

# RESEARCH REPORT

# Impact of gambling warning messages on advertising perceptions

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## Executive summary

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This report provides a summary of the results from three linked studies relating to gambling advertising and warning messages. The aim of this research was to address the following three research questions:

- Study 1. How are legislative interventions used in different jurisdictions of Australia?
- Study 2. What are the different communication strategies employed by gambling advertisers?
- Study 3. How does the use of warning messages impact on perceptions and response to gambling advertisements?

### Study 1

The aim of the first study was to better understand the regulatory requirements on gambling advertisers in Australia. This study used secondary information gathered from different national and international government sources to examine the following questions:

- What legislative requirements govern the advertising of gambling in Australia, particularly in relation to the use of warning messages?
- Is Australian legislation keeping pace with societal expectations?
- How does the Australian regulatory context compare with other OECD countries?

In responding to these research questions, we identified the following key findings:

- The results of study 1 confirmed Thomas et al.'s (2011) claim regarding the complex, diverse, and inconsistent nature of gambling regulation.
- Some areas of concern were well supported, particularly those relating to the protection of minors and vulnerable persons and those relating to the requirement that advertising not be false or misleading. The analysis of societal expectations highlighted significant misalignment between public sentiment and the legislation.
- The analysis highlighted the need for more restrictions dealing with the inclusion of false and misleading statements such as the depiction of gambling as a “sure thing.”
- Australia has a fairly comprehensive regulatory framework compared with most other OECD countries.

- Australia would need to do more if it intends to maintain its perception as a leader among developed OECD countries in relation to gambling regulation.

In relation to these research findings, we identified the following recommendations:

- Recommendation 1: The absence of a consistent, strict legislative framework, has resulting in gambling advertisers being responsible for self-regulation. A national framework would greatly assist in the regulation of gambling advertising.
- Recommendation 2: In considering the establishment of a national regulatory framework, consideration needs to be given not only to the content of legislation, but also to the way in which this legislation is prosecuted in different jurisdictions. This is important if the general public is to have confidence in government's ability and willingness to act on behalf of society.
- Recommendation 3: Future legislation should explore opportunities to tighten provisions relating to deception, and provide clearer, more consistent guidelines to reduce the likelihood that vulnerable persons (particularly children) are normalised to gambling.
- Recommendation 4: While Australia has a fairly comprehensive regulatory framework compared with most other OECD countries, the social and health related concerns associated with gambling warrant that consideration be given to following Ireland's lead and introducing a complete ban on gambling advertising.

## Study 2

The aim of the second study was to better understand the different communication strategies employed by advertisers of gambling products and services. To achieve this aim, we used content analysis of a sample of Australian television advertisements to address the following questions:

- What are the different communication strategies adopted by Australian gambling advertisers?
- How are the different types of communication strategies related?

In responding to these research questions, we identified the following key findings:

- The modal approach to gambling advertising involved the use of an informational appeal (67%), focused on experience gamblers (46%), a non-immediate call-to-action (80%), and used an incentive goal orientation.
- The findings are consistent with information processing theory (Holems & Croker 1987), which suggests that more experienced gamblers are likely to have a higher involvement.

- Advertisers use a combination of different tactics within their advertisements, and that these tactics conform to what we understand about information processing theory.
- The role of goal orientation is important in understanding the communication strategies of gambling advertisers.

In relation to these research findings, we identified the following recommendations:

- Recommendation 5: Regulators should take advantage of the findings on communication strategies to develop better targeted, more effective counter advertising.
- Recommendation 6: Regulators should take advantage of the findings on communication strategies to develop better targeted, more effective regulatory interventions (e.g., warning messages).

### Study 3

The aim of the third and final study was to better understand how the framing of warning messages influenced perceptions of gambling advertisements. This study used information gathered from a discrete choice experiment to address the following questions:

- What aspect of the communication strategy has the greatest impact on gambling preferences?
- How does warning message framing impact on perceptions of gambling advertising?
- Does the interaction of warning messages and advertising strategy vary according to vulnerability?

