods and approaches in new and innovative ways that are not discussed in this review.

2 INTRODUCTION TO THE STUDY OF GAMBLING ADVERTISING

2.1 *Gambling advertising: A controversial topic*

Advertising is in itself a controversial topic. Companies in the consumer market spend huge sums on advertising, yet most studies of how consumers perceive advertising show that a majority do not trust advertising messages and believe that the influence of advertising on them is small. In the public debate, views on advertising tend to be polarized – either critical or supportive. For example, in Sweden two books were published in 2001-2003, one with the title (translation) “Advertising is Deadly Dangerous: A Polemic Pamphlet” (Lindqvist, 2001 (orig. 1957)), the other with the title (translation) “Advertising: The Good Force” (Boisen, 2003).

These polarized views are generated by the important function that advertising has in the modern market economy. The negative view is that advertising creates by trickery artificial needs among consumers, generating an insatiable demand for goods and services that in the long run is untenable and will bring disaster to society. The positive view is that advertising is crucial in making competition in the market effective – which is of advantage to consumers and companies, as well as to the economy and society generally – and that it constitutes a contemporary and dynamic form of art and myth.

The controversial nature of advertising is reflected in the academic literature:

“Advertising has been written about as instrumental to an emerging capitalistic market, touted as a flamboyant lifestyle in autobiographical tales of charismatic advertising leaders, depicted as a coercive tool of manipulation for creating false desires in consumers, and analyzed for its complex social and political relations among its internal divisions and suppliers. ... Very few writers of advertising are indifferent to it” (de Waal Malefyt, 2012, p. 219).

Commercial gambling is also a controversial topic in the public debate. On the one hand there is a positive appraisal of its entertainment value for consumers, contribution to employment, the revenues it generates not only for gambling companies but also for many other enterprises involved in the creation, marketing and distribution of gambling services, and the revenues it generates for the state either directly or through taxes. On the other hand there is a negative view which often has a moral dimension, associating gambling with hedonism, materialism, covetousness, individualism and fatalism. This view may also be rooted in public health concerns, associating gambling with social and psychological harms that affect a considerable part of the population. Gambling has a remarkable capacity to polarize views, causing some people to intensely dislike it and others to like it, a

few even assuming a social identity as “gamblers. From a more academic standpoint, estimates of the social costs of gambling vary considerably (Walker, 2003; Williams et al., 2011; Wynne & Shaffer, 2003).

When these two controversial topics – advertising and gambling – are brought together, it is not surprising that gambling advertising is no less controversial. The negative view perceives gambling advertising as to a large extent deceptive, unethical and causing harm to society as it incites many people, including youth, to start gambling and to gamble excessively. Bans and restrictions on gambling advertising are therefore called for. Such opinions gain strength especially in times when the volume of advertising is rapidly increasing, as over recent years in the UK (Ofcom, 2013).

The more accepting view has shifted in argument during the past 30 years. At the beginning of this period, gambling started to become increasingly accepted in many European countries and also more commercialized, being perceived to be one form of entertainment among others. With commercialization came increased marketing – in some countries, such as Sweden, this was a radical shift from providing gambling to satisfy demand but doing nothing to stimulate it, to stimulating the demand for gambling with a full arsenal of marketing methods.

At that time, it was not uncommon for representatives of gambling companies to maintain that gambling problems arose because of individual psychological dispositions and that their gambling products and marketing had little or nothing to do with this. Nowadays, at least in Europe, responsible provision of gambling services, including responsible advertising, has for most companies become an important part of their image. This is not only an effect of a general business trend towards the increasing importance of corporate social responsibility, but also an effect of gambling companies knowing more about the potential harms that their services can bring and how these might be prevented. Some companies assume that promoting responsible gambling will in the long run make their business more sustainable.

The growth of responsible gambling is also an effect of the EU regulatory context. Monopolies and other restrictions of national gambling markets are often justified by the argument that this protects consumers from the potential harms of gambling, including excessive involvement. This means that gambling companies operating under such regulatory regimes are expected to act responsibly, including in their marketing. Commercial gambling companies that are excluded from the monopoly markets question the claimed rationale for these regulatory models and therefore have an incentive to appear as responsible as the monopoly companies, thereby undermining one of the arguments for keeping them out of the market.

From the international perspective, the three megatrends of globalization, digitalization, and deregulation of markets have made gambling advertising across

borders much more common (Törnroos, 2010). Only totalitarian regimes can effectively shut out all marketing messages in digital media. As these trends are likely to continue with undiminished force in the foreseeable future, the volume of gambling marketing messages on the internet is likely to increase, which poses great challenges for regulation and raises questions regarding responsibility in advertising.

2.2 The ideology of responsible gambling

In most industrialized societies the majority of adults gamble at least once a year; participation rates range from 65 to 82 percent (Gainsbury, 2013). It is reasonable to assume that for many, gambling adds to quality of life. Gambling provides an opportunity to socialize, compete with others, engage in intellectually challenging tasks (e.g. handicapping or playing poker), relax from everyday chores, experience some excitement, and dream of hitting a jackpot; gambling is embedded in culture and social life (Binde, 2007a; Binde, 2011a; Binde, 2013). Advertising may thus contribute to the consumer value of gambling by informing about products and offers. It helps the consumer to find enjoyable forms of gambling at a price that he or she finds reasonable.

However, as this review will show, there are reasons to believe that at least some gambling advertising has a negative influence, because it contributes to the prevalence of problem gambling and induces people to gamble by representing gambling in such a biased way that it might be considered deceitful.

A basic rationale for responsible marketing of gambling is therefore that it is possible to distinguish between relatively harmless advertising, and advertising with a relatively high risk for contributing to excessive gambling or being inappropriate in some other way. The same idea of separating relatively harmless from relatively harmful gambling underlies concepts such as “responsible gambling” and “harm minimization”.

2.3 Previous reviews and overviews

The economists Charles Clotfelter and Philip Cook (1989; 1999) extensively discuss lottery advertising in the USA and review what little literature that was available at that time. Mark Griffiths discusses gambling advertising impact and provides a limited review of the literature (Griffiths, 2005). As mentioned, the present author has written an extensive review in Swedish of research in gambling advertising (Binde, 2005); an abridged version was later published in English (Binde, 2007b). The marketing of gambling is more generally discussed in a chapter of the book “In the pursuit of winning” (Zangeneh et al., 2008). A section of a report on the prevention of problem gambling discusses the effectiveness of advertising restrictions (Williams et al., 2012a). A report from Schottler

Consulting (2012) in New Zealand provides overviews of some aspects of gambling advertising and research, such as responsible advertising codes in various countries. The most recent comprehensive overview before the present one was published in 2011 by the Responsible Gambling Fund (Planzer & Wardle, 2011); an abridged and adjusted version was published a year later (Planzer & Wardle, 2012).

2.4 Conceptual issues: Problem gambling, consumption and availability

In this section, three important conceptual issues will be discussed. The first is the distinction between high consumption of gambling and problem gambling, the second is the “total consumption model”, known from the alcohol field, and the third concerns the concepts of availability and adaptation.

High consumption of gambling does not necessary mean that an individual has a gambling problem. People may gamble a lot because they like it and can afford it; they may be in full control of their gambling and suffer no negative consequences.

A clear and useful definition of “problem gambling” is that two criteria need to be fulfilled (cf. Williams & Volberg, 2013):

- a) The individual has impaired control over time or money spent on gambling;
- b) Gambling has negative consequences for the individual or someone close to him or her.

The impaired control should be recurrent and not just a single or a few episodes. The negative consequences should be more than marginal, for example there may be significant losses of money, strain on social relations and difficulties to attend to one’s work or education. We may also speak of problem gambling in cases where just one of these two criteria is fulfilled, if there is *severe* impaired control or *severe* negative consequences. This conceptualization of problem gambling is at the core of what today is probably the most advanced screen for problem gambling, the *Problem and Pathological Gambling Measure* – PPGM (Williams & Volberg, 2013). The PPGM further offers a logical definition of the otherwise vague concept of “at-risk” gambler: someone who fulfils only one of the two criteria (but with no severe loss of control or severe negative consequences). The psychiatric concept of “disordered gambling” (APA, 2013) is in this conceptualization equivalent to the most severe form of problem gambling (pathological gambling).

Thus, on the individual level, high consumption of gambling is not necessarily the same as problem gambling. Any study of advertising impact on the individual

level needs to make this distinction and preferably rely on a specific definition of “problem gambling”.

On the population level, however, increasing total consumption may have the effect that problem gambling also increases. This is assumed in the “total consumption model” (TCM; also called the “single distribution theory” or the “Ledermann theory”), which is the second conceptual issue to be discussed in this section.

The TCM has been widely accepted in the alcohol field but an increasing number of researchers view it as only a rough approximation, which is not applicable to all contexts (Duffy, 1986; Duffy, 2011). The model states that when the total consumption of alcohol in a country increases, the harmful use also increases. This is because the increase in consumption will affect all levels – hence some of those who before were close to harmful use will now use alcohol in a harmful way, and some of those who before used alcohol somewhat harmfully will now use it more harmfully. The inverse will hold if there is a decrease in total consumption.

Although a few studies have suggested that the TCM applies to gambling (Bang & Rossow, 2012; Chipman et al., 2006; Hansen & Rossow, 2008; Lund, 2008) much research remains to be done before we have good understanding about its possible applicability in various contexts and under different market conditions.

A major complication in applying the TCM is that some forms of gambling are more closely associated with problem gambling than others (Binde, 2011b; Meyer et al., 2011; Productivity Commission, 2010). For example, in many countries there are high rates of problem gambling among those who regularly play electronic gaming machines and casino games, while rates are typically low among those who mostly enter traditional lotteries. In general, forms of gambling with rapid and repetitive play are more closely associated with problem gambling than slow and discontinuous forms (Griffiths & Auer, 2013).

It seems therefore necessary, if applying the TCM to gambling, to apply it to forms of gambling rather than to the consumption of gambling in general. Substitution effects should then also be considered. An increase in consumption of a relatively harmless form of gambling may lead to a decrease in consumption of a relatively harmful form. Such economic aspects of gambling markets are not well understood and more research would be valuable for understanding the relation between harmless and harmful consumption (i.e. problem gambling).

Another major complication, if applying the TCM to gambling, is that while the harm of alcohol on the individual increases roughly proportionally to the amount of alcohol consumed, the same may not hold for gambling. As outlined above, high consumption need not imply problem gambling, which is characterized by both negative consequences and impaired control.

Finally, as has been argued with regard to alcohol, the TCM may be fundamentally flawed in its basic assumption. It may be that the consumption of the heaviest users affects the total consumption since it constitutes such a large share of it. Therefore, there will often be co-variation between total consumption and harmful consumption, but the causality is the reverse of what is assumed in the TCM (Duffy, 2011).

The third conceptual issue discussed in this section is availability versus adaption. Advertising is an aspect of the availability of gambling. Availability has several dimensions, for example geographical, physical, temporal, financial and perceived (Moore et al., 2011; Thomas et al., 2011). Advertising relates to perceived availability: it makes people aware of commercial offers of gambling in various forms and at various locations, including the internet.

Most gambling researchers agree that increasing availability generally means that the participation in gambling increases, and with that problem gambling. There is growing evidence, however, that adaption processes in society and among the population typically take place, and that over time a trend of increasing participation in gambling and problem gambling prevalence may weaken and eventually be reversed, despite high or still increasing availability (Abbott et al., 2013; LaPlante & Shaffer, 2007; Storer et al., 2009; Williams et al., 2012b). Adaption may be seen as a response to the increase in gambling participation and problem gambling. Prevention efforts are intensified, gambling companies implement responsible gambling measures, treatment is provided more efficiently, some of those who recently have begun to gamble excessively realize that they need to cut down on gambling, the novelty value of recently introduced forms of gambling wears off, and there is a growing awareness in society of the risks associated with gambling (Abbott et al., 2013; Binde, 2014).

It is plausible that such adaption processes also include gambling advertising, being a part of perceived availability. As to advertising generally, it is known that its efficiency in stimulating sales does not increase linearly with increased volume of advertisements; the advertising-response function is concave at its end (Rao & Miller, 1975). In terms of consumers' perceptions, this is known as "advertising fatigue".

The impact of gambling advertising on participation in gambling and the prevalence of problem gambling thus needs to be considered from the perspective of both availability and adaption, which are two general forces that dynamically interact over time.

Recommendations for future research

- High consumption of gambling is not the same as problem gambling; any study of advertising impact on the individual level needs to make this distinction

- If a study explores the impact of advertising on problem gambling, it should use a clear definition of problem gambling and have an explicit hypothesis about how advertising impact may relate to problem gambling according to that definition.
- If a total consumption model is implied or used, then the complications of applying such a model to gambling should be addressed.

2.5 Advertising and problem gambling: Possible impact mechanisms

In order to lay a foundation for the following discussions on empirical research, some possible mechanisms will be outlined here on the individual level of how advertising may impact the prevalence of problem gambling. The list of mechanisms may not be exhaustive.

First, advertising may stimulate an individual to participate in gambling to such a degree that non-problem gambling becomes problematic. In terms of the definition of problem gambling presented in Section 2.4, advertising might thus increase the amount of money and time spent on gambling, which produces negative consequences. A number of more specific mechanisms are possible, such as advertising messages amplifying particular risk factors for problem gambling and contributing to impaired control (Schottler Consulting, 2012: p. 11-16).

Second, advertising may entice a person to start participating in a form of gambling that he or she *quickly* develops problems with. Had it not been for the advertising, that person would not have begun playing the game or would have started at a later point in time, when he or she would have been less likely to develop problems (e.g. in the case of youth gambling, because of being older and more mature), or when problems could have been more efficiently prevented (e.g. because more efficient responsible gambling measures would have been in place). Thus, the assumption is that the earlier (in life or in the product cycle of a form of gambling) an individual starts to participate in a form of gambling, the higher the risk of developing gambling problems. With regard to the product cycle of forms of gambling, this impact mechanism is related to increasing perceived availability of gambling, before adaption processes have begun to work (see Section 2.4).

Third, advertising may entice a person to participate in a form of gambling that he or she *later* develops problems with. There may be several reasons for this. In the case of young people, it is often observed in population studies that gambling at an early age is associated with the risk of having problems later in life (Kessler et al., 2008). This might be because an individual who is accustomed to participate in various forms of gambling experiences the possible usefulness of these for modifying mood states, that is, for relaxation or excitement. If that individual at some point later in life has a personal crisis, it would increase the risk of using

gambling for maladaptive coping with negative mood states. This assumption is consistent with the observation that participation in a multitude of various forms of gambling is associated with problem gambling (Phillips et al., 2013).

Fourth, advertising may maintain or exacerbate already existing gambling problems. Impulses to gamble become more frequent; efforts to cut down on gambling are hampered. Advertising may trigger a relapse for former problem gamblers who have decided to quit gambling, which is a manifestation of impaired control.

Fifth, in the long term, gambling advertising may contribute to a positive attitude in society towards gambling. It portrays gambling as an acceptable leisure activity associated with positive qualities such as success, economic affluence, excitement and fun. It is feared that young people are especially susceptible to these values. Positive attitudes may stimulate gambling participation in ways that cannot be reduced to the more direct impact of advertising on individual involvement in and control over the extent of gambling. For example, they may entail that frequent gambling for considerable amounts of money becomes perceived to be quite normal and acceptable, which raises the threshold for when those who have such gambling habits receive social pressure from others to play with moderation.

Of the five ways listed above in which gambling advertising hypothetically may contribute to problem gambling, there is direct evidence only for the fourth: advertising maintains or exacerbates already existing gambling problems. For the first one – advertising stimulates involvement in gambling so that it becomes problematic – there is some support. Although the three other ways appear theoretically plausible, there is little empirical support.

Thus far reasons why advertising may increase the prevalence of problem gambling have been listed. Although it might seem counterintuitive, an unbiased review such as this should also discuss whether side effects of gambling advertising might decrease the prevalence of problem gambling. The following mechanisms are in theory conceivable.

First, advertising is expensive. If gambling companies in a competitive market invest much money into advertising in order to maintain or increase their market share it may make gambling more expensive for consumers, which in turn might decrease total consumption. The less effective advertising is in stimulating sales, the stronger this effect would become. As far as the TCM is valid, this would reduce problem gambling.

Second, in general, advertising in a competitive market that focuses on price drives prices down and increases total consumption; advertising that focuses on brands drives prices up – since consumers are made willing to pay extra for buying a specific brand – and reduces total consumption. This has been observed in the field of alcohol (Nelson, 2001). It is conceivable that some gambling companies

promote their brands by associating them with responsibility, good customer service, as well as entertainment rather than hard-core gambling, and thereby attracts customers who are willing to pay a slightly higher price for gambling with these companies. This would reduce problem gambling; again, under the premise that the TCM is valid.

Third, in the EU there are state-owned gambling companies that heavily advertise their services with the stated purpose of channelling the demand away from operators that are not licensed in the jurisdictions in question, and who supposedly have inferior responsible gambling measures for preventing harmful gambling. To the extent that this supposition is true, such advertising would reduce problem gambling.

Fourth, if there is plenty of advertising for relatively harmless forms of gambling, such as lotteries, this may channel the demand away from more risky forms of gambling for which there is no advertising, thereby reducing problem gambling.

Fifth, if a recovering problem gambler is repeatedly exposed to gambling advertising, feels the urge to gamble, but endures the unpleasant feeling of craving and refrains from gambling, this would in theory – according to a behavioural paradigm – eventually extinguish the craving for gambling set off by gambling-related cues (Binde, 2009a). This would be analogous to cue-exposure therapy, which has been used for treating problem gamblers (Morefield et al., 2013; Oakes et al., 2008; Symes & Nicki, 1997).