In responding to these research questions, we identified the following key findings:

- The identification of two segments echoes the work of Holems & Croker (1987) who found that preferences for communication strategies are influenced by cognition and information processing.
- The most popular communication strategies for segment 1 emphasized call to action, followed by the type of appeal, situation, and goal orientation.
- The communications strategies that dominated segment 2 related most to appeal, followed by the type of situation, goal orientation, and the call to action.
- Odds ratios show that effectively executed warning messages can go a long way to cancelling out the effect of gambling advertising.

- Segment level differences explain some of the inconsistencies observed in prior research on the use of warning messages.
- Response patterns were consistent with dual process theories of cognition.
- The less discerning preferences of the larger segment seems to suggest a lower level of involvement, and hence a more peripheral, automated processing.
- The sensitivity of the smaller segment, on the other hand, appears to suggest a more rational, active processing.

In relation to these research findings, we identified the following recommendations:

- Recommendation 7: Regulators could use this understanding of segments to develop better targeted, more effective counter advertising.
- Recommendation 8: Regulators could use this understanding of segments to develop better targeted, more effective regulatory interventions (e.g., warning messages).
- Recommendation 9: Future research could potentially target problem gamblers to better understand the triggers that activate their active processing of warning messages.

## Background

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Gambling has its roots in antiquity, and has existed in most societies in some form or another since the earliest stages of civilization (Moodie & Hastings, 2009). However, the pervasive and highly commercialised forms of gambling that are prevalent today are a relatively new phenomenon (Schwartz, 2013). Adams, Raeburn & de Silva (2009) assert that modern gambling is distinguishable from previous forms of gambling in three important ways:

1. The shift from small, localized gambling to large-scale commercial operations;
2. The increasingly sophisticated use of technology and psychology to lure and attract gamblers (design of games, presentation of gaming environments, mobile gaming, and so on); and
3. The transnational expansion of gambling that has been driven by large multi-national corporations seeking to create gambling monopolies.

These conditions have contributed to the proliferation of gambling in Australia. A recent report by the Economist (2011), for example, reveals that Australia has one of the highest expenditures per capita in the world on gambling by adults aged over 17 years, with an expenditure of almost \$1,300 per person on average per year—more than double the OECD average. This presents a particular challenge for regulators as they attempt to contend with the growing social and economic costs of problem gambling.

### Problem gambling

Associated with the increased availability of gambling options has been an increased incidence of problem gambling. Problem gambling is a familiar type of compulsive behaviour that is characterised by a lack of volition and an inability on the part of gamblers to moderate behaviour and avoid negative outcomes. Drawing on the compulsive-buying literature, Prentice and Woodside (2013) assert that despite a desire to resist the urge to gamble, problem gamblers are unable to do so. In this sense, they suggest that compulsive gambling shares many of the same negative consequences that are consistent with other types of addictive behaviour, including material disadvantage and social stigma.

At its most severe, problem gambling can attract a clinical diagnosis as a pathological impulse-control disorder. To justify such a diagnosis, the American Psychiatric Association (NIH, 2014) contends that pathological gamblers must have five or more of the following symptoms: (i) committing a crime to get money to gamble; (ii) feeling restless or irritable when trying to cut back on or quit gambling; (iii) gambling to escape problems or feelings of sadness or anxiety; (iv) gambling larger amounts to try and recoup losses; (v) losing a job or relationship because of gambling; (vi) many unsuccessful attempts to quit; (vii) borrowing money due to gambling losses; (ix) needing to gamble

larger amounts in order to feel excitement; and (x) spending a lot of time thinking about gambling or reliving past experiences.

Unfortunately, the incidence of problem and pathological gambling in the developed world appears to be increasing in line with the increased availability and promotion of gambling products and services. For instance, the latest iteration of the British Gambling Prevalence survey (2010) reports a 33% increase in the proportion of respondents with a pathological gambling diagnosis according to the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV). A similar spike at the extreme end of the problem-gambling continuum was observed in the most recent version of the Queensland Government's gambling prevalence survey (APC, 2010), with a 16% increase in the proportion of gamblers reporting a score of 8 or more on the Canadian Problem Gambling Index (CPGI).

A recent report by the Australian Productivity Commission (2010), estimates that there are more than 500,000 adults in Australia either at risk of or exhibiting symptoms consistent with a gambling problem. The same report reveals that the social cost to the Australian community from problem gambling is at least \$4.7 billion a year, with the impact from one problem gambler reported to extend to at least 10 other people. This suggests that problem gambling in Australia in any given year impacts more than 5 million people, or 20% of the Australian population.

### **Advertising and gambling**

Advertising concerns the placement of announcements and persuasive messages in time or space to inform and/or influence members of a particular target market or audience about the availability of products and services (AMA, 2014). Accordingly, advertising can have both a positive and negative impact on its audiences. On the positive side, advertising addresses information asymmetry (Mitra & Lynch Jr., 1995), and can serve the needs of potential gamblers by:

- Informing them of the availability of gambling products and services;
- Providing information on competing products and services to promote informed choices; and
- Providing brand-related information to help gamblers mitigate perceived risks by seeking out gambling products and services from trustworthy providers.

Advertising also serves the needs of the commercial, not-for-profit organisations, and government. Commercial organisations benefit from increased revenues and better target market alignment. Not-for-profit organisations benefit indirectly as many gambling operators reinvest a percentage of their profits to address social issues and support community organisations. And while these aspects of advertising are indeed beneficial, it is often the negative side of gambling advertising that attracts most attention in the popular press.



The key criticisms of gambling advertising can be summarised in terms of the following unethical practices:

- Fear of manipulation or deception (Darke & Ritchie, 2007);
- Concern about the exploitation of vulnerable persons (Jahdi & Acikdilli, 2009); and
- Moral concerns regarding the promotion of products that carry negative health consequences (Bryant, Zillmann & Oliver, 2002).

Regrettably, the literature examining the ethical aspects of gambling advertising is very limited. Monaghan, Derevensky & Sklar (2008) assert that more research is needed regarding the different communication strategies used by gambling advertisers, with particular attention given to the documentation of the impact of gambling advertising on vulnerable persons. In a recent qualitative study, Thomas, Lewis, McLeod & Haycock (2011) observed that there is growing concern about the role of marketing in 'normalising' gambling for some groups, with older women, younger men, moderate and high risk gamblers and those from low socio-economic backgrounds particularly susceptible to gambling advertising.

Recent evidence is also emerging that gambling advertising has a disproportionately greater impact on problem gamblers (Hing, Cherney, Blaszczynski, Gainsbury & Lubman, 2014), though the evidence, according to Binde (2014), is scant, anecdotal and uncertain. While the debate over gambling advertising and its impact on compulsive or problem gambling is likely to continue, more research is needed to inform this debate. To this end, Lorenz (1990) argues that research will assist policy makers to make decisions based on scientific facts, rather than having policy unduly influenced by gambling industry lobbyists or the opinions by those opposed to gambling on moral or religious grounds (p. 383).

### **Regulation of gambling advertising**

In the face of growing evidence regarding the health and social impacts of problem gambling, governments in Australia and around the world have sought to regulate marketing of gambling products and services. Thomas et al. (2011, p.4) highlight, however, that the effectiveness of legislative intervention is being compromised as the frameworks and regulations that govern the marketing of gambling are "complex, diverse, and often inconsistent."

There has been a surprising scarcity of research examining the impact of regulatory interventions on gambling behaviour. One recent study that specifically examined the impact of legislative interventions on gambling behaviour, reports that this intervention was relatively ineffective in either curbing promotion or discouraging participation (Kim et al., 2013). And while evidence is emerging regarding the use of warning messages within electronic gaming machines (e.g., Gainsbury, Aro, Ball, Tobar & Russell (2015), there remains a dearth of non-laboratory research investigating the use of warning messages within television advertising.