Of the five ways listed above in which side effects of gambling advertising may hypothetically reduce problem gambling, there is direct evidence for none. Indirect or partial support seems also to be scant. All these points concern complex processes and chains of effects that, although conceivable, in reality would require very specific sets of conditions and causal mechanisms to be present. In short, their plausibility appears low, and at most they may, to some small degree, reduce the net effect of advertising contributing to problem gambling.

2.6 An estimate of advertising impact on the prevalence of problem gambling

There is no measurement of any kind of the impact that advertising has on the prevalence of problem gambling in a country. However, the present author (Binde, 2007b) has made an estimate of the scale of impact; recent reviewers of the field have found the estimate to be fair and sensible (Planzer & Wardle, 2011; Williams et al., 2012a). The estimate relies on the scant information that exists, complemented with general knowledge about how advertising works, and results from studies on alcohol advertising, and asks the simple question whether the impact is large, small or none. Although such an estimate certainly is approximate, it is of value because it gives an idea of the possibilities of measuring the impact

more precisely – a larger impact would be easier to detect and measure than a small one. The conclusion is that, in general, the impact of advertising on the prevalence of problem gambling is relatively small. However, it is not negligible and in specific circumstances it is likely to be greater.

It is very unlikely that advertising should have no impact whatsoever on problem gambling. An impact is theoretically plausible, as argued in the previous section concerning a number of ways in which advertising might contribute to problem gambling. That advertising has an impact is also supported by several studies (see below) in which problem gamblers report that advertising has contributed to their past or present problems; some of them have provided detailed accounts of the impact of advertising that we have no reason to call into question. The previous section also included a list of possible ways in which side effects of advertising might reduce problem gambling. All of these are hypothetical – there seems to be no direct evidence that any of them actually reduces problem gambling – and can hardly be assumed to cancel out the impact that advertising has on the prevalence of problem gambling; at the most, they may somewhat lessen the negative impact.

It is also very unlikely that advertising is a major cause of problem gambling. There are several indications of that.

In some countries, such as in Sweden, the forms of gambling that are heavily promoted by advertising (e.g. lotteries) have a low prevalence rate of problem gambling, while forms that have a high prevalence rate (e.g. electronic gaming machines) are promoted very little or not at all. This is the inverse of what we could expect if advertising had a substantial influence on the prevalence rates of problem gambling.

A cursory comparison of countries around the world now and in the past, taking into account the prevalence of problem gambling and the eventual presence of gambling advertising, does not suggest that extensive advertising is related to high prevalence rates. There are countries with high prevalence and little gambling advertising, and on the contrary there are countries with average or low prevalence and relatively heavy advertising.

A recent meta-study of 202 problem gambling prevalence studies revealed a downward trend in problem gambling prevalence in the USA, Canada and Australia that commenced in around 1997, and in the rest of the world in 2004, which continued to the end of the study period, 2008 (Williams et al., 2012b). Given that the volume of gambling advertising in these periods has increased in many countries around the world, it seems as if problem gambling tends to decrease despite more advertising. If advertising strongly contributed to problem gambling prevalence, it would be difficult to explain the downward trend in prevalence.

There are numerous studies of the impact of alcohol advertising on the consumption of alcohol and harmful alcohol use (see Sections 4.1 and 4.2). The methods and results of these studies have been debated, but there is general agreement that there is little evidence that the impact of alcohol advertising accounts for a substantial part of harmful consumption. It would thus be surprising if it should be so with respect to gambling advertising and problem gambling.

As stated, there are studies which convincingly show that some problem gamblers have been negatively influenced by advertising; however, these studies also show that, typically, the great majority of problem gamblers report no or only minor influence from advertising.

Circumstances relating to the gambling market may have an influence on the impact of gambling advertising. Common knowledge about how advertising works suggests that the impact of gambling advertising is greater on an immature than a mature market. In a mature market, advertising chiefly affects market share of competing companies, while in an immature market advertising recruits new customers. Thus, if a new form of gambling is introduced in a country, advertising is likely to speed up its spread among consumers, which is one way in which advertising theoretically can contribute to problem gambling. This risk is accentuated if new forms of gambling are particularly risky and appeal to vulnerable groups, such as young people.

3 STUDIES OF THE VOLUME OF ADVERTISING AND ITS EFFICIENCY

We will now commence the review of research on gambling advertising. The first three approaches to be discussed will be surveys of the volume and forms of advertising, the experimental method of eye-tracking for measuring actual exposure to advertising, and studies of the economic efficiency of advertising.

3.1 Surveying the volume and forms of advertising

Basic knowledge about gambling advertising in a country ought to include an estimate of its volume, its forms and preferably also people's actual exposure to it.

Advertising volume can be measured in several ways. Gambling companies may provide data on expenses for advertising and marketing. Changes over time in expenses indicate changes in the volume of advertising; adjustments must of course be made for inflation and fluctuations over time in the general price level on the advertising market. However, private companies are often reluctant to provide such information since they believe that their competitors may take advantage of it. State-owned companies may be asked by their owners to provide

such information for reasons of transparency and allowing their activities to be subject to public scrutiny and academic studies.

The volume of advertising can be measured directly by media tracking, a service provided by private enterprises. The amount of advertising for products or companies in various media channels is measured; for example, newspaper advertisements are measured in centimetres of column length, and the number of television advertising spots is counted. Figures on the frequencies of advertisements per media and per day are compiled. It is not recommended that academic studies perform their own media tracking, except perhaps when there are only a few media to cover for short periods of time; full scale media tracking across many media channels requires large resources and is best done by professional enterprises.

Data from media tracking can be used to make a cost estimate on the basis of the list price for advertising in various media. Since companies that buy large amounts of advertising space are offered rebates, which typically are kept secret, the cost is an estimate (sometimes called “gross advertising expense”, before rebates, as opposed to “net advertising expense”, after rebates).

By means of audience measurement, the number of viewers of television advertisements can be estimated. Such measurements use a panel of people representative of the population, whose television viewing is documented by means of electronic devices. This allows statistics on viewing behaviour and exposure to advertisements of different types for various categories of people, for example of different ages, genders and social grades. Audience measurement is a service provided by professional enterprises and is an extension to media tracking.

Knowledge about the volume, forms and costs of gambling advertising is for many reasons of interest in policy and research.

The volume of gambling advertising in various media can be compared with the total amount of advertising in these media. This will show how much of advertising media space is occupied by gambling advertisements. For example, the comprehensive Ofcom report (2013) on gambling advertising in the UK showed that four percent of all television advertising relates to gambling. Frequency counts of advertisements can indicate how many times a day gambling advertisements appear in various media (e.g. McMullan & Miller, 2008b) and if they appear more frequently in media channels with a high proportion of young people among the receivers (e.g. Korn et al., 2008). Relying on audience measurement, the Ofcom report (2013) shows that adults in the UK on average view about two television commercials for gambling per day and children about four per week. Studies have also assessed the number of sport sponsorship messages that are about gambling during live and televised sport events (Thomas et al., 2012a) and on the internet (Maher et al., 2006), and how often lottery promotion and advertisements appear

in stores in areas with different socioeconomic characteristics (Planinac et al., 2011). Such knowledge is valuable to any discussion of the impact of advertising on the population in general, vulnerable groups and young people.

A time series of measurements of advertising expenses or volume will reveal whether advertising increases or decreases. For example, the Ofcom report (2013) shows a huge increase in television advertising over past years: “the total number of gambling advertisement spots shown on television increased from 152,000 in 2006 to 537,000 in 2008 after the market was liberalised, reaching 1.39 million in 2012”. Assuming that everything else remains the same (e.g. the content of advertising and the attention that people actually pay to it), increased volume of advertising over time ought to mean that its impact on the prevalence of gambling and problem gambling also increased over time (although probably not linearly), whatever magnitude that impact had at first. Of course, “everything else” is never exactly the same but there might be time periods when other changes are minor.

Data from time series of advertising volume can be analysed with regard to various categories of advertising. For example, Binde (2005) showed that the proportion of gambling advertising in Swedish mass media by unregulated companies increased between 2000 and 2004; these advertisements were all for internet gambling. Variations in the volume of advertising for various forms of gambling give an indication of trends in the gambling market. For example, the Ofcom report (2013) on gambling advertising in the UK showed that exposure to bingo advertising increased ten-fold between 2005 and 2012, giving a clear indication that online bingo has been growing at a fast rate.

Another indicator of trends in the gambling market is companies’ expenses for advertising per current customer. If a specific company spends a relatively large amount, it suggests that it is trying hard to attract new customers and attempting to break into an already established market sector. If several companies increase their spending it may imply that a sector of the gambling market is expanding and the companies are advertising aggressively to recruit new customers before the sector has become saturated.

Studies of advertising volume can tell if advertising restrictions are effective. For example, an American study that compared the volume of advertising for internet gambling during televised poker tournaments in 2006 and 2010 showed that government regulations intended to curb such advertisements were largely ineffective (Kim et al., 2013).

Advertising expenses of gambling companies may be compared with their turnover and the allocation can be compared with corresponding allocations for other types of companies. Such comparisons indicate whether or not gambling companies spend an unusually large amount of their turnover on advertising. Clotfelter and Cook (1989) found that lotteries in the USA and Canada spent more

on advertising than the average of all US corporations, but less than the average of corporations that provided amusement and recreation services; Binde (2005) found that Swedish gambling companies spent about the same percentage of turnover on advertising as other companies in the consumer sector spent.

Recommendations for future research

- Statistics and studies of advertising volume, costs and exposure are useful for a number of reasons. The methodological challenges are minor, compared with those of many other kinds of studies of gambling advertising. Recurrent measurements give valuable insight into trends in the gambling market and provide basic facts about the extent and forms of advertising as well as people's exposure to it, giving perspective to discussions and research findings on its impact on problem gambling. As a previous review of the field concluded, hard facts are needed, as much of the discussions on gambling advertising are opinion-driven (Planzer & Wardle, 2011). Such studies have high priority.

3.2 *Eye-tracking: an experimental method for exploring exposure*

Audience measurement (see above, Section 3.1) gives an indication of how many viewers are exposed to television commercials. Recall of advertising messages in various media can be measured by means of interviews with samples of consumers. However, neither of these methods tells what parts of complex promotional messages are viewed and how exposure on the individual level is related to attention. To gain further knowledge on these points, experimental methods can be used. One such method is eye-tracking – to experimentally observe and record subjects' attention to visual stimuli as this is expressed by them focusing their eyes at different points in their field of vision. The method has not been used widely in advertising research; among the few applications are studies of adolescents' attention to responsibility messages and health warnings in alcohol and cigarette advertising (Krugman et al., 1994; Thomsen & Fulton, 2007). More generally, eye-tracking has been used in a variety of psychological and other studies (Sandberg et al., 2011).

Eye-tracking seems not to have been used in any research specifically on gambling advertising, but such advertising was included as one of several kinds of advertising in a Swedish study (Sandberg et al., 2011). This study will be described in some detail in order to illustrate the potential of the eye-tracking method.

The Swedish study was conducted in 2008 and explored young people's exposure to and perceptions of advertising on the internet. Participants consisted of 39 young people aged 15. A few weeks before the eye-tracking study the participants

completed a questionnaire about their internet use, which included giving examples of internet sites that they visited.

The experimental setup included a computer on which each young person was individually allowed to browse the internet freely for 15 minutes. A list of suggested sites was provided (derived from the previous questionnaire) but the young people were allowed to visit any site they wished. What was displayed on the computer screen was recorded and an eye-tracking device simultaneously recorded the eye movements of the subject. These two recordings allowed the researchers to observe and quantify what exactly the subjects had been looking at, and for how long, on the web pages they visited when browsing the internet. The basic premise for the study was, as for all eye-tracking research, that there is generally a good match between the eye's visual focus and the cognitive attention of the viewer. The eyes need to focus for at least about 80 milliseconds for the subject to gather visual information. During the rapid movements from one fixation of the eyes to another (saccades) the brain receives practically no visual information. Peripheral vision (and parafoveal vision, which previews central vision) constantly gives information to the brain, but on an optically lower resolution and at a lower level of cognitive attention than sharp central vision (foveal vision).

The researchers viewed and analysed the recordings from the subjects' internet browsing. On the web pages that they had visited, the researchers found over 5,000 advertisements. These were categorized according to content; 11 different categories of advertisements were identified, including "gambling" ("ads for poker, games, football betting, etc."). The researchers found 576 gambling advertisements, which was slightly more than 11 percent of the total.

The study made it possible to compare potential exposure (the advertisements that were visible on the screen in front of the subject) with actual exposure (the advertisements that the subject viewed). The subjects visually paid attention to only about ten percent of all advertisements; total viewing time of advertisements over the 15-minute test was on average 14.5 seconds. Boys paid about three times more attention to gambling advertising than girls.

By comparing potential exposure to actual exposure, relative exposure could be calculated, which is a measure of the advertisements' efficiency. The study found that advertisements for gambling were nearly four times as efficient with respect to boys as compared with girls.

Immediately after the eye-tracking part of the study, a semi-structured follow-up interview of about one-hour duration was conducted with each participant. The interviewer and the subject together viewed and discussed the film from the eye-tracking, which showed where on the computer screen the point of focus of the eyes had been. In this phase of the study, perceived exposure was thus explored.

Most of the young people said that they disliked advertising on the internet and tried to avoid it – which they apparently succeeded in doing, given the huge discrepancy revealed by the study between potential and actual exposure. However, several of the subjects could not recognize advertisements that they had looked at; thus there was a notable discrepancy also between actual and perceived exposure. The study could not tell if the advertisements that had been viewed but later not recognized had left any cognitive traces. It may be noted that it was *recognition* rather than *recall* of advertisements that was explored in this part of the study; most research in the perception of gambling advertising concerns recall of advertisements (i.e. the subject answering a question such as “have you seen any gambling advertisements?”) despite recognition of advertisements (i.e. the subject being shown particular advertisements and asked if he or she recognizes them) being regarded in advertising research as a more robust indication of exposure (du Plessis, 1994). Other findings from this part of the eye-tracking study were that the young people were sometimes unable to distinguish advertising from non-advertising content, and that although they might recognize an advertisement, they could sometimes not tell from memory who was the sender and what was the message.

In a research field in which most other data on the individual experience of advertising come from self-report, eye-tracking has the advantage of giving hard figures as to what extent people actually pay attention to advertisements and the visual elements they contain. The extent of attention can be compared across different groups (e.g. young people versus adults, men versus women, problem gamblers versus non-problem gamblers), across different types of advertising (e.g. lotteries versus poker), and across different kinds of content and messages (as identified through content analysis). Since a significant difference between actual and perceived exposure can be expected, eye-tracking methodology promises knowledge that cannot be gained by interviews and focus groups. Follow-up interviews, as in the Swedish study described, would give qualitative data on the subjective experience of viewing gambling advertising.

Another use of eye-tracking methodology could be to evaluate the actual attention paid to responsibility messages in gambling advertising, as has been done with respect to health warnings in tobacco and alcohol advertising (Krugman et al., 1994; Thomsen & Fulton, 2007). Experiments could be conducted to arrive at a reasonable compromise between the size of such messages and the attention they receive, i.e. being actually noted by a substantial proportion of potential viewers.

However, eye-tracking studies have limitations. For example, the setting is unnatural, differing from everyday exposure to advertising, and the media channels for advertising are limited to what can be displayed in front of the subject. The method is best suited for analysing the relative attention that subjects pay to elements in complex visual information.

Recommendations for future research

- Eye-tracking has medium priority as an experimental method that could be used in studies of gambling advertising. Eye-tracking methodology shows differences between potential, actual and perceived exposure; it can give insights into the appeal of various kinds of marketing messages to different categories of consumers. Eye-tracking can also be used to evaluate the actual attention that people pay to responsibility messages embedded in gambling advertising.

3.3 *The economic efficiency of advertising*

If over a given time period the varying expenses for advertising are known, and if also the varying volume of sale of the products or services advertised is known, economists may assess to what degree advertising is efficient; that is, to what extent it stimulates consumption. To make such an assessment is, however, a complicated task with many methodological challenges, which is reflected in the contradictory conclusions of studies on the efficiency of advertising for a variety of consumer goods (Munoz, 2009).

A few efficiency studies have been carried out with respect to advertising for lotteries in monopoly markets. The absence of competition makes the analysis somewhat less complicated as total consumption can be measured, rather than consumption of the brands or products of various companies. The results of these studies, which have all concerned particular state lotteries in the USA, are mixed:

- Three studies of lotteries and lotto found that advertising was not efficient (Heiens, 1993; JLARC, 2012; Munoz, 2009);
- Two studies of lotteries found that advertising is fairly efficient (Stone, 2000; Zhang, 2004);
- One study of lottery advertising is inconclusive because there was not much variation in advertising expenses over the study time period, which made it difficult to assess advertising impact on sales (Mizerski et al., 2004; Mizerski & Mizerski, 2001)
- One study found that advertising for a scratch-card lottery was efficient (Munoz, 2009).

It is of interest to note that most econometric studies of lotteries show that jackpot size has a significant impact on the volume of sales (Munoz, 2009). Since this is a recurring finding, jackpot size is likely to be a more important factor in motivating people to enter lotteries than advertising. Indeed, several studies that have compared impact of advertising with impact of jackpot size on sales have found that jackpot size is more important (Heiens, 1999; JLARC, 2012; Munoz, 2009). Since consumers probably acquire knowledge about a big jackpot through

advertisements and other forms of marketing, this indicates that some advertising messages are more efficient than others.

Quite obviously, gambling companies have an immediate interest in advertising efficiency. They wish to know what kinds of advertising work best, and whether they spend too little, too much or just enough on advertising. However, if a study of the efficiency of advertising concerns a particular form of gambling rather than just a particular company in a competitive market, it would become of more general interest. Advertising efficiency might indicate something about the impact of advertising on problem gambling. If, for example, it is shown that advertising contributes very little to the consumption of a particular form of gambling, then this also indicates that such advertising contributes little to problem gambling. This especially as problem gamblers are usually high consumers; in some forms of gambling their spending accounts for about 20-30 percent of gambling companies' net revenue (Orford et al., 2013). Similarly, if no advertising at all is carried out for a particular form of gambling – which is an observation that can be made without conducting an econometric study – it is unlikely that gambling problems that concern that particular form have been created or worsened by advertising.

More generally, any consideration of the impact of advertising on the consumption of gambling should be informed by knowledge of the basic principles of advertising efficiency on different types of markets and under different conditions. Economic studies of advertising for consumer goods other than gambling have shown, for example, that an increasing amount of advertising eventually yields diminishing return in sales (see: Binde, 2007b; Planzer & Wardle, 2011). While it can be assumed that many such basic principles also apply to gambling markets, these may have specific conditions. Little is known about this because there are few economic studies on gambling advertising.

Recommendations for future research

- Although studies of advertising efficiency may reveal conditions specific for gambling markets and produce results that could be of some interest in rough assessments of the impact of advertising on problem gambling, such studies have low priority. They are valuable primarily for gambling companies and of academic interest to economic advertising research.

4 STUDIES OF ADVERTISING IMPACT ON PROBLEM GAMBLING

Quantitative studies of advertising impact would in theory indicate to what degree, if any, the prevalence of problem gambling would be reduced / increased if there was a significant reduction / increase in advertising for gambling, in general or for specific forms.

There are no such studies that focus on gambling advertising, but there are numerous studies of the impact of advertising on alcohol and tobacco use, especially among young people. Therefore it is of interest to look at such studies and consider whether similar research designs could be applied to gambling. In the following two sections we limit ourselves to discussing studies of alcohol advertising. These studies are, broadly speaking, of two kinds: longitudinal and econometric.

In the third, fourth and fifth sections other research approaches to explore the impact of advertising on problem gambling are discussed: possible experimental methods that have been used in research on alcohol advertising, cross-sectional observations, and self-rated impact.

4.1 Longitudinal youth studies – a look at alcohol research

Longitudinal studies of the impact on young people of alcohol advertising consist of a series of measurements in of a cohort of young people (Anderson et al., 2009b; Nelson, 2010). The studies are usually large-scale; they aim at answering several research questions relating to alcohol, health and lifestyle, of which advertising impact on alcohol use is just one. The first measurement in such a longitudinal study includes an estimate of exposure to advertising for each individual. In subsequent studies, the use of alcohol is assessed. In statistical analyses, which often include an effort to control for confounding factors, the impact of advertising is calculated. Some studies report the dose-response relationship, i.e. how much a specific dose of exposure to advertising increases the odds of the individual to start using alcohol.

Almost all the published studies find an association between estimated advertising exposure and subsequent alcohol use. They conclude that advertising for alcohol contributes to young people starting drinking at an early age, which is assumed to increase their risk for developing alcohol problems later in life. However, opinions differ as to the quality of these studies and the credibility of their results. Some researchers judge that they offer compelling evidence of the impact of alcohol advertising on young peoples' drinking (Anderson et al., 2009b). Other researchers point out methodological and analytical shortcomings, including publication bias, so severe that they doubt that any conclusions regarding the extent of advertising impact can be drawn (Nelson, 2010; Nelson, 2011). The present author tends to agree with the latter view. It is important to recognize that critique of these studies does not necessarily imply a belief that alcohol advertising has no impact on consumption of alcohol among young people. It is plausible that alcohol advertising has such an impact and the studies may perhaps give an indication of that; what seems less plausible is that the studies can reliably measure the magnitude of impact.

Of all the methodological problems of these studies, the fundamental one is how to measure exposure to advertising. The only way to measure that directly and reliably would be to mount a device with two video cameras on the head of an individual, one camera recording everything that is in front of the individual and the other tracking the movement of the eyes to determine what the eyes focus on. Similar devices are used in experiments (see Section 3.2), but of course they cannot be used in large-scale and long-term studies in natural settings.

All longitudinal studies use an indirect measure of alcohol advertising exposure, for example: how much advertising individuals recall having seen, how much time they say that they watch television (the assumption being that those who watch much television are exposed to much alcohol advertising), the magazines that they say they like to read (some magazines include more alcohol advertisements than others) and how much individuals report that they like advertisements for alcohol.

The problem with such measures is that there might be an underlying cause, such as a psychological trait or social context, which is not controlled for and which explains both the amount of “exposure” and the subsequent use or non-use of alcohol (Lovato et al., 2011; Nelson, 2010). For example, a young person from a religious family who reads mostly Christian magazines will have both a low exposure to alcohol advertisements in magazines and a lower risk for starting drinking at an early age; Christian lifestyle is thus a more plausible explanation of the person’s low alcohol consumption than low exposure to alcohol advertising. Another example would be a young person from a socially disadvantaged family where the parents have alcohol problems, who escapes from his or her daily stresses by watching television for long hours; this person’s increased risk to start drinking alcohol at an early age can be expected to have more to do with genetic inheritance and social context than with impact from alcohol advertisements on television.

If the research design of longitudinal studies of alcohol advertising impact were to be used for studies of gambling advertising, all methodological problems would remain and new ones would be added. Exposure to advertisements for different forms of gambling needs to be measured, since not all forms are equally addictive and associated with problem gambling. Since gambling in moderation is not harmful, problem gambling, rather than just participation in gambling, should preferably be the outcome measure. This means that the base rate of the outcome measure will be quite low, which would require many participants in a study to achieve statistical significance.

Recommendations for future research

- Because of the many and severe methodological problems that longitudinal studies of the impact of gambling advertising would face – such as how to measure exposure and how to control for confounding factors – there is a

significant risk that they would not produce reliable results. The results are bound to be contested, as are the results of longitudinal studies of alcohol advertising impact. Unless a study proposes innovative and feasible ways to handle the methodological problems, studies of this kind have low priority.

4.2 *Econometric alcohol studies and a public health law study*

An earlier section (Section 3.3) concerned econometric studies of the efficiency of advertising to stimulate the consumption of gambling. This section discusses the feasibility of econometric studies of advertising impact on specifically problem gambling. Since there are no studies, it is again instructive to consider the research that has been done with regard to alcohol advertising and alcohol consumption. A public health law study, which is quite similar to some econometric research, that included gambling advertising as one variable will also be discussed.

There are two main kinds of econometric studies of alcohol advertising: time series and cross-sectional panel studies. Time series studies compare the volume of advertising over time with a direct or indirect measure of consumption or abuse. The volume of advertising may be measured as advertising expenses over time, or before and after an advertising ban. Consumption can be measured as the volume of sales of alcohol and abuse by some of its consequences, such as the number of motor vehicle fatalities (Saffer, 1997).

The second kind of econometric studies of alcohol advertising and alcohol consumption compare and analyse data from several states or countries (panel data). The two kinds of studies can be combined, i.e. time series of panel data.

The results from these studies appear to be mixed. Alcohol advertising has the effect of stimulating (at least initially) the sale of the particular brand advertised, but its effect on the total consumption of alcohol and abuse is more uncertain. A multitude of factors influences the consumption of alcohol and the efficiency of advertising, such as the maturity of the market, price and taxes, shifts between the consumption of different types of alcoholic beverages, and whether advertising focuses on brand or price.

Two reviews of the econometric studies conclude that there is no scientific evidence for advertising for alcohol having an impact on the overall level of alcohol consumption and abuse (Nelson, 2001; Smart, 1988). However, there are researchers who maintain that there is econometric evidence that alcohol advertising contributes to increased consumption and abuse, although the interaction is typically low (Anderson et al., 2009a; Saffer, 2000).

The methodological difficulties of making similar econometric studies of gambling advertising and problem gambling have been discussed in detail

elsewhere (Binde, 2005; Binde, 2007b). The conclusion of these discussions is that it seems very difficult to reliably measure the impact of gambling advertising on problem gambling.

Two variables need to be measured: advertising volume and the prevalence of problem gambling. This could hypothetically be done in a time-series approach, a cross-sectional panel approach or a combination of these. Regardless of what approach a study would take, a fundamental problem is to detect the variations in problem gambling rates that might be caused by variations in advertising volume. These variations are likely to be small because the impact of advertising on problem gambling is, as said, probably relatively small compared with other factors. Problem gambling rates are difficult to measure with precision – the statistical margins of error are often large, requiring problem gambling to dramatically increase or decrease to produce a statistically significant difference between measurements – and if prevalence rates are to be compared between countries, the measured rates are influenced greatly by what particular screen is used and the methodological procedures (Williams & Volberg, 2009; Williams & Volberg, 2013). As mentioned above (Section 2.6), a cursory comparison of countries with relatively high and low prevalence of problem gambling, in relation to the extent of advertising in these countries, does not reveal any obvious pattern of correlation. There is also the issue of time lag between an individual being influenced by advertising and then possibly developing problem gambling, which in theory could be anything between quite short and very long (see Section 2.5).

A number of other econometric research designs are in principle possible (Binde, 2005) but they all appear in practice very difficult to implement because of methodological problems.

Finally, a study of gambling advertising from the perspective of public health law research should be mentioned, as it has some similarities with econometric panel studies. The study compares five regulatory variables with rates of disordered problem gambling prevalence in 12 European countries (Planzer et al., 2013). The study is the first of its kind and does not aim to prove causality between regulation and prevalence rates, but rather to be an initial exploration of associations that might support assumptions about causality. Despite the difficulties of research into the comparative effectiveness of regulatory approaches (Planzer & Wardle, 2011), the authors believe that one needs to start somewhere, which is the intention of their study.

Although data comes from various years in the period 1997-2010, the study is a cross-sectional panel study. One of the five variables in the study is advertising regulatory policy, subdivided into advertising for land-based and online games and ranging from “no specific restrictions”, to “some restrictions”, to “prohibition”. The variable is thus policy of advertising restrictions; the extent to which these restrictions have been efficient in practice has not been investigated. The only

statistically significant association found in the study was that rates of sub-clinical disordered gambling were lower in jurisdictions that mandated stricter regulation of advertising for online gambling. For advertising regulations of land-based games, no statistically significant correlation was detected with rates of disordered gambling.

As the authors point out, the study is methodologically challenging, readers should interpret the results with caution because sample sizes are in many cases small due to the limited number of prevalence estimates, and conclusions cannot be drawn about causality because of the cross-sectional design of the study. The association between lower rates of sub-clinical gambling problems and more severe restrictions of advertising for online gambling could thus be caused by (1) a statistical fluctuation in a study that explores many possible correlations, (2) restrictions on advertising being implemented because rates of problem gambling are already relatively high and authorities wish to bring them down, (3) a third confounding factor causes both advertising restrictions and relatively high prevalence of problem gambling being indicated by population studies or (4) that advertising for online gambling contributed slightly (about 18 percent of total prevalence) to the prevalence of sub-clinical disordered gambling. In the latter case, that would be consistent with the assumption presented in this review (Section 2.6) that gambling advertising in some circumstances has a larger impact than otherwise – it may speed up the spread among consumers of a new and relatively risky form of gambling, such as online gambling, which initially, before adaption processes have started to work, increases the prevalence of problem gambling.

To conclude, there is little prospect of reliably measuring the general impact of advertising on problem gambling. One could also ask what the policy implications would be of a research finding that advertising contributed to, for example, 0.3 percent of a total of 2.0 percent of problem gambling prevalence in a country. Would that warrant a total advertising ban, a forced reduction of advertising volume, or no action at all? To be truly useful for policymaking and responsible gambling, econometric research should ideally distinguish between advertising for more or less harmful forms of gambling and measure the impact on various vulnerable groups among the population. That would allow regulatory actions or self-imposed restrictions on behalf of gambling companies to be directed at the forms of advertising that contribute most to problem gambling. However, such research appears very complicated and is unlikely to produce reliable results, unless convincing ways of tackling the methodological problems are suggested.

Recommendations for future research

- Econometric studies of the impact of gambling advertising on problem gambling prevalence, using research designs similar to those of studies of the impact of alcohol advertising, face great methodological challenges

and appear to have little prospect of producing reliable results. Unless convincing ways of tackling the methodological problems are suggested, such studies have low priority.

4.3 Possible experimental methods from alcohol advertising studies

There seem to be no experimental studies of the impact of gambling advertising. However, there are a number of such studies with regard to alcohol advertising. A sample of these will be briefly presented to illustrate this field of research (c.f. Binde, 2007c).

- A study measured and compared heart rate and skin conductance of “light” and “moderate” drinkers while they viewed alcohol and non-alcohol advertising in an experimental setting (Cassisi et al., 1998). The two different kinds of advertising did not cause different responses in either of the groups. Any kind of advertising caused light drinkers to have lower heart rate and decreased skin conductance while the opposite physical response was induced in moderate drinkers; no good explanation could be found for this.
- A magnet resonance imaging study found significant differences between adolescents with and without alcohol use disorder while they viewed alcohol advertisements (Tapert et al., 2003). Those with alcohol use disorder showed greater activation in addiction-related parts of the brain than did controls.
- Six groups of male university students were shown the same TV show but in two different versions – with or without alcohol scenes – and with three different types of advertising: beer, non-alcoholic beverages or food (Sobell et al., 1986). No differences were found between the six groups in the amount of light beer that they drank in what they believed to be a taste rating but was in fact an unobtrusive measure of their desire to drink alcohol.
- As in the study described above, subjects in six groups viewed different versions of a TV show (Sobell et al., 1993). All the subjects were alcohol abusers and completed a drinking questionnaire after having viewed the show. It was found that those who had viewed the version of the show with alcohol cues in some of the scenes had less self-perceived ability to resist urges to drink. Alcohol advertising did not produce this effect.
- Male college students were shown a soccer game on video in three different versions: zero, four or nine beer commercials (Kohn & Smart, 1984). Half the students had access to beer during the entire soccer game video while half had access after half an hour. Exposure to commercials

increased beer consumption initially but advertising had no impact on total consumption. Delayed access to beer led to compensatory consumption, but unrelated to advertising.

As suggested by these examples of experimental studies, there are many possible designs for similar studies of gambling advertising. However, it may be asked what their value would be. All experimental studies are limited by being artificial and those that use samples of university students have their particular limitations concerning the representativeness of the participants in relation to gamblers in general and the population (Bernhard, 2010; Gainsbury et al., 2014).

Experimental studies that aim at answering broad questions regarding the impact of advertising on gambling involvement are probably less likely to produce convincing and relevant results than studies that pose specific questions, especially regarding psychobiological processes. For example, it would be interesting to know whether some forms of gambling advertising and messages induce particularly strong reactions in the brain functions that in magnet resonance imaging studies have been found to relate to problem gambling (Camchong et al., 2007; Clark et al., 2009; Tanabe et al., 2007).

Recommendations for future research

- Since many kinds of experimental methods could be used to explore the perception of and reaction to gambling advertising, it is difficult to comment in general about their priority in relation to other research approaches. Problem gambling has a psychobiological dimension and it is warranted to support experimental and other research into that area. Such research could very well include gambling advertising, for example in the form of visual cues in experiments. That would have the potential to produce knowledge valuable both more generally for the understanding of the underlying mechanisms of problem gambling on the individual level, and specifically about how gambling advertising influences the individual. Research of this specific kind has high priority; otherwise experimental research has medium priority.

4.4 Cross-sectional observations

In a number of cross-sectional studies of population samples or specific groups, including young people, an association has been observed between on the one hand recall of having seen gambling advertising and on the other hand self-reported gambling involvement and/or gambling problems (Amey, 2001; Borg & Stranahan, 2005; Carlson & Moore, 1998; Clotfelter & Cook, 1989; Derevensky et al., 2010; Fried et al., 2010; Hing et al., 2013; Korn et al., 2008; Miller & Mizerski, 1998; Schottler Consulting, 2012; Stranahan & Borg, 1998). High recall is associated with gambling more than average and/or having gambling problems.

One study found an association between high recall, positive attitudes towards gambling and high intention to gamble (Lee et al., 2008).

These observations may at first sight give an impression of providing a quantitative measure of advertising impact on problem gambling. However, since the observations are cross-sectional, no conclusion can be drawn regarding causality. There are several possible explanations for the association:

- Those who recall having seen much gambling advertising have indeed seen much; advertising has stimulated their involvement in gambling and contributed to their gambling problems.
- Individuals who have an interest in gambling and gamble much, including problem gamblers, are more attentive to gambling advertising and more easily recall having seen it.
- A third factor explains the association between recall and high gambling involvement or problems, for example a lifestyle that predisposes both to viewing media with plenty of gambling advertising as well as having a positive attitude towards gambling.

These explanations are not mutually exclusive and might together create the observed associations.

Although cross-sectional observations do not indicate causality, they do indeed give indications about the role that gambling advertising has for gamblers. This is of value for the study of perceptions of and attitudes towards gambling advertising (Section 5.2).

Recommendations for future research

- Cross-sectional observations of association between on the one hand recall of gambling advertising and on the other hand intentions to gamble, gambling involvement or having gambling problems do not tell anything about causality – that is, the impact of gambling advertising. They are therefore of limited value and in themselves of low priority. Nevertheless, they give indications about the role that advertising plays for gamblers and are therefore of value as part of studies of perceptions and attitudes towards gambling advertising.