Our project seeks to introduce new evidence on the communication strategies employed within gambling advertising. It is hoped that this will aid a more informed approach to the regulation of gambling. Our project also represents the first attempt to systematically examine how a particular legislative intervention, namely the use of warning messages, impacts on perceptions of gambling advertisements, as well as intentions to gamble by persons with different levels of vulnerability.

## Overview of this report

Following from the above background, this research intends to address three fundamental research questions:

- Study 1. How are legislative interventions used in different jurisdictions of Australia?
- Study 2. What are the different communication strategies employed by gambling advertisers?
- Study 3. How does the use of warning messages impact on perceptions and response to gambling advertisements?

To respond to these research questions, this report presents the findings of three inter-related studies.

- Study 1 provides an evaluation of Australian advertising legislation. This is the first comprehensive study of gambling legislation undertaken anywhere in the world. In addition to analysing the Australian regulatory response, we will also seek to understand how this response aligns with societal expectations, and importantly, how it compares with other OECD countries.
- Study 2 will provide a detailed examination of the different communication strategies used by Australian gambling advertisers. Using a framework derived from literature, we will examine the prevalence of different advertising tactics in a sample of real television advertisements, and seek to understand how these tactics are combined to target gamblers. This is the first detailed examination of Australian gambling advertisements.
- Study 3 will systematically examine the influence of warning messages on gambling advertisement perceptions. This is another world first. We will utilise an advanced combinatorial experiment to examine how the perceptions of gamblers with different levels of vulnerability respond to different communication strategies, and how the use of warning messages impacts on their perceptions and intentions.

Taken together, these three studies will provide the information needed to resolve the aforementioned research questions, and contribute to our theoretical understanding of

these important issues. Our work also has important practical and policy value, as it provides an overview of the current state of play of gambling advertising in Australia, and presents information on the efficacy of a particular legislative intervention.

## Study 1

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The aim of the first study is to better understand the regulatory requirements on gambling advertisers in Australia. This study will use secondary information gathered from different national and international government sources to examine the following questions:

- What legislative requirements govern the advertising of gambling in Australia, particularly in relation to the use of warning messages?
- Is Australian legislation keeping pace with societal expectations?
- How does the Australian regulatory context compare with other OECD countries?

There is a shortage of research relating to gambling advertising legislation. This study makes an important contribution to knowledge by seeking to understand legislation relating to gambling advertising in Australia.

## Conceptual development

### Regulation of gambling advertising

According to the Australian Productivity Commission (2010, p. K1), the main rationale for regulating the advertising of gambling products and services is to ensure that promotion is not “misleading or deceptive and that they [advertisements] are consistent with societal norms.” Additionally, gambling, like other forms of compulsive consumption, carries documented health and social risks. To protect vulnerable individuals from such risks, governments seek to restrict the promotion of gambling products and services in order to ensure that children and persons with impulse-control problems are protected.

An extensive amount of regulation exists internationally to inform how gambling can be marketed. At the lowest end of the regulatory continuum, gambling providers may be subject to self-regulation against an industry code of conduct. Whereas the more typical approach is for governments, particularly in developed countries such as Australia, to establish formal legislative instruments to limit the content and placement of gambling advertisements, and to place requirements on gaming establishments to employ safeguards to protect vulnerable persons.

The main criticisms of this regulation concern its complexity and inconsistency. For instance, Thomas et al. (2011) contend that legislation in different jurisdictions of Australia is placing different obligations on gambling providers regarding the marketing of their products and services. This creates a challenge to gambling providers who must bear the cost of altering their advertising messages. However, this situation is unlikely to change, as the Productivity Commission Report highlights the fragmented nature of the gambling industry, where vested and pecuniary interests act to oppose uniform advertising standards (see APC, 2010, p. K15).