4.5 Self-rated impact of gambling advertising

In some studies the participants are asked to tell about or estimate the impact that gambling advertising has on them.

- A questionnaire included the statements “Gambling advertising increases my interest in gambling” and “Sometimes or often gambled after seeing an

advertisement” (Derevensky et al., 2010). Agreement with the second of these statements was associated with a high score on a “vulnerability index”.

- A qualitative interview study of current and former problem gamblers asked participants to tell about the impact that advertising had on them (Binde, 2009a). Some of the participants reported advertising having a significant negative impact on their problems and gave detailed examples of that; the majority reported little or no impact.
- A youth study included the question “Are you more likely to buy a lottery ticket... if you have seen an advertisement for it?” (Korn et al., 2008). Nearly 40 percent of participants answered in the affirmative; problem gamblers were overrepresented (55 percent answering “yes”).
- An Australian study with 100 individuals from each of four ethnic groups included the question, “If any, how much influence do you feel that this gambling advertising had on you spending more than you wanted to spend in the past 12 months?” (Schottler Consulting, 2012). Problem gamblers reported larger influence than non-problem gamblers for some forms of gambling, and for some advertising slogans, but not for others.
- A study including 365 self-selected female gamblers from Ontario found that 20 percent of them had felt urges to gamble from advertisements (Boughton & Brewster, 2002).
- The statement “Advertising encouraged me to think I could win” was included in a New Zealand questionnaire study (Clarke et al., 2006; Clarke et al., 2007). Huge differences were found between ethnic groups, ranging between 37 percent (Samoan) and 89 percent (*Pākehā*, or New Zealanders of European extraction) affirmative answers; problem gamblers agreed with the statement much more often than non-problem gamblers.
- A study of demographic and clinical features of 131 adult pathological gamblers included the question whether they had urges to gamble triggered by advertising; 46 percent reported such urges (Grant & Kim, 2001)
- A Swedish study using a “twin” design, with one half problem gamblers (defined as scoring 3+ on SOGS, lifetime) and the other half matched controls without gambling problems, included the question, “Have you gambled more because of advertising?” (Jonsson et al., 2003). Of problem gamblers, 28 percent answered in the affirmative as compared with 22 percent of controls.
- A Danish population study found that problem gamblers reported being more influenced by advertising than non-problem gamblers (Bonke, 2007).

- In Hong Kong, a study asked respondents if gambling advertising had made them less or more willing to gamble (Hoa et al., 2012); problem gamblers reported being made more willing than non-problem gamblers.
- A sample of young people were asked if they would be “more likely to purchase a lottery ticket because they had seen the advertisement” (Felsher et al., 2004a; Felsher et al., 2004b); problem gamblers reported being more likely than non-problem gamblers.
- An online survey of internet gamblers found that: “compared to all other gamblers, problem gamblers were significantly more likely to gamble online because of ... advertising” (McCormack et al., 2013).

In addition there are some miscellaneous observations of self-rated advertising impact, including that 13 percent of undergraduate student poker players reported having begun playing poker partly because of advertising (Shead et al., 2008) and that some participants in a qualitative study of internet problem gamblers reported being triggered to gamble by advertising (Valentine & Hughes, 2008).

In general, peoples’ self-assessment as to what extent their consumer behaviour is influenced by advertising is unreliable; an extensive discussion with respect to gambling advertising is offered by Binde (2005; 2007b; 2007c; 2009a). Here follow some key points.

Much of advertising disguises its message to sell by using humour and attractive imagery. Messages are repeated over and over again so that even if the viewers’ attention is low, a recollection of brand or product is established over time. The impact of advertising on the individual level need not to be great for it to produce an increase in sales; it may suffice with a slight shift in preference that causes a small fraction of millions of consumers to choose one product rather than another. Thus, with the exception of cases when individuals clearly recall having bought a product just because of an advertisement (e.g. that informed of a price cut or caused an immediate desire for the product), self-assessment of advertising impact in general should be regarded with caution.

In advertising studies, the “third person effect” is well-known – the tendency for an individual to maintain that advertising has little impact on himself or herself, but a substantial impact on other people (not “me”, not “you”, but “other people”, i.e. “third persons”). A study has shown that this effect is present also with regard to gambling advertising (Shah et al., 1999; Yuon et al., 2000). The effect is caused in part by individuals being reluctant to admit that they are easily led by advertising – which in a critical examination often appears as obviously biased and appealing to vanity, credulity and unrealistic fantasies. The third person effect is also caused by individuals assuming that, since there is much advertising, it ought to have a substantial impact on consumers (others). The study found a strong association

between the belief that gambling advertising has a strong impact on others and the willingness to restrict such advertising (Yuon et al., 2000).

Therefore, gamblers in general cannot provide – retrospectively or hypothetically – an accurate quantitative appraisal of the extent to which they are influenced by gambling advertising. A quantitative figure in absolute number of self-rated advertising impact reported by non-problem gamblers is in itself largely meaningless, since it is uncertain what it actually denotes.

However, quantitative measures of self-rated advertising impact become more valuable if they show relative differences between groups of people (e.g. young/adults, men/women, ethnic groups, gamblers with and without problems) and different forms of gambling. As mentioned, a New Zealand study found significant differences between ethnic groups in the extent that people belonging to them believed that advertising had encouraged them to win (Clarke et al., 2006). Another New Zealand study found the self-rated impact of advertising differed between various forms of gambling (Schottler Consulting, 2012).

Differences have been found also with regard to specific advertising messages. One study found, for example, that slogans about large jackpots had a stronger self-perceived impact among at risk/problem gamblers than among non-problem gamblers (Schottler Consulting, 2012). This indicates that jackpot advertising connects with some specific characteristic of such gamblers, for example chasing losses or hoping that gambling may solve economic problems.

Differences with respect to groups of people and types of messages can be explored further by qualitative methods, i.e. interviewing people from various groups and asking them how they perceive advertising and what their attitudes are (Schottler Consulting, 2012). Facts and conditions can be revealed that are useful for formulating advertising guidelines and for harm prevention (see Section 5.3).

In an examination of results from various studies that have included queries about self-rated impact of gambling advertising, Binde (2009a) observed that the more severe the gambling problems among the participants, the larger tended to be the self-rated negative impacts of gambling advertising. The most plausible explanation for this is that the more severe a person's gambling problems, the higher his or her awareness of having a problem, and consequently the more sensitive that person tends to be to anything that triggers an impulse and desire to gamble, including advertising. As one of the participants in Binde's qualitative study (2009a) remarked, "*The advertising becomes more and more obvious when you don't want to see it—there's something strange about that ...*"

Recommendations for future research

- Gamblers in general cannot accurately appraise the extent to which they are influenced by gambling advertising. However, to explore the self-rated

impact of gambling advertising is of high priority if different groups of people and various forms of gambling are distinguished and compared. It is recommended to explore the self-rated impact of gambling advertising in research on perceptions of and attitudes towards advertising. Valuable insights can be gained into what kinds of advertising, if any, may have a negative impact on vulnerable groups, such as young people, “at risk” gamblers and people who already have a gambling problem. In qualitative studies, problem gamblers can tell whether, and how, various kinds of advertising have made their situation worse. However, the validity and reliability of these approaches needs further consideration and that should be addressed in future studies.

5 STUDIES OF MESSAGES IN ADVERTISING

5.1 Content analysis

Advertising of gambling services conveys a message from a sender (the gambling company) to receivers (consumers). Several studies have been made of messages in gambling advertising. These studies include the following steps.

Step 1 – Viewing a sample of advertisements The sample of advertisements may be a convenience sample, which is suitable for exploratory studies. Representative samples allow quantification (Step 3).

Step 2 – Categorizing the content In most studies, the categories emerge through a preliminary thematic analysis of the content. In quantitative studies, several coders might be used who code independently; the inter-coder reliability can then be calculated and indicates the soundness of the categorization and the reliability of results.

Step 3 (optional) – Quantitative analysis If the study is quantitative, the number of advertisements belonging to various categories is counted and if the sample is representative, this will show how common advertisements belonging to the categories are. Media tracking (see Section 3.1) can be added to give further insights into the frequency of advertisements, which media channels that are used, and what might be the target audiences of the messages.

Step 4 – Analysing the content of the categories to get answers to general or specific research questions regarding their messages The analysis takes different directions depending on the objective of the study and the research questions. An early American study aimed to uncover the motivations of gamblers as revealed by the marketing of casinos (Hess & Diller, 1969). An exploration of lottery advertis-

ing focused on messages that exploit counterfactual thinking (Landman & Petty, 2000). In Australia, an investigation concerned how promotion and advertisements during sport events embed betting in the sport experience; it was found that impulsive bets were encouraged (Thomas et al., 2012a). Most studies, however, aim to explore more generally the content of and messages in advertising (Binde, 2005; Binde, 2009b; Clotfelter et al., 1999; Howland, 2001; Kim et al., 2013; Korn et al., 2005; McMullan & Miller, 2008a; McMullan & Miller, 2008b; McMullan & Miller, 2009; McMullan & Miller, 2010; Sklar & Derevensky, 2010).

Step 5 – Discussion The discussion concerns issues that emerge through the analysis. It may concern the possible intentions of the sender, how the advertisements might be perceived and what impact they might have on receivers.

A consistent finding in these studies is that gambling advertising generally is much like other advertising: it emphasizes the positive aspects of the products marketed and mentions little about the negative. In particular, gambling is portrayed as fun, exciting and often as social. Humour and celebrities are often used to catch attention. Some forms of gambling are associated with a luxurious lifestyle. Poker and sports betting are described as challenging competitions in which skill brings success. It is claimed in advertisements that lottery tickets “may” pay millions in wins and that everyone “can” win. The tone, colours, style and imagery of advertisements are symbolically associated with wealth, success and happiness.

A general impression when reading reports from these studies is that the more the discussions draw upon general theories of advertising, persuasion and marketing in consumer, advertising and cultural studies (e.g. Craig, 1992; de Mooij, 2010; Falk, 1997; Kassarian, 1977; Leiss et al., 2005; Leymore, 1975; Wernick, 1991; Williamson, 1978), the more interesting and valuable they become. The advertisements exemplify general persuasion strategies. They may emerge as a modern form of myth, elaborating on current trends, themes and conceptions in culture and society.

Naturally, the discussion of advertising messages includes the possible impact on the receivers. It is generally assumed that gambling advertising stimulates people to gamble and that it makes peoples’ attitudes towards gambling more positive. There are concerns about how gambling advertising influences young peoples’ perception of gambling and their involvement in gambling.

Discussions of the impact of messages on receivers gain in relevance if they are structured according to specific assumptions or sets of factors, such as varieties of cognitive biases, risk factors for problem gambling, or messages that can be assumed to appeal particularly to vulnerable groups (McMullan & Miller, 2009; Schottler Consulting, 2012); one study scrutinized the messages in advertisements especially with regard to their appeal to underage youth (Sklar & Derevensky, 2010).

The messages in gambling advertising also give an insight, although limited, into the intentions and marketing strategies of the sender. They suggest how gambling companies wish their products and services to be perceived and what categories of consumers they target.

The suggestions made in discussions of the impact on receivers and the intentions of senders are, if not complemented by other empirical data, conjectures that range from informed speculation to the very plausible. Regarding the receiver side, this is explored more directly in studies of how people perceive gambling advertising, which are reviewed in the next section (Section 5.2). As to the sender side, there seem to be no studies on advertising and marketing professionals in the gambling sector. Such studies could easily be carried out; there is plenty of research into advertising agencies and marketing cultures in other sectors (de Waal Malefyt, 2012). Such studies have the potential to illuminate how professionals behind gambling advertising and promotion think and work, what segments of consumers they distinguish, what tests of messages they perform in consumer panels and focus groups, and to what extent corporate social responsibility is important.

Recommendations for future research

- Basic knowledge of gambling advertising includes not just its volume and forms, but also the messages it contains. Studies of advertising messages can be of several kinds. Qualitative studies using convenience samples are appropriate for initial exploratory research. Studies including quantification add the benefit of showing how common various messages are; if combined with media tracking, the frequency of messages, the media channels used and the target audiences will become known. Such research has high priority.
- Studies of messages in gambling advertising benefit from the large body of theories and research in advertising and cultural studies concerning persuasion and messages in advertising.
- The impact of messages on receivers can only be inferred from content analysis of gambling advertising. It is therefore an advantage if such analysis is complemented with empirical research on how people actually perceive the messages, which is a high priority field of study (Section 5.2).
- Content analysis can only suggest what the intentions of the sender of advertising messages are. Studies of how advertising professionals work with gambling promotion are lacking and would have the potential to provide valuable information about how advertising messages are intended to be perceived and for what categories of consumers they are intended. Such studies have medium priority.

5.2 Self-report studies of perception of advertising

A number of studies have, by means of questionnaires, focus groups or individual interviews, asked people how they perceive gambling advertising. Some of these studies have also explored the self-rated impact of advertising (Section 4.5). This is an added value since attitudes towards gambling advertising can be analysed in relation to self-rated impact.

Some studies have concerned adults (Schottler Consulting, 2012; Thomas et al., 2012b), others have focused on young people (Derevensky et al., 2010; Korn et al., 2008; Lee et al., 2008; McMullan et al., 2012) and one study included current and past problem gamblers (Binde, 2009a). Most of these studies have also included other components, such as assessing gambling involvement and problem gambling, and linked these with perception of and attitudes towards gambling advertising.

In general, results from these studies show that young people as well as adults are familiar with gambling advertising – most have seen it. The general attitude expressed by participants in the studies is often quite critical. Advertisements are perceived as biased, exaggerated and as exhorting people to gamble using a variety of approaches and psychological tricks. This is not surprising, since the public tends to have quite negative views on advertising more generally. For example, a survey showed that more than three out of four Swedes agreed to some extent with the statement, “Nearly all advertising aims to mislead the public” (Svenska Spel, 2005).

To ask people about their perception of and attitudes towards gambling advertising has the potential to provide valuable knowledge. While content analysis of advertisements suggests what the sender wishes the receivers to perceive, asking the receivers about will give knowledge about the extent to which the messages get through and how they are actually perceived. As stated in Section 5.1, the results of content analysis can be useful for a second phase of a study exploring attitudes and perceptions; for example, for selecting a representative sample of advertisements to be shown in interviews and focus groups; this has been done in two studies (Korn et al., 2005; McMullan et al., 2012).

The analysis becomes especially valuable when it includes discussions relating to risk factors for problem gambling and vulnerable groups among the population (see Section 5.3). Risk factors include, for example, impulsiveness and misconceptions about the chances of winning – is the advertising perceived by participants in the study to connect with such factors? Vulnerable groups include young people, minority ethnic groups, and people who already have a gambling problem – do people belonging to these groups perceive that particular messages in advertising incite them to gamble? The analysis can be highly relevant also with regard to the issue of deception in advertising, since it has the potential to indicate

the extent to which advertisements are subjectively, as opposed to objectively, misleading (see Section 5.4).

As mentioned, several methods have been used to explore perceptions of and attitudes towards advertising – questionnaires, focus groups and individual in-depth interviews. Although focus groups are more time-effective than individual interviews in obtaining responses from respondents, they seem not to be ideal for this purpose (Hollander, 2004). As pointed out in the introduction, gambling advertising is a controversial topic and people may be reluctant to speak freely in a group about their attitudes and perceptions. Therefore, if research resources permit, individual interviews should be the first choice of method.

Recommendations for future research

- Studies of perception of and attitudes towards gambling advertising have high priority. Such studies have the potential to provide valuable insights into how advertising messages of various kinds are perceived and understood by different groups of people. Their usefulness increases if combined with explorations of the self-rated impact of gambling advertising, subjectively misleading advertising and especially when considering risk factors for problem gambling.

5.3 Advertising codes and risk factors for problem gambling

Codes for responsible gambling advertising usually include recommendations that build on the assumption that particular messages and forms of advertising connect with risk factors for problem gambling. For example, many such codes ban marketing which suggests that skill has an influence on the outcome of chance games. This ban builds on the knowledge that problem gambling is associated with irrational thinking and a number of cognitive fallacies (Raylu & Oei, 2002; Toneatto, 1999), among them the confusion between skill and chance, as well as overestimation of one's own skill in gambling.

In the academic literature, there are a number of discussions of how risk factors for problem gambling might connect with specific themes and messages in advertising (Binde, 2007b; McMullan & Miller, 2010; Schottler Consulting, 2012). However, none of these have systematically gone through all known risk factors – not only cognitive but also others (Blaszczynski & Nower, 2002; Griffiths & Delfabbro, 2001; Johansson et al., 2009) – and mapped their possible relationship with or disconnection from themes and messages in gambling advertising. To do so would be very valuable.

Literature reviews that make such mappings should consider that there are different types of problem gamblers (Blaszczynski & Nower, 2002) and that motivations for participation differ across various forms of gambling, which also

has implications for how gambling problems may arise (Balodis et al., 2013; Binde, 2013). Obviously, advertising needs to stimulate or create some kind of motivation for people to participate in gambling.

An example of research on motivations for gambling, of a type that could be considered in a risk factor review, is a questionnaire study of internet sport bettors in South Korea (Lee et al., 2013). Four different motivations were considered: excitement, escape, challenge (intrinsic motivations) and winning money (extrinsic motivation). Using the concepts of “obsessive” and “harmonious” passion for gambling (Rousseau et al., 2002), a significant correlation was found between on the one hand the intrinsic motivations, harmonious passion and positive consequences of gambling, and on the other hand between the extrinsic motivation of winning money, obsessive passion and negative consequences.

There are thus reasons to assume that in this form of gambling in South Korea the monetary reason for gambling is relatively strongly associated with problem gambling (the two queries in the questionnaire on this motive asked about “To win money” and “To win back money”). Theoretically, this makes sense, since overconfidence in one’s own skill in sports betting nurtures the idea that it is possible to consistently make money by gambling. Furthermore, trying to win back lost money (chasing losses) is characteristic of many problem gamblers (Lesieur, 1984). Although escape and excitement are motivations commonly found among problem gamblers, it is evident that these are important motivations also among non-problem gamblers.

Thus, the implication of these research findings for responsible gambling advertising would be that internet sports betting companies in South Korea should refrain from mentioning the monetary motive in their advertising. Instead advertising could suggest that gambling offers excitement, a moment of escape from daily life, and intellectual challenge. Since excitement and escape have potential associations with problem gambling, these themes should however be used with care.

As suggested by this example, it seems possible to gain a much more fine-grained picture of risk factors when particular forms of gambling and their motivations are considered. This could be useful for responsible gambling advertising. The goal need not be codes for advertising for each form of gambling, but codes that rest upon a more thorough analysis of risk factors. Cultural differences between countries also need to be taken into account – ideally the paragraphs in advertising codes that relate to risk factors for problem gambling should build on research results from that country.

The study in South Korea mentioned above is just one example of the kind of studies that can be included in reviews of risk factors that would be useful for the development of evidence-based advertising guidelines. Any study that gives

insight into risk factors for problem gambling is potentially useful and especially so if it considers motivations for gambling across different forms of gambling. It would also be possible to test results from such studies in follow-up research in perception of and attitudes towards gambling, as well as self-rated impact of advertising, of the kinds discussed in Sections 4.5 and 5.2. For example, representative examples of advertising messages connecting to risk factors could be used in questionnaire studies, focus groups and in-depth interviews of various types of gamblers, including problem gamblers.

Recommendations for future research

- It is a high priority to perform systematic and comprehensive reviews of how risk factors for problem gambling relate to themes and messages in gambling advertising. These reviews should preferably consider the varying motivations for gambling across different forms of gambling and for different types of gamblers, and how these motivations may turn into forces that drive excessive involvement. Such reviews would be useful for formulating evidence-inspired responsible advertising codes and regulations. The risk factors identified can be further explored in empirical studies of how people perceive and react to advertising messages and would thus allow for evidence-based codes and policies.

5.4 Deception in gambling advertising

A specific topic in some studies of the content of gambling advertising (Section 5.1) is how advertisements use rhetoric to persuade, and the psychology involved in this (Binde, 2009b; Mumpower, 1988), such as counterfactual thinking (Roesch & Olson, 1995) and the cognitive biases outlined in prospect theory (Kahneman & Tversky, 1979). Examples include emphasis on the size of jackpots rather than the probability of hitting one, giving prominence to the number of people who become lottery millionaires rather than their number as a percentage of the population, and focusing on the total amount that can be won in a lottery draw without saying how many winners will share it. Such discussions of how gambling advertising persuades are quite straightforward and pose few methodological problems. It is not difficult to find advertisements that obviously use specific rhetorical and psychological tactics to persuade. Discussions benefit from referring to the plentiful literature in advertising studies on theories of persuasion (Meyers-Levy & Malaviya, 1999).

The psychological and rhetorical devices used by gambling advertising make it biased towards the positive – obviously advertising does not intend to give a balanced picture of gambling. This raises the question whether some advertisements can be regarded as untruthful and deceptive, which has been discussed in a few studies (Binde, 2009b; Clotfelter & Cook, 1989; Clotfelter & Cook, 1991). There are also academic papers that discuss this issue more generally or on the

basis of *ad hoc* examples of advertisements (Black & Ramsay, 2003; De Geer, 2002; Gehring, 1999; Stearns & Borna, 1995).

Binde (2005; 2009b) approached the issue of deception from the perspective of concepts used in marketing science; here follows a summary of that discussion. In marketing studies, a distinction is often made (although the terminology differs between authors) between objectively and subjectively misleading advertising (Barbour II & Gardner, 1982; Gardner, 1975; Russo et al., 1981). An objectively misleading advertisement is quite easy to identify: there is an obvious discrepancy between what is claimed and the properties of the product or services marketed.

A subjectively misleading advertisement, “creates, increases or exploits a false belief about expected product performance” (Russo et al., 1981, p. 128). Since the claims of such advertisements are not objectively false, they are more difficult to identify. The crucial point is how viewers of advertisements perceive and interpret the messages. For example, a lottery advertisement that exclaims “You could become a millionaire!”, and shows several happy winners as well as images of huge stacks of banknotes, is objectively truthful. Although it is very unlikely for anyone to become a lottery millionaire, it is nevertheless true that it might happen. However, it is reasonable to assume that in some viewers the advertisement creates, increases or exploits an erroneous idea of the chances of winning. The advertisement suggestively emphasises a highly improbable event while saying nothing about the statistical chances of winning. By showing several winners it exploits the availability heuristics, through which probability estimates are made on biased information about the frequency of previous events (Tversky & Kahneman, 1973). Symbolically, the advertisement in this example, by means of its pictorial representation of huge stacks of banknotes, suggests that there are immense amounts of money to be won, plenty for all who enter the lottery (Ward & Hill, 1991).

The concept of subjectively misleading advertising implies that an advertisement that misleads one individual needs not mislead another. It also raises the issues of situational factors when advertising is viewed, and depth of reflection. Much advertising uses an indirect and subtle approach to create a positive attitude towards the product marketed, thereby avoiding the consumer thinking too much about the advertisement and its intention to make him or her buy. A brief look at an advertisement may produce a false impression in an individual, but the same individual may conclude, if critically reflecting upon the advertisement’s message, that it is exaggerated and biased and it will consequently not be subjectively misleading.

The issue of deception is raised predominantly by gambling advertisements that emphasise the chances of winning and the sums that can be won. It is not commonly raised by advertising that suggest that gambling is fun, social and challenging, or that the gambling environment is pleasant and stimulating.

Whether or not people agree with such suggestions is a matter of personal taste. This simple observation can serve as a general guideline for gambling companies that do not wish to risk sending messages that may deceive consumers.

Thus while some advertising for good reason can be suspected of being subjectively misleading, it is an empirical question as to what extent in reality it is so. Interviews and focus groups can be conducted to explore qualitatively whether and how various categories of gamblers or the public are misled by advertisements that are shown to them (Schottler Consulting, 2012). It might also be possible to make quantitative questionnaire studies with queries that concern to what extent specific advertisements are misleading. In marketing research, experimental studies have examined deception in various forms of advertising (Xie & Boush, 2011), but no such studies seem yet to have concerned gambling advertising.

Given the nature of subjective deception, empirical studies of gambling advertising will not always be able to distinguish clearly between misleading and not misleading. Assessments are likely to be on a scale of advertisements that probably mislead many people, advertisements that probably mislead few if any, and advertisements that fall somewhere in between. Such information is valuable to gambling companies and for creating policies for responsible gambling advertising. Companies could keep a safety margin from advertising that is likely to mislead many people and instead focus on the kinds of advertisements that mislead few if any; evidence-based marketing guidelines could be established on the basis of such knowledge.

Recommendations for future research

- Gambling advertising raises not only the issue of problem gambling. As with all other advertising, it should not be misleading. Empirical research about to which extent different categories of people are misled by various forms of gambling advertising would make advertising guidelines and policies more evidence-based. It has medium priority.

5.5 *The ethics of gambling advertising*

The ethics of gambling advertising – the question whether it is right or wrong to send particular types of marketing messages – has several dimensions.

In all countries there are laws which forbid marketing messages that are intentionally deceitful, this being a form of fraud. The International Chamber of Commerce has a code of advertising and market communication (ICC, 2011). The code was first issued in 1937 and has since then been regularly revised; it is a global reference point for responsible advertising. In the EU, there is the Unfair Commercial Practice Directive (European Parliament, 2005), which applies to marketing in general, and the CEN Workshop Agreement on Responsible Remote

Gambling Measures (CEN, 2011), which includes ten recommendations on responsible marketing. Advertising that does not follow these general rules and recommendations is questionable and ethically problematic.

In many countries there are particular restrictions on the content, volume and placement of gambling advertising (Coraggio, 2013; Planzer, 2011), and gambling companies individually or collectively may establish a code of conduct (for an overview, see: Schottler Consulting, 2012). In the UK, there is the Gambling Industry Code for Socially Responsible Advertising (2007). Naturally, advertising that does not follow these restrictions and guidelines is questionable. The same applies to marketing or advertisements that on good grounds can be assumed to be misleading or especially risky from a problem gambling perspective.

Some other ethical issues are, however, more complicated. People who maintain that society would be better without gambling – since they think gambling is a meaningless waste of time and money – are likely to hold the opinion that it is wrong to promote gambling by means of advertising. This was quite a common opinion half a century ago. The advertising of state-owned gambling companies is by some seen as particularly problematic from an ethical point of view, since they maintain that the state should protect its citizens rather than incite them to gamble.

Gambling advertising has aptly been described as “selling hope” and “selling dreams” (Binde, 2007b; Clotfelter & Cook, 1989). While it can be scientifically argued that hopes and dreams are part of the consumer value of gambling (Forrest et al., 2002) – that is, an immaterial commodity that consumers pay for – it can nevertheless be asked if it is ethical to market this aspect of gambling. In commercial gambling, players collectively will nearly always lose in the long run. While the player thus may hope to win, the most likely outcome is that the more he or she plays, the greater will be the loss.

Thus, an individual who enters lotteries in the hope of a big win might in the long run benefit from occupying his or her thoughts with more realistic matters. However, it could also be, as two Australian ethicists have argued, that: “Dreaming about winning appears to sustain the psychologically vital and ethically enriching quality of hope” (Black & Ramsay, 2003, p. 202). In any case, there is a difference between a lighthearted dream of becoming better off and a desperate hope of winning money that would solve severe economic problems. This is reflected in many marketing guidelines that ban advertisements which suggest that gambling is a way of solving economic problems. A related ethical question is that lotteries often have the function of a regressive tax, with low income earners spending relatively more of their money on lotteries than high income earners (Han et al., 2012). Hence the critique that lotteries exploit the poor and disadvantaged in society (Clotfelter & Cook, 1989). This ethical issue was addressed in an American study on the question of whether or not lottery advertising exploits disadvantaged and vulnerable people (Borg & Stranahan, 2005). The study found

no evidence for advertising being responsible for especially high involvement in lottery games by lower-income groups, or that such groups were more affected by advertising than high-income groups.

Still another ethical issue relating to the marketing of hope is the depiction in advertising of how life would be after hitting a lottery jackpot (Binde, 2009b). The typical image is a pleasant life free from worries and filled with joy. This image contrasts sharply with research from various countries which has found that generally the euphoria of hitting a jackpot is followed after a year or so by at most a moderate increase in life satisfaction. There are also a number of cases (although a small minority of winners) in which hitting a jackpot has ruined a person's life (Binde, 2007a).

A number of other ethical questions have been discussed in relation to gambling advertising (e.g. Binde, 2009b; Black & Ramsay, 2003; Clotfelter & Cook, 1989; Jones, 2001; Lorenz, 1990; Stearns & Borna, 1995). A general observation when reading the literature is that very few professional ethicists and philosophers have analysed and discussed gambling advertising. This observation leads to the final recommendation in this report for future research.

Recommendations for future research

- While it is easy to have an opinion on the ethics of various aspects of gambling promotion, it would be of value if professional ethicists and philosophers analysed and discussed the topic. Business ethics and moral philosophy have inquired into similar topics, using established conceptual frameworks and logical deduction from basic ethical principles. Such research on the ethics of gambling promotion is of medium priority.

6 CONCLUDING DISCUSSION

A summary of this report is found at its beginning, under the title "Executive summary". The summary lists the recommendations for future research according to the priority levels high – medium – low. What follows here is a recommendation for an initial multi-method research program in countries where there are few previous studies on gambling advertising, and concluding discussions on responsible advertising in relation to harm prevention more generally and the possible costs and benefits of responsible marketing for gambling companies.

If there is little previous research on gambling advertising in a country, the following initial multi-method research program is recommended. It combines the five "priority" research recommendations of this report. The program should include or be preceded by a survey of the volume and types of gambling advertising, preferably including data on actual exposure for different categories of

consumers and with repeated yearly measurements to indicate trends. The British Ofcom report (2013) is a good example, although limited to television advertising. A content analysis should then be performed on representative samples of different kinds of gambling advertising, revealing messages and themes. Special attention should be paid to messages that connect with known risk factors for problem gambling and motivations for participating in different forms of gambling. A sample of advertising with different messages should then be used in quantitative questionnaire and qualitative interview studies, revealing how people of different categories (such as youth/adults and problem/non-problem gamblers) perceive the advertisements, what their attitudes to them are and how they believe they are influenced by them; this part of the program should include also more general queries regarding self-rated advertising impact in relation to other environmental factors that stimulate participation in gambling. Of the studies reviewed in this report, none combine all these elements, but three studies include several of them and may serve as examples of how research questions and methods may be integrated (Korn et al., 2008; McMullan & Miller, 2008b; Schottler Consulting, 2012).

The impact of advertising on the prevalence of problem gambling is in general likely to be neither negligible nor considerable, but rather relatively small. Advertising is one of many environmental factors that contribute to the prevalence of problem gambling. The total environmental impact may be substantial. Only in particular conditions, such as extensive advertising for especially risky forms of gambling that are offered on an immature market with few if any player protection features (such as stake limits and possibilities for self-exclusion), may one assume that advertising in itself substantially contributes to problem gambling.

It would therefore be unrealistic to expect that general advertising restrictions would in themselves have a great preventive effect on problem gambling. Such restrictions should be coordinated with other preventive measures and together they are likely to have a significant positive effect. As Robert Williams writes:

“Multiple prongs within a comprehensive and coordinated prevention strategy are often synergistic, with overlapping initiatives reinforcing the message and power of individual components ... *The effect is analogous to a shotgun blast, where the effect of any individual pellet is negligible, but when combined with other pellets aimed at the same target, can collectively have a major impact*” (Williams et al., 2012a, p. 89, italics in original).

It would be equally unrealistic to believe that “play responsibly” and warning messages embedded in gambling advertising would greatly reduce the negative effects that advertising may have (Floyd et al., 2006; Munoz et al., 2010; Steenbergh et al., 2004). Such messages can be seen as just one “pellet” in the preventive shotgun blast. With regard to harm prevention targeted at young

people, advertising may be approached in accordance with “inoculation theory”; rather than trying to persuade young people that gambling is risky, they could be taught how to question and resist the messages in gambling advertising (Lemarié & Chebat, 2013).

Gambling companies may ask what might be the cost of implementing responsible marketing and advertising. Would it require substantial resources and would it cut into revenues by making advertising less efficient? Two points are important in answering that question.

First, any company that has the ambition to stay in the market should have a long-term perspective of providing gambling on a level that is sustainable for its customers (Adami et al., 2013). A deplorable fact is that in some forms of gambling, a large part of the revenue is generated by problem gamblers who play excessively (Orford et al., 2013). To implement responsible gambling measures, including responsible advertising, may thus in the short-term perspective decrease a gambling company’s revenue but in the long term make its business more sustainable. The better evidence there is about what aspects of gambling and advertising are risky and harmful, the more certain a company can be that responsibility will pay off in the long run.

Second, marketing and advertising are very important for a company’s image. It is similar to a shop window. To sell products is just one of advertising’s functions; another function is to present a picture of the company. To give consumers a favourable impression of a company as responsible, trustworthy and professional may thus have a value that counterbalances a possible loss of sales when some advertising messages are not sent for responsibility reasons (Cai et al., 2012).

The conclusion of this report is that although research on the impact of gambling advertising is methodologically challenging, it is possible to conduct studies that produce knowledge valuable for policy making, regulation and the responsible marketing of gambling. While current knowledge at best allows for evidence-inspired policy and responsible marketing, there are good prospects of gaining more knowledge through future studies that would allow policy and responsible marketing to become more evidence-based. It would then be possible to formulate a general best-practice for gambling advertising.

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APPENDIX: EMPIRICAL STUDIES EXAMINING GAMBLING ADVERTISING

Part A of this appendix lists empirical studies that have gambling advertising as a principal or prominent topic. There are 36 publications in the list that report on 33 methodologically distinct studies; some studies are reported in multiple publications and some publications report on several studies included in a comprehensive research program.

Part B of the appendix lists empirical studies that do not focus on gambling advertising but include observations on such advertising. Nineteen such studies are listed, reported in 22 publications.

Publications about gambling advertising that do not report on empirical studies, for example policy discussions and reviews, are not included in the lists. For information about the method of locating literature, see Section 1.3, “Methodology”.

Part A: Studies focusing on gambling advertising

1. Binde, P. 2005. *Att sälja en dröm: Om spelreklam och dess påverkan*. Stockholm: Statens folkhälsoinstitut [Selling Dreams: On the Effects of Gambling Advertising].

Abstract (translated from Swedish). *Gambling advertising has become a controversial topic in Sweden, as is also the case in several other European countries as well as in the United States. It is debated to what extent advertising contributes to problem gambling, and if much of gambling advertising should be regarded as deceptive and unethical. This report in Swedish presents facts on gambling advertising in Sweden and reviews the academic literature on the subject. It discusses the main issues that have been raised with respect to gambling advertising in the public debate and offers suggestions for future research.*

Advertising issues investigated: Messages in advertising; deception in advertising.

Type of study and method: Content analysis of a convenience sample (ca. 250 items) of advertising in print and on billboards.

Location: Sweden.