An aspect of gambling advertising regulation that regularly attracts criticism is the portrayal of gambling as a harmless form of entertainment. McMullan and Miller (2009), for example, argue that gambling advertising typically positions gambling to be a fun, enjoyable, and risk-free pastime; ignoring the adverse impact of increased gambling behaviour. Prior research has established that exposure to media stories with positive messages about gambling significantly increase gambling intentions, whereas the inclusion of warning messages and anti-gambling content can help to mitigate the effects of gambling advertisements (Lee, Lemanski & Jun, 2008). However, little is known about the efficacy of this legislative intervention.

### **Related work on compulsive consumption**

Given the limited research on gambling advertising, we thought it would be useful to briefly consider prior research on advertising in other compulsive consumption settings. Binde (2014) highlighted in a critical research review of gambling advertising that this is a common practice, and that comparisons were most frequently made between gambling and the study of alcohol and tobacco. Both of these compulsive settings have attracted significant research attention in the past, and while a detailed review is outside of the scope of this study, we will focus on identifying some key insights relating to the regulatory treatment of these settings that may inform our analysis of gambling advertising legislation.

The link between advertising and increased consumption of alcohol is well established in the literature. For instance, Jones and Magee (2011) investigated the influence of exposure to alcohol advertising and the impact on consumption among adolescents (12 – 17 year olds). Nearly all participants indicated they had seen alcohol advertising on television (94.2%). The results also showed higher awareness of advertising and promotion was associated with a degree of normalisation, and that exposure to different types of alcohol advertisements was associated with increased alcohol consumption.

Importantly, Williams, Chaloupka and Wechsler (2005) have found that policy can shape drinking behaviour (interaction between access and price), and mitigate the likelihood that a college student will transition from abstainer to moderate or heavy drinker. In relation to our study, these studies reinforce the importance of regulation to combat normalisation of consumption during the formative, adolescent years.

Another setting with potential to influence our understanding of gambling advertising is the study of tobacco advertising and smoking (Laws, Whitman, Bowser & Krech, 2002; Neuman, Bitton & Glantz, 2002). Saffer & Chaloupka (2000) have likewise confirmed the well-established link between tobacco advertising and increased tobacco consumption. However, their research is interesting in that it also provides empirical evidence that a comprehensive and integrated approach to regulation is more likely to reduce tobacco consumption, and that lack of a coordinated approach to advertising regulation seriously hinders effectiveness. This finding has particular relevance to our study of the coordinated nature of the legislative response across different Australian jurisdictions.

The research on tobacco advertising also reveals the capacity of tobacco companies to quickly and effectively respond to legislative interventions. For instance, Tobacco companies have relied increasingly on point of sale marketing since an international agreement was made to end broadcast advertising of tobacco in the early 1970s. While jurisdictions such as Australia have continued to place limits on promotion (e.g., preventing point of sale promotion and introducing plain packaging), smoking levels among youth have been remarkably resilient to regulatory interventions (Carson, Agteren, Ameer, Hnin, Smith & Yayasinghe, 2016). This finding reinforces the need for gambling legislators to ensure that regulatory efforts keep pace with the changing behaviour of advertisers, and that particular attention is given to the protection of vulnerable persons.

## Methodology

This study focused on legislation from all eight states and territories of Australia. The legislation was collected from online databases, and analysed using Leximancer, a software package designed to uncover key themes in text-based documents via an automated semantic analysis (Smith & Humphreys, 2006). Dann (2010) recently applied this tool to facilitate a historical analysis of social marketing.

Consistent with the procedure used by Dann (2010), the analysis will consist of three steps. The first step will identify dominant thematic groups based on the presence of concept clusters. The second step involves manual intervention, where the goal is to check the content and logic of the concept clusters to ensure that they are valid. This step may also involve the removal of irrelevant concepts identified during the automated analysis. The third step involved the manipulation of the size of the thematic clusters such that the final groupings were intuitively valid. This final step has been shown to result in thematic analysis that is reliable and consistent with manual coding procedures (Smith, Grech & Horberry, 2002).

This preliminary analysis was then used to inform an examination of how well the current Australian legislation aligns with the expectations of society. To test the claim that government regulates the advertising of gambling products and services to ensure that promotion is consistent with societal norms