Comment: In Swedish. This report (160 pages) includes a literature review and discussions on many topics relating to gambling advertising, such as its impact on problem gambling.

Related publication: Binde (2009a) is an abridged version in English of the content analysis and the discussions of deception in advertising.

2. Binde, P. 2007. *Spelreklam och spelberoende: En intervjustudie*. Östersund: Statens folkhälsoinstitut [Gambling advertising and problem gambling: An interview study].

Abstract (translated from Swedish). *The premise for the study presented in this report is that problem gamblers can to some extent tell what influence gambling advertising has had on their problems. No other such investigation had previously been conducted in Sweden or elsewhere. The study was based on relatively long interviews with twenty-five individuals with present or past severe gambling problems. The study also explores how the individuals interviewed more generally react when confronted with gambling advertising and what thoughts they have on the promotion of gambling in Sweden. The opinions and experiences presented are those of persons who have years of experience of gambling problems – their own and those of others – and can therefore be valuable to those, in the gambling industry or elsewhere, who have an interest in responsible provision of gambling. Advertising regulation is discussed in the light of the findings of the study.*

Advertising issues investigated: Perception of and self-perceived impact of advertising among problem gamblers.

Type of study and method: Qualitative interview study (N=25).

Location: Sweden.

Comment: This is a report in Swedish (133 pages).

Related publication: Binde (2009b) is a much abridged version in English.

3. Binde, P. 2009a. "You could become a millionaire": Truth, deception and imagination in gambling advertising. In *Global Gambling: Cultural Perspectives on Gambling Organizations* (ed.) S.F. Kingma. New York & London: Routledge.

Abstract. *This book chapter examines psychological and rhetorical devices commonly used in gambling advertising, and discusses to what extent these can be regarded as misleading. I conclude that it is difficult to distinguish sharply between advertising of gambling products that misleads consumers and that which does not. Responsible gambling provision should mean that gambling companies do not publish advertising that is even remotely misleading, and that they are responsive to public opinion regarding the truthfulness, content and tone of their advertising. Gambling, being an activity sustained by imagery and multifaceted cultural meanings, provides ample material for attractive themes in advertising. There is thus no need for gambling companies to market their products using dubious half-truths concerning the chances of winning. Less focus on money and more emphasis on the culturally meaningful*

elements of gambling would make deception in gambling advertising less of a controversial subject.

Advertising issues investigated: Messages in advertising; deception in advertising.

Type of study and method: Content analysis of a convenience sample (ca. 250 items) of advertising in print and on billboards.

Location: Sweden.

Related publication: This is an abridged version in English of parts of Binde (2005).

4. Binde, P. 2009b. Exploring the impact of gambling advertising: An interview study of problem gamblers. *International Journal of Mental Health and Addiction* 7(4), 541-554.

Abstract. *This study qualitatively explored the impact of gambling advertising on problem gambling by interviewing twenty-five people with current or past gambling problems. Interviews were relatively long and involved the participants' viewing numerous examples of gambling advertising. A quarter of the participants reported that gambling advertising had no impact on their problems, slightly over half of them reported that advertising had a marginal impact, and one fifth reported a tangible impact. However, none considered advertising to be a main cause of their gambling problems. The negative self-perceived impact was primarily that advertising triggered impulses to gamble. Advertising thus increased already high involvement in gambling and/or made it harder to stick to a decision to gamble less or not at all.*

Advertising issues investigated: Perception of and self-perceived impact of advertising among problem gamblers.

Type of study and method: Qualitative interview study (N=25).

Location: Sweden.

Related publication: This is an abridged version in English of Binde (2007).

5. Borg, M.O. & H.A. Stranahan. 2005. Does lottery advertising exploit disadvantaged and vulnerable markets? *Business Ethics Quarterly* 15(1), 23-35.

Abstract. *Is it unethical to advertise lotteries? Many citizens think that states should not be actively promoting and encouraging the public to spend hard-earned dollars on a bet that they are virtually guaranteed to lose. Perhaps more importantly, business ethicists are concerned that lottery advertising may be targeting the most vulnerable markets: households with the lowest income and education levels. If this were true, then it would increase the already disproportionately large burden of lottery taxes on the poor. Fortunately, our research finds no evidence to support the contention that advertising is responsible for high rates of lottery participation and*

expenditures by lower income groups or that low-income groups are more affected by advertising than high-income groups. On the contrary, awareness of lottery advertising seems to be associated with a higher probability to play Lotto only for the middle income group. This means that lottery advertising may actually reduce the regressivity of lottery taxes.

Advertising issues investigated: Recall of lottery advertising across various groups of people.

Type of study and method: Quantitative survey using telephone interviews (N=1,311).

Location: Florida, USA.

6. Derevensky, J., A. Sklar, R. Gupta & C. Messerlian. 2010. An empirical study examining the impact of gambling advertisements on adolescent gambling attitudes and behaviors. *International Journal of Mental Health and Addiction* 8(1), 21-34.

Abstract. *Based upon a previous qualitative study a questionnaire ascertaining adolescents' awareness of gambling advertisements and their impact upon their behavior was developed and administered to 1,147 youth between the ages of 12 and 19. The findings suggest that almost all youth report being exposed to advertising with many individuals indicating being bombarded with messages, especially through pop-up ads viewed on the Internet. Sixty-one percent of youth reported receiving spam gambling advertisements by e-mail and 96% had seen TV advertisements for gambling. The underlying perceived message is that winning is easy, the chance of winning is high and that gambling is an easy way to become wealthy. While most youth are dismissive of the messages and are aware of the risks associated with gambling, a large percentage of youth report that these messages prompt them to gamble. Rather than inciting non-gamblers to begin gambling, advertisements appear to serve the function of maintaining established gambling habits and were particularly problematic to youth with gambling problems. Gender and developmental trends were noted.*

Advertising issues investigated: Perceptions of advertising, recall of having seen advertising, cross-sectional observations on recall and vulnerability, retrospective self-perceived impact of advertising across different categories of gamblers.

Type of study and method: Youth study using a questionnaire (N=1,147).

Location: Ontario, Canada.

Comment: "Effects of Gambling Advertising Questionnaire" (EGAQ) is used.

7. Fried, B.G., M. Teichman & G. Rahav. 2010. Adolescent gambling: Temperament, sense of coherence and exposure to advertising. *Addiction Research & Theory* 18(5), 586-598.

Abstract. *This study examines the relationships between gambling behaviour and temperament, sense of coherence (SOC) and exposure to advertising among adolescents, and the interactions between these three independent variables in relation to problem gambling (PG). One thousand and sixty-nine Israeli adolescents (males = 539, females = 530), aged 16–19, were sampled from 19 high schools. The following instruments were used: a gambling behaviour scale; a PG scale; an advertising exposure scale; Buss and Plomin's emotionality, activity and sociability (EAS) questionnaire measuring temperament; and a short version of Antonovsky's SOC scale. The findings indicated a relationship between recall of exposure to advertising and gambling behaviour and PG among adolescents. No correlations were found between SOC and gambling behaviour and PG, and no correlation was found between temperament and gambling behaviour. However, the effect of temperament on PG was significant for girls only. In addition, no interaction was found between the three independent variables relating to PG. The findings of this study underline the social role of advertisements in the process of developing gambling behaviour among adolescents and its effect on problem gambling.*

Advertising issues investigated: Exposure to advertising and problem gambling (cross-sectional correlation found).

Type of study and method: Youth study using a questionnaire (N=1,069).

Location: Israel.

8. Heiens, R. 1993. *The influence of newspaper, radio and television publicity on sales of the state of Colorado's lottery product, Lotto*. Tallahassee: Florida State University.

Abstract. *The present study is an examination of the variables influencing lottery sales in the state of Colorado. Specifically, the present study focuses on the unique influence of newspaper, radio, and television publicity on Lotto sales in the state of Colorado. Also, radio advertising, television advertising, distribution, and jackpot size are included as additional independent variables in the present study. In order to test the hypotheses in the present study, several time series regression equations are specified and calculated. Recognizing the potential cumulative or carryover effect for each of the independent variables examined, each regression equation is calculated via the Koyck specification, which describes a relationship in which the influence of the independent variables on sales decays geometrically with time. Finally, the relationships between each of the independent variables and Lotto sales are*

graphically depicted, and the managerial and behavioral science implications of the results are examined.

Advertising issues investigated: Advertising efficiency.

Type of study and method: Econometric study.

Location: Colorado, USA.

Comment: The data and conclusions regarding advertising efficiency are similar to what is presented in Heiens (1999).

9. Heiens, R.A. 1999. The influence of product publicity on product sales in a noncompetitive environment. *Academy of Marketing Studies Journal* 3(1), 1-10.

Abstract. *In an effort to more fully integrate publicity into the marketing and promotion mix, the present study examines the influence of product-related newspaper, television, and radio publicity on Lotto sales in the state of Colorado. The results of the present study indicate that in addition to Jackpot size, television publicity has a statistically significant positive impact on Lotto sales, whereas newspaper and radio publicity do not. Consequently, in their efforts to generate favorable publicity, lottery managers should emphasize the dissemination of jackpot size information via the television medium. Moreover, considering the observed 90% duration interval of .8651 weeks for the influence of marketing variables on sales, a continuous media placement schedule is suggested. The neat and tidy divisions separating marketing and public relations are breaking down. It may be that the best way to solve a marketing problem would be through public relations activities (Kotler & Mindak 1978).*

Advertising issues investigated: Advertising efficiency.

Type of study and method: Econometric study.

Location: Colorado, USA.

Comment: The data and conclusions regarding advertising efficiency are similar to what is presented in Heiens (1993).

10. Hess, H.F. & J.V. Diller. 1969. Motivation for gambling as revealed in the marketing methods of the legitimate gambling industry. *Psychological Reports* 25, 19-27.

Abstract. *An analysis of the marketing appeals made by the legal Nevada gambling industry yields three main categories of motive toward which appeals are made: (1) rational-economic motives, (2) recreational motives, and (3) prestige-seeking*

motives. It was noted that the industry seems loath to exploit motives which may be related to psychopathology, such as the desire to lose in order to alleviate guilt.

Advertising issues investigated: Messages in advertising.

Type of study and method: Qualitative content analysis of marketing and advertising in casinos, data from field observations.

Location: Nevada, USA.

11. Hing, N., P. Vitartas & M. Lamont. 2013. Gambling sponsorship of sport: An exploratory study of links with gambling attitudes and intentions. *International Gambling Studies* 13(3), 281-301.

Abstract. *Gambling sponsorship of sport is increasingly prolific, but also contentious. Underpinned by the Theory of Reasoned Action (TRA), this study explores relationships between gambling sponsorship, and attitudes and intentions relating to gambling, in the context of a major Australian football competition heavily sponsored by gambling companies. Data were gathered via two online surveys (N = 212). Analysis confirmed that attitudes and social norms predicted gambling intention. Further, attitudes to gambling and gambling intention were positively associated with response to gambling sponsorship. Viewing televised football matches, perceptions about sponsor–event fit and attitude to gambling sponsorship were associated with respondents’ interest in, favourable attitude towards and propensity to use the sponsors’ products. Findings suggest that exposure to gambling promotions during televised sport may encourage gambling intentions, and that gamblers scoring higher on the PGSI are more likely to be exposed to these promotions, view them favourably, be interested in the sponsor’s products and be willing to use them. As such, these promotions may trigger gambling amongst problem and recovering problem gamblers. While further research is needed to empirically support any case for regulatory change, this exploratory study provides a foundation upon which future research into gambling promotion during sport can build.*

Advertising issues investigated: Cross-sectional observations of relations between advertising recall, attitudes towards advertising, problem gambling and subjects’ self-rated propensity to use the gambling products promoted.

Type of study and method: Questionnaire study.

Location: Australia.

12. Howland, P. 2001. Toward an ethnography of lotto. *International Gambling Studies* 1(1), 8-25.

Abstract. *Lotto - a state-sanctioned lottery in New Zealand - is a pervasive socio-cultural phenomenon. Every week more than one-third of the adult population purchase lottery tickets and in doing so replicate the promotion of Lotto as a form of benign gambling which is fun and entertaining to play. Within a model of constructive gambling Lotto may be cast as a site of normative or ideal gambling within the New Zealand context. Moreover, Lotto promotions and participation reaffirms the nationalistic ideals of the New Zealand 'good life', while simultaneously articulating some of the key narratives of transnational economics.*

Advertising issues investigated: Messages in advertising.

Type of study and method: Qualitative content analysis of convenience sample of lottery advertising.

Location: New Zealand.

Comment: The study includes field studies and interviews with lottery buyers; the approach is ethnographical.

13. JLARC. 2012. *Lottery marketing & incentive pay: Jackpot and economy, not advertising or beneficiary change, appear to impact ticket sales. Preliminary report.* Olympia, WA: State of Washington Joint Legislative Audit & Review Committee (JLARC).

Excerpt from report summary. "... Legislature Mandated Review of Lottery Marketing and Incentive Pay. In the 2011-13 Biennial Operating Budget (2011 2ESHB 1087), the Legislature directed the Joint Legislative Audit and Review Committee (JLARC) to analyze the Lottery's marketing activities, as well as the impact of the recent change in the primary beneficiary of lottery revenue. Additionally, the Legislature directed JLARC to describe incentive payment programs available to Lottery's employees. The remainder of this report addresses this directive by answering the following three questions: 1. To What Extent Has Advertising Impacted Lottery Ticket Sales? JLARC found that jackpot amounts and economic conditions are the strongest predictors of Lottery ticket sales. In contrast, Lottery's advertising expenditures in the 2009-11 Biennium did not appear to increase weekly ticket sales. To determine this, JLARC used statistical techniques to evaluate the impact advertising expenditures had on ticket sales during the 2009-11 Biennium. ..."

Advertising issues investigated: Advertising efficiency.

Type of study and method: Econometric study.

Location: State of Washington, USA.

14. Kim, Y., W.-N. Lee & J.-H. Jung. 2013. Changing the stakes: A content analysis of Internet gambling advertising in TV poker programs between 2006 and 2010. *Journal of Business Research* 66(9), 1644-1650.

Abstract. *Given societal and public health concerns about Internet gambling, this study examines how prevalent Internet gambling advertising is during TV poker programs and how Internet gambling companies employed alternative strategies to promote Internet gambling on TV in response to government regulations in 2006 and 2010. Despite legislation to prohibit Internet gambling in 2006, the results reveal that the extent of Internet gambling advertising during TV poker programs slightly increased in 2010 versus 2006. In terms of ad message appeals and strategy, the findings of this study suggest that there were some similarities and differences between 2006 and 2010 in the use of dominant appeals, as well as the proportion of Internet gambling ads featuring references to an educational purpose, a legal disclaimer, and a big payout.*

Advertising issues investigated: Themes in gambling advertising.

Type of study and method: Content analysis of a systematic sample of television advertising.

Location: USA.

15. Korn, D., T. Hurson & J. Reynolds. 2005. *Commercial gambling advertising: Possible impact on youth knowledge, attitudes, beliefs and behavioural intentions (Final report)*. Guelph: Ontario Problem Gambling Research Centre.

Excerpt from executive summary. “... This report presents the results of the first study in Ontario to examine the possible impact of commercial gambling advertising on youth. The primary purpose of the study was to explore the ways that commercial gambling advertising might affect the attitudes, knowledge, beliefs and behavioural intentions of youth. Although this research is an exploratory study, the findings have implications for future research, preventive programming, and healthy public policy. This exploratory study was carried out in two phases. First, a content analysis was performed on over 450 commercial gambling advertisements (including print, radio, television and outdoor signage). These advertisements were compiled, deconstructed, analyzed and categorized according to common themes. These themes guided the selection of 29 ads used in Phase Two: focus group discussions held with youth from across the Greater Toronto Area. In total, 63 participants, aged 13-17, attended eight focus groups (four groups aged 13-14, and four groups aged 15-17). Each group was approximately 90 minutes in duration and was held in a formal focus group research facility. ...”

Advertising issues investigated: The content of and messages in advertising; familiarity with, perceptions of and attitudes towards advertising among youth.

Type of study and method: Two methodological distinct studies are reported: a) content analysis of a large sample (479 items) of gambling advertising; b) focus groups with youth discussing selected advertisements from the content analysis (N=63).

Location: Ontario, Canada.

16. Korn, D., J. Reynolds & T. Hurson. 2008. *Commercial gambling advertising: Understanding the youth connection (Final report)*. Guelph: Ontario Problem Gambling Research Centre.

Excerpt from executive summary. "... This study represents the second phase of a strategic initiative to better understand the influence of exposure to commercial gambling advertising on young people, ages 13-17. Our first phase study, funded by the Ontario Problem Gambling Research Centre, was exploratory in design and warranted further study in this important area. The purpose of this research was to: 1) document the exposure of youth to all commercial gambling advertising through identifying their placement and frequency over a period of time, 2) extend our understanding of the potential impact of commercial gambling advertising on youth through the use of in-depth interviews, and 3) utilize for the first time a quantitative survey to determine the influence of commercial gambling advertising on the knowledge, attitudes, and behaviours of youth.

...

Results. The findings of this study clearly illustrate that commercial gambling advertising does influence youths' gambling attitudes knowledge, beliefs, and behavioural intentions. Key findings from this study include:

- Young people have been "overexposed" to commercial gambling advertisements during several youth popular television shows;
- Youth were able to remember specific gambling advertisements, slogans and jingles, as well as recall particular television gambling plot lines;
- Many youth and key informants felt that commercial gambling advertising does have an impact on youths' gambling attitudes, beliefs, knowledge, and behavioural intentions;
- Youth problem gamblers reported being more likely to purchase lottery, Pro-Line or instant-scratch tickets if they had seen an advertisement for it;
- Youth problem gamblers appeared to be significantly more likely to be influenced by the name of the game when playing lottery products;
- Youth problem gamblers were twice to as likely to feel that they were slow learners and were more likely to report being diagnosed with a learning disability Results are intended to inform health professionals and public policy makers on the possible

effects of adult-focused commercial gambling advertising youth and highlight the need for further research in this area. ...”

Advertising issues investigated: Volume of advertising for various gambling services, youth’s attitudes towards and perceptions of advertising, cross-sectional observation of association between advertising recall and problem gambling status, self-rated propensity to buy lottery tickets after having seen an advertisement.

Type of study and method: The study uses a three-stage approach with a mixed method design, including: a) media tracking of advertising, b), in-depth interviews with youth (N=20) and c) a questionnaire administered to youth in schools (N=1,033).

Location: Toronto area, Canada.

17. Landman, J. & R. Petty. 2000. “It could have been you”: How states exploit counterfactual thought to market lotteries. *Psychology and Marketing* 17(4), 299-321.

Abstract. *Why do so many people spend so much of their hard-earned money playing the lottery? Why do so many people keep at it week after losing week? We explore the possible roles of certain internal and external factors in this behavior. The internal factor is the process of counterfactual thinking (CFT)—that is, imagining what might have been or might still be, or comparing reality (the facts; what is) with what might have been or might still be. The external factor we examine is lottery advertising, which we argue often exploits the normal human capacity for counterfactual thinking. More specifically, we discuss how an inherent feature of virtually all lottery purchases—negative outcome—tends to induce CFT, and how certain cognitive features of counterfactual thinking—such as its salience and degree of absurdity—are manipulated by lottery advertising. We also discuss how certain affective features of lottery-related counterfactual thinking—high personal involvement, direction of CFT, affective assimilation and contrast effects of CFT, and perceived proximity of actual outcome to counterfactual alternatives—are exploited by lottery advertising. We conclude with implications for research and public policy.*

Advertising issues investigated: The content of gambling advertising, with specific attention to messages relating to counterfactual thinking; deception in advertising.

Type of study and method: Content analysis (apparently using a convenience sample of advertising).

Location: USA.

18. Lee, H.-S., J. Lee Lemanski & J.W. Jun. 2008. Role of gambling media exposure in influencing trajectories among college students *Journal of Gambling Studies* 24(1), 25-37.

Abstract. *In the study, a model of the relationship between mass media depictions of gambling and subsequent gambling attitudes and behavioral intentions of college students was developed. A survey was conducted with 229 undergraduate students (79.5% female, mean age = 20.5, SD = 2.04) enrolled in three different communication courses at a large southeastern university. Through structural equation analysis, the six hypotheses of this study were analyzed using the method of maximum likelihood with AMOS 6. The model was consistent with the hypotheses that media exposure impacts gambling attitudes and behavioral intentions both positively and negatively, depending on the valence of the gambling depiction. Theoretical and practical implications of mass media exposure and gambling behaviors are discussed, and future research directions are outlined.*

Advertising issues investigated: Association (cross-sectional) is found between recall of gambling advertising, positive attitudes towards gambling and gambling intentions.

Type of study and method: Questionnaire administered to students (N=229).

Location: USA.

19. Maher, A., N. Wilson, L. Signal & G. Thomson. 2006. Patterns of sports sponsorship by gambling, alcohol and food companies: An Internet survey. *BMC Public Health* 6(95).

Abstract. *Background: Sports sponsorship is a significant marketing tool. As such, it can promote products that pose risks to health (eg, high fat and high sugar foods) or it can promote health-supporting products (eg, sporting equipment and services). However, there is a lack of data on the proportion of sponsorship associated with “unhealthy” and “healthy” products and no methodology for systematically assessing it. This research aimed to explore this proportion with an Internet survey of sports sponsorship in the New Zealand setting. Methods: A search methodology was developed to identify Internet-based evidence of sports sponsorship at the national level and at the regional and club level in one specific region (Wellington). The top eight sports for 5-17-year-olds were selected and products and services of sponsors were classified in terms of potential public health impact (using a conservative approach). Results: Sponsorship of these popular sports was common at the national, regional and club levels (640 sponsors listed on 107 websites overall). Sports sponsorship associated with sponsors’ products classified as “unhealthy” (eg, food high in fat and sugar, gambling and alcohol) were over twice as common as sponsorship associated with sponsors’ products classified as “healthy” (32.7% (95%*

CI = 29.1, 36.5) versus 15.5% (95% CI = 12.8, 18.6) respectively). “Gambling” was the most common specific type of sponsorship (18.8%) followed by alcohol (11.3%). There were significantly more “alcohol” sponsors for rugby, compared to all the other sports collectively (rate ratio (RR) = 2.47; 95% CI = 1.60, 3.79), and for top male sports compared to female (RR = 1.83; 95% CI = 1.05, 3.18). Also there was significantly more “unhealthy food” sponsorship for touch rugby and for “junior” teams/clubs compared to other sports collectively (RR = 6.54; 95% CI = 2.07, 20.69; and RR = 14.72, 95% CI = 6.22, 34.8; respectively). A validation study gave an inter-rater reliability for number of sponsors of 95% (n = 87 sponsors), and an inter-rater reliability of classification and categorisation of 100%. Conclusion: This study found that the sponsorship of popular sports for young people is dominated by “unhealthy” sponsorship (ie, predominantly gambling, alcohol and unhealthy food) relative to “healthy” sponsorship. Governments may need to consider regulations that limit unhealthy sponsorship and/or adopt alternative funding mechanisms for supporting popular sports.

Advertising issues investigated: Volume of sport sponsorship messages for “unhealthy” products, including gambling.

Type of study and method: A systematic search of the internet.

Location: New Zealand.

20. McMullan, J. & D. Miller. 2008a. *The Commercial Advertising of Gambling in Nova Scotia (Final Report)*. Halifax, Nova Scotia: Saint Mary’s University.

Excerpt from executive summary. “... This report is the first of four studies that make up *The Commercial Advertising and Adolescent Gambling Research Project* that is examining the different ways that commercial gambling advertising affects the knowledge, beliefs, and practices of youth. This report provides a content analysis of commercial advertising that occurred in the province of Nova Scotia over a two and a half year period from January 2005 to July 2007. A total of 1,351 print, radio, television and point of sale ads were collected from the Atlantic Lottery Corporation, Casino Nova Scotia and cable television stations. These ads were analyzed for content and where available for frequency and exposure. ...”

Advertising issues investigated: Volume and cost of gambling advertising; content analysis of messages, design and symbols in advertising; discussion of risk factors for problem gambling and messages in advertising.

Type of study and method: Media tracking; content analysis of a systematic sample of advertisements (1,351 items).

Location: Nova Scotia, Canada.

Comment: Journal articles presenting parts of this study are the following: McMullan & Miller (2008b; 2009; 2010).

21. McMullan, J. & D. Miller. 2008b. All in! The commercial advertising of offshore gambling on television. *Journal of Gambling Issues* 22, 230-251.

Abstract. *There is a paucity of research on the advertising of gambling, especially the intensely marketed Internet poker and blackjack games. This study examines ads that aired on cable television in one Canadian jurisdiction. Using quantitative and qualitative methods, we analyze 64 distinct commercials that aired 904 times over a 6-month period. Our findings show that these ads target audiences along age, gender, and ethnic lines and mobilize celebrities, excitement, and humour as persuasive techniques to promote the view that on-line gambling is an entertainment experience in which skill prevails over luck, winning dominates losing, fantasy overshadows reality, leisure trumps work, and the potential for personal change eclipses the routines of everyday life. We conclude that the e-gambling advertising assemblage, with its high-volume exposure, attractiveness, pervasiveness, and repetitiveness of messaging is now an embedded feature of everyday life that is especially connected to popular sport culture and to the fun ethic of contemporary consumer culture.*

Advertising issues investigated: See McMullan & Miller (2008a).

Type of study and method: See McMullan & Miller (2008a).

Location: See McMullan & Miller (2008a).

Comment: This article includes material from the report: McMullan & Miller (2008a).

22. McMullan, J. & D. Miller. 2009. Wins, winning and winners: The commercial advertising of lottery gambling *Journal of Gambling Studies* 25(3), 273-295.

Abstract. *This study analyzed a sample of 920 lottery ads that were placed or played in Atlantic Canada from January 2005 to December 2006. A content analysis, involving quantitative and qualitative techniques, was conducted to examine the design features, exposure profiles and focal messages of these ads and to explore the connections between lottery advertising and consumer culture. We found that there was an “ethos of winning” in these commercials that provided the embedded words, signs, myths, and symbols surrounding lottery gambling and conveyed a powerful imagery of plentitude and certitude in a world of potential loss where there was little reference to the actual odds of winning. The tangible and emotional qualities in the ads were especially inviting to young people creating a positive orientation to wins, winning and winners, and lottery products that, in turn, reinforced this form of gambling as part of youthful consumption practices. We concluded that enticing people with the prospects of huge jackpots, attractive consumer goods and easy wins,*

showcasing top prize winners, and providing dubious depictions that winning is life-changing was narrow and misleading and exploited some of the factors associated with at-risk gambling.

Advertising issues investigated: See McMullan & Miller (2008a).

Type of study and method: See McMullan & Miller (2008a).

Location: See McMullan & Miller (2008a).

Comment: This article includes material from the report: McMullan & Miller (2008a).

23. McMullan, J.L. & D. Miller. 2010. Advertising the “New fun-tier”: Selling casinos to consumers. *International Journal of Mental Health and Addiction* 8(1), 35-50.

Abstract. *There is an absence of research on the commercial advertising of gambling as it relates to casinos. This study examines print, radio, television and point of sale casino ads that aired in Canada. Using quantitative and qualitative methods we analyze a convenience sample of 367 ads that aired or were printed in 2005 and 2006. Our findings indicate that these ads target audiences along age, gender and ethnic lines and mobilize excitement and sex as persuasive techniques to promote the view that casino gambling is the “new fun-tier” of the entertainment industry where visiting a casino is as normal as going to a movie and where winning, glitz and gracious living prevail over losing, work and everyday life. We conclude that casino advertising evinces troubling similarities with some of the factors that research has shown contributes to at-risk gambling: the association between spatial segregation, stepping out of real life and the development of dissociated states; between excitement, sensation seeking and the potential to develop vertigo and disorientation and between the entertainment of the games, the devaluation of money and the propensity to chase losses.*

Advertising issues investigated: See McMullan & Miller (2008a).

Type of study and method: See McMullan & Miller (2008a).

Location: See McMullan & Miller (2008a).

Comment: This article includes material from the report: McMullan & Miller (2008a).

24. McMullan, J.L., D.E. Miller & D.C. Perrier. 2012. “I’ve seen them so much they are just there”: Exploring young people’s perceptions of gambling in advertising. *International Journal of Mental Health and Addiction* 10(6), 829-848.

Abstract. *This study contributes to the emerging literature on commercial advertising and youth gambling by exploring adolescent's exposure to and perceptions of gambling advertisements. We analyzed a sample of 50 youth in six focus groups between the ages of 13 and 18 to examine the process by which youth perceived, received or rejected the form and content of advertising and to determine what these ads meant to their social identities. We found that youth had considerable exposure to commercial gambling advertising, decoded for the most part, the gambling messages offered by advertisers and identified themselves with the gambling experiences as they aged and well before they reached the age of majority. We also found that about one-third of gambling advertisements were not received by youth as intended and were ignored, not understood or rejected. The youngest age cohort (13–14) were the most likely to evince a social distance from the tone, style or look that many older youth found attractive in the ads and the least likely to identify themselves with the cultural capital of gambling such as social friendship, economic gain and fun and entertainment. We concluded that socially responsible advertising for youth protection should be heterogeneous and not assume that all youth are alike or will be influenced by single messages.*

Advertising issues investigated: Perceptions of and attitudes towards gambling advertising content of various kinds among youth.

Type of study and method: Focus groups (N=50 participants).

Location: Nova Scotia, Canada.

25. Miller, R. & R. Mizerski. 1998. *Investigating the relationship between ad recall, affect toward the producer and the purchase of three number lotto tickets (work in progress)*. School of Marketing, Griffith University, Brisbane, Australia.

Abstract. *This working paper reports on early analyses of a large (m=7,400) tracking study concerning three number lottery game play. It investigates the association between memory of lottery advertising, affect towards the lottery and purchase. There were no statistically significant relationships with affect. However, both tendency to play the three number lotto and number of tickets purchased did have a consistent and significant relationship to the recall of lottery advertising.*

Advertising issues investigated: Recall of having seen lottery advertising in relation to purchase of lottery tickets (cross-sectional observation).

Type of study and method: Interview study (N=7,400).

Location: Florida, USA.

26. Munoz, Y.R. 2009. *An investigation into the sales-advertising relationship: The state lottery case*. Austin: University of Texas.

Abstract. *The present investigation aims at modeling the sales response to advertising and, in the process, sheds some light on the sales-advertising relationship subject, which has been at the center of a decades-long controversy due to its inherent complexities. We studied three Colorado Lottery games, Lotto, Powerball, and Scratch, over a four-year period of operation. To synthesize a model that appropriately described the sales-advertising behavior of each one of these games, we addressed three fundamental questions driving the modeling process itself: 1. Is there a relationship between sales and advertising? 2. If such relationship exists, is there an advertising “carryover effect” on sales? And, 3. What is the shape of the sales-advertising relationship? We put forward two general-response models (Current Effects and Koyck’s) in combination with eight functional forms (one linear and seven nonlinear forms) to address the above questions and test the respective hypotheses. Employing the available time series data corresponding to game sales, game advertising expenditures, state population, state unemployment rate, and jackpot (for the relevant games), we performed the respective regression analyses. We, then, evaluated the posited relationships and selected the best predictive model for each game, when statistical evidence supported a significant sales-advertising association. Using this final model, we addressed the three research questions at the core of this study. The results of this investigation suggested the existence of a significant positive and nonlinear (concave-downwards) Scratch sales-advertising relationship. No sales-advertising association was found for the Lotto or Powerball games. The data analyzed did not seem to support either the advertising “carryover effect” on sales on any of the games studied. From the theoretical point of view, these findings extend prior empirical research that has generally assumed, for simplification purposes, a linear sales-advertising relationship with its corresponding consequences. From the practical perspective, this study highlights advertising’s contribution to sales, which can help debunk mistaken beliefs frequently stigmatizing advertising as a resource-spending function and quell the long-established skepticism about its financial accountability.*

Advertising issues investigated: Efficiency of gambling advertising.

Type of study and method: Econometric study.

Location: Colorado, USA.

27. Ofcom. 2013. *Trends in Advertising Activity - Gambling*. London: Independent Regulator and Competition Authority for the UK Communications Industries (Ofcom).

Excerpt from press release, November 19, 2013. “Ofcom has today published audience research into gambling advertising on television.

- *Ofcom commissioned analysis earlier this year to look at the volume, scheduling, frequency and exposure of gambling advertising on UK television.*
- *Ofcom initiated this research to help inform it about how television gambling advertising has changed since the market was liberalised by Parliament in 2007. This supports Ofcom’s role in monitoring and understanding the markets it regulates.*
- *The research is based on analysis of BARB viewing data and categorises gambling adverts into four types: online casino and poker services; sports betting; bingo; and lotteries and scratch cards. ...”*

Advertising issues investigated: Volume of television advertising for various forms of gambling; frequency of exposure to various forms of advertising across different categories of television viewers.

Type of study and method: Media tracking with audience measurement.

Location: UK.

28. Planinac, L.C., J.E. Cohen, J. Reynolds, D.J. Robinson, A. Lavack & D. Korn. 2011. Lottery promotions at the point-of-sale in Ontario, Canada. *Journal of Gambling Studies* 27(2), 345-354.

***Abstract.** We documented the extent of point-of-sale (POS) lottery promotions in Ontario, Canada and the relationship between lottery promotions and store and city characteristics. This is the first quantitative study of POS lottery promotions. A total of 366 stores—independent and chain convenience stores, gas stations and grocery stores—were visited across 20 cities in Ontario. Data collectors unobtrusively observed the type of lottery promotions in each store and completed a data collection checklist. A lottery promotion index was created and hierarchical linear modeling (HLM) was conducted to examine the relationship between extent of lottery promotions and independent variables such as neighbourhood socioeconomic status and city prevalence of lottery ticket purchasing. POS lottery promotions were widespread across Ontario, with the highest level of promotion found in independent convenience stores. In the multivariable HLM model, none of the remaining independent variables remained statistically significant, except for store type. Lottery promotions are extensive at the POS in Ontario. These findings can help initiate discussions around the appropriateness and possible future regulation of this form of advertising.*

Advertising issues investigated: The volume of in-store promotion of lotteries in relation to variables such as neighbourhood socioeconomic status.

Type of study and method: Quantitative study of representative sample.

Location: Ontario, Canada.

29. Schottler Consulting. 2012. *The marketing, advertising and sponsorship of gambling products and services within New Zealand*. Auckland: New Zealand Ministry of Health.

Abstract. *The current study explores the effects of marketing, advertising and sponsorship of major gambling activities within New Zealand. This exploratory study involved conduct of focus groups and a survey of gamblers to identify how marketing and advertising approaches may impact gambler perceptions of gambling and motivations to gamble. As part of focus groups, a diverse range of gambling marketing and advertising materials from within New Zealand were reviewed. In addition, a literature review and scan of international marketing and advertising codes was undertaken. Based on major insights from the research, the key characteristics of harmful marketing and advertising were identified. Effects were similarly explored from both a general community perspective and from the perspective of people of Maori, Pacific and Asian backgrounds.*

Advertising issues investigated: Numerous, including: perception of and attitudes across different ethnic groups towards gambling advertising of various kinds and with various messages, self-perceived impact of advertising, deception in advertising, risk factors and advertising messages, cross-sectional observations of advertising recall and problem gambling status.

Type of study and method: Multi-method, including focus groups and a questionnaire administered to a panel with 400 participants.

Location: New Zealand.

Comment: This is an extensive report presenting a massive amount of data on how gambling advertising is perceived and how it may impact individuals.

30. Shah, D.V., R.J. Faber & S. Youn. 1999. Susceptibility and severity: Perceptual dimensions underlying the third-person effect. *Communication Research* 26(2), 240-267.

Abstract. *The authors posit that 2 distinct perceptual dimensions underlie the third-person effect hypothesis: judgments of susceptibility to communications (a cognitive process) and severity of communications (an affective process). To explore this, 194 18-82 yr olds were asked (a) to estimate their own and others' susceptibility to various types of advertising content and the severity of such advertising's effects on themselves and others, and (b) to express their willingness to censor these classes of commercials. The advertising content fell into 2 broad categories: controversial products (cigarettes, liquor, and beer) and gambling services (casinos and lotteries). Findings indicate that third-person perceptions exist in terms of susceptibility and*

severity, and that both of these perceptual biases are related to individuals' willingness to censor advertising.

Advertising issues investigated: The third-person effect with respect to controversial products and gambling (i.e. to what extent people believe themselves and others to be influenced by gambling advertising); willingness to censor advertising in relation to beliefs about the extent that oneself and others are influenced by advertising.

Type of study and method: Survey of consumers randomly recruited in a shopping mall (N=194).

Location: A large Midwestern American city.

Comment: This is the same study as reported in: Yuon, Faber & Shah (2000).

31. Sklar, A. & J.L. Derevensky. 2010. Way to play: Analyzing gambling ads for their appeal to underage youth. *Canadian Journal of Communication* 35(4), 533-554.

Abstract. *This study is the first in Canada to look at gambling ads from a variety of media sources from different provincial lotteries, with 127 television, radio, print, and public-display ads obtained from the Atlantic Lottery Corporation, Ontario Lottery and Gaming Corporation, Loto-Québec, and the Western Lottery Corporation. Ads were coded for recurring themes, symbols, and discourses using a qualitative software program and analyzed, with their appeal to youth forming the framework for analysis. Major findings include the discussion of nine key themes: easy money, dream, social status, glamour, regular folks, sports, excitement, humour, and youth culture. These themes are discussed in terms of their specific appeal to youth audiences, and their significance is related to existing literature.*

Advertising issues investigated: Messages in gambling advertising, with special attention to messages that appeal to underage youth.

Type of study and method: Content analysis of 127 advertisements received from gambling companies.

Location: Canada.

32. Stone, H.W. 2000. *An Analysis of Selected Determinants of Texas Lottery Revenue*. San Marcos: Applied Research Project, Texas State University.

Abstract. *State lotteries have been implemented in a majority of the United States. The anti-tax sentiment throughout the country has contributed to the approval and growth of this alternative method of revenue generation. In Texas, over \$21 billion in sales has been produced since the lottery began operating in 1992. Generally, this*

source of revenue has not been a stable or predictable one. Through the examination of certain influences on lottery revenues, officials can gain insight on ways to increase sales and maximize revenue if they so desire. In this study, multiple regression analysis is employed to evaluate the impact of four selected determinants on Texas lottery revenues. The four determinants analyzed in this study are the lottery payout rate, advertising expenditures, number of jackpots of \$25 million or more and the state unemployment rate. Of these four, the unemployment rate was found to have a significant impact on lottery revenues. Since the unemployment rate is a factor outside the control of lottery officials, the remaining three were also analyzed. Of the remaining three determinants, advertising expenditures were found to have a significant impact on lottery revenues.

Advertising issues investigated: Advertising efficiency.

Type of study and method: Econometric.

Location: Texas, USA.

33. Thomas, S., S. Lewis, J. Duong & C. McLeod. 2012. Sports betting marketing during sporting events: A stadium and broadcast census of Australian Football League matches. *Australian and New Zealand Journal of Public Health* 36(2), 145-152.

Abstract. *Objective: Using Australian Football League (AFL) matches as a case study, we investigated the frequency, length and content of marketing strategies for sports betting during two specific settings: 1) at stadiums during four live matches; and 2) during eight televised broadcasts of matches.*

Methods: Census of sports betting marketing during Round 12 of the 2011 AFL premiership season.

Results: Per match, there was an average of 58.5 episodes (median 49.5, s.d 27.8) and 341.1 minutes (median 324.1 minutes and s.d 44.5) of sports betting marketing at stadiums, and 50.5 episodes (median 53.5, s.d 45.2) and 4.8 minutes (median 5.0 minutes, s.d 4.0) during televised broadcasts. A diverse range of marketing techniques were used to: a) embed sports betting within the game; b) align sports betting with fans' overall experience of the game; and c) encourage individuals to bet live during the game. There were very few visible or audible messages (such as responsible gambling or Gambler's Help messages) to counter-frame the overwhelmingly positive messages that individuals received about sports betting during the match.

Conclusions and Implications: This study raises important questions about the impacts of saturation, integrated and impulse gambling marketing strategies in sporting matches. Future research should explore: 1) how wagering industry marketing strategies may affect the attitudes and behaviours of community sub-groups (e.g. young male sports fans, and children); and 2) which public health and

policy strategies, including regulation and harm minimisation messaging, will be effective in responding to wagering industry marketing strategies during sporting matches.

Advertising issues investigated: Volume and content of sports betting marketing.

Type of study and method: Observation of live and broadcast sports events.

Location: Australia.

34. Thomas, S.L., S. Lewis, C. McLeod & J. Haycock. 2012. 'They are working every angle'. A qualitative study of Australian adults' attitudes towards, and interactions with, gambling industry marketing strategies. *International Gambling Studies* 12(1), 111-127.

Abstract. *As gambling products have diversified so too have the ways in which the gambling industry has been able to target, reach and engage different sectors of the community. Limited research has explored the ways in which individuals conceptualize and respond to gambling marketing strategies. Semi-structured, qualitative interviews were conducted with 100 adults in Victoria, Australia, who had gambled at least once during the previous year. Participants described the multi-layered ways in which gambling was marketed and were concerned about the role of marketing in 'normalizing' gambling for some groups. Male participants felt 'bombaraded' and 'targeted' by sports bet marketing. Most women and older men actively resisted gambling marketing strategies. Older women, younger men, moderate and high risk gamblers and those from low socio-economic backgrounds were particularly influenced by incentivization to gambling. This study highlights the complex ways in which different individuals interpret and respond to gambling industry marketing strategies.*

Advertising issues investigated: Perceptions of and attitudes towards gambling advertising.

Type of study and method: Qualitative interviews with adults recruited in a variety of ways (N=100).

Location: State of Victoria, Australia.

35. Yuon, S., R.J. Faber & D.V. Shah. 2000. Restricting gambling: Advertising and the third-person effect. *Psychology and Marketing* 17(7), 633-649.

Abstract. *Along with the rapid growth experienced by the gaming industry in the United States has come increasing calls to restrict or ban gambling advertising. To date, little is known about what motivates people to support such restrictions on advertising. However, one recent theory, the third-person effect, offers a possible*

explanation. The third-person effect states that when confronted with negative messages, people will overestimate the messages' effect on others relative to themselves. Additionally, it suggests that it is this misperception that motivates them to take action against such messages. This study investigates whether a third-person effect occurs for gambling advertising and if this effect is related to procensorship attitudes for lotteries and casinos. The results suggest there is a sizable gap between perceptions of the effect of gambling advertising on one's self versus others, and that the perceived effect on others is related to a willingness to restrict such advertising.

Comment: This is the same study as reported in: Shah, Faber & Yuon (1999).

36. Zhang, P. 2004. *Over- or Under-Advertising by State Lotteries*. Doctoral dissertation, University of Maryland.

Abstract. *Modern lotteries in the United States are run exclusively by state governments. In many cases, states establish separate lottery agencies to administer and promote the games. One statutory duty of many lottery agencies is to maximize the net revenue of the games, hence, all agencies engage in advertising. There is however constant pressure from state legislatures to reduce advertising budgets because of the concerns about the efficacy of advertising in increasing sales, as well as the distaste of the state government's promotion of lottery. Existing literature suggests that the marginal effectiveness of advertising decreases as the quantity of advertising increases. To provide empirical evidence on whether an additional advertising dollar increases lottery sales, we examine quasi-experiments in three states (Illinois, Washington, and Massachusetts) where advertising budgets of state lotteries were exogenously curtailed by the state legislature. We find that the elasticity of advertising is 0.07-0.16, suggesting that a one dollar decrease in advertising spending could cost the state government \$9-10 of the net revenue at the margin. Contrary to the belief of some legislature that state lotteries spend too much on advertising, our results suggests that they may advertise too little in terms of maximizing the profit.*

Advertising issues investigated: Efficiency of advertising.

Type of study and method: Econometric.

Location: Three American states.

Part B: Studies including observations on gambling advertising

1. Amey, B. 2001. *People's Participation in and Attitudes to Gaming, 1985-2000: Final Results of the 2000 Survey*. Wellington: Department of Internal Affairs.

Advertising issues included: An association is observed between recall of gambling advertising and participation in gambling (pp. 176, 178).

2. Bonke, J. 2007. *Ludomani i Danmark II: Faktorer af betydning for spilleproblemer*. København: Socialforskningsinstituttet.

Advertising issues included: This Danish study compared gamblers who had at least one indication of problem gambling (NODS 1+) with gamblers without any indication; among the former, 20 percent reported gambling more because of advertising, compared with 11 percent among the latter (pp. 65-66).

3. Boughton, R. & J.M. Brewster. 2002. *Voices of Women who Gamble in Ontario: A Survey of Women's Gambling, Barriers to Treatment and Treatment Service Needs*. Toronto: Ontario Ministry of Health and Long Term Care.

Advertising issues included: It is observed that 20 percent of participants (N=365) in the study felt urges to gamble from advertising (p. 36).

4. Carlson, M.J. & T.L. Moore. 1998. *Adolescent Gambling in Oregon: A Report to the Oregon Gambling Addiction Treatment Foundation*. Salem (ON): Oregon Gambling Addiction Treatment Foundation.

Advertising issues included: An association is observed between recall of gambling advertising and participation in gambling (p. 13).

5. Clarke, D., S. Tse, M. Abbott, S. Townsend, P. Kingi & W. Manaia. 2006. Key indicators of the transition from social to problem gambling. *International Journal of Mental Health and Addiction* 4(3), 247-264.

Advertising issues included: A questionnaire study asked to what degree respondents agreed with the statement "Advertising encouraged me to think I could win"; responses varied across ethnic groups and age groups, youth agreeing more than adults (pp. 256, 258).

6. Clarke, D., S. Tse, M.W. Abbott, S. Townsend, P. Kingi & W. Manaia. 2007. Reasons for starting and continuing gambling in a mixed ethnic community sample of pathological and non-problem gamblers. *International Gambling Studies* 7(3), 299-313.

Advertising issues included: Similar to Clarke et al. (2006), reporting that problem gamblers agreed to a higher degree than non-problem gamblers with the statement "Advertising encouraged me to think I could win" (p. 305).

7. Clotfelter, C.T. & P.J. Cook. 1989. *Selling Hope: State Lotteries in America*. Cambridge, MA: Harvard University Press.

Advertising issues included: Analysis of messages and truthfulness in a sample of 282 gambling advertisements from various American states, obtained from gambling companies; calculation of lottery companies' expenses for advertising compared with other enterprises (Chapter 10).

8. Clotfelter, C.T., P.J. Cook, J.A. Edell & M. Moore. 1999. *State Lotteries at the Turn of the Century. Report to the National Gambling Impact Study Commission*. Durham: Duke University.

Advertising issues included: Twenty-five lottery commissions supplied marketing plans, which were analysed with respect to messages; 17 themes in advertising were distinguished (pp. 14-21).

9. Felsher, J.R., J.L. Derevensky & R. Gupta. 2004. Lottery playing amongst youth: Implications for prevention and social policy. *Journal of Gambling Studies* 20(2), 127-153.

Advertising issues included: A questionnaire study with youth included a question on recollection of having seen gambling advertising and a question if the respondents "would be more likely to purchase a ticket because they had seen the advertisement", 39 percent of participants answered the second question in the affirmative (p. 144).

10. Felsher, J.R., J.L. Derevensky & R. Gupta. 2004. Lottery participation by youth with gambling problems: Are lottery tickets a gateway to other gambling venues? *International Gambling Studies* 4(2), 109-125.

Advertising issues included: Similar to Felsher et al. (2004), adding the information that "Adolescents with gambling problems reported that they were also more likely to purchase a lottery ticket as a result of seeing it advertised on the store counter" (p. 121).

11. Frøyland, L.R., M. Hansen, M. Aaboen Sletten, L. Torgersen & T. von Soest. 2010. *Uskyldig moro? Pengespill og dataspill blant norske ungdommer*. Oslo: NOVA.

Advertising issues included: A school survey about gambling, with about 8000 Norwegian children as participants, included a question on recall of gambling advertising; problem gamblers recalled having seen more advertising than non-problem gamblers, with "at risk" gamblers in between (p. 83).

12. Grant, J.E. & S.W. Kim. 2001. Demographic and clinical features of 131 adult pathological gamblers. *Journal of Clinical Psychiatry* 62(12), 957-962.

Advertising issues included: This study included a question about what gave pathological gamblers urges to gamble; 46 percent of participants reported gambling advertising as a trigger (p. 969).

13. Hoa, K.-w., S. Wong Sau-kuena & J. Hui Lo Man-chuna. 2012. The relationship between gambling accessibility and Hong Kong people's participation in gambling activities. *Asia Pacific Journal of Social Work and Development* 22(4), 266-274.

Advertising issues included: This questionnaire study included a question on gambling advertising; it was observed that advertising made problem gamblers more willing to gamble than non-problem gamblers (pp. 267-270).

14. Jonsson, J., A. Andrén, T. Nilsson, O. Svensson, I. Munck, A. Kindstedt & S. Rönberg. 2003. *Spelberoende i Sverige - vad kännetecknar personer med spelproblem?* Stockholm: Statens folkhälsoinstitut.

Advertising issues included: The study used a "twin design" comparing Swedish problem and non-problem gamblers across a number of socio-demographic and psychological variables; it included a question if the respondent gambled more because of advertising, which problem gamblers answered in the affirmative more often than non-problem gamblers (p. 46).

15. McCormack, A., G.W. Shorter & M.D. Griffith. 2013. Characteristics and predictors of problem gambling on the internet. *International Journal of Mental Health and Addiction* 11(6), 634-657.

Advertising issues included: This online survey investigated predictors of online problem gambling; it is observed that: "Compared to all other gamblers, problem gamblers were significantly more likely to gamble online because of ... advertising ..." (pp. 11, 15).

16. Mizerski, D. & K. Mizerski. 2001. The effect and implications for a stochastic pattern of lotto game play. *International Gambling Studies* 1(1), 132-149.

Advertising issues included: This econometric analysis of the Florida state lottery is inconclusive with regard to the extent that advertising may stimulate sales, this is because advertising was fairly constant in volume over the study period.

17. Mizerski, D., R. Miller, K. Mizerski & D. Lam. 2004. The stochastic nature of purchasing a state's lottery products. *Australasian Marketing Journal* 12(3), 56-69.

Advertising issues included: Similar to Mizerski & Mizerski (2001).

18. Planzer, S., H.M. Gray & H.J. Shaffer. 2013. Associations between national gambling policies and disordered gambling prevalence rates within Europe.

International Journal of Law and Psychiatry, DOI: 10.1016/j.ijlp.2013.11.002 (in press).

Advertising issues included: This study in public health law compares five regulatory variables, of which restrictions on gambling advertising is one, with rates of disordered problem gambling prevalence in 12 European countries; it is a cross-sectional panel study; the only statistically significant association found was that: “rates of sub-clinical (i.e., Level 2) disordered gambling were higher within environments that mandated less strict regulation of advertising for online gambling” (this study is presented and discussed in Section 4.2).

19. Sandberg, H., K. Gidlöf & N. Holmberg. 2011. Children’s exposure to and perceptions of online advertising. *International Journal of Communication* 5, 21-50.

Advertising issues included: This eye-tracking experimental study explored children’s exposure to and perceptions of various kinds of internet advertising, including gambling advertising (this study is extensively discussed in Section 3.2).

20. Shead, N.W., D.C. Hodgins & D. Scharf. 2008. Differences between poker players and non-poker-playing gamblers. *International Gambling Studies* 8(2), 167-178.

Advertising issues included: This study examined poker play among university students; among other things it was found that 13 percent of poker players reported to have begun playing internet poker partly because of advertising (p. 173).

21. Stranahan, H. & M.O. Borg. 1998. Horizontal equity implications of the lottery tax. *National Tax Journal* 51(1), 71-82.

Advertising issues included: This telephone survey observed that high recall of gambling advertising in stores was associated with relatively frequent participation in lotteries, while high recall of gambling advertising on the radio was associated with relatively infrequent participation in lotteries (pp. 79-80).

22. Valentine, G. & K. Hughes. 2008. *New forms of participation: Problem internet gambling and the role of the family*. Leeds: University of Leeds.

Advertising issues included: This qualitative study with problem gamblers observed that some of them reported being triggered to gamble by advertising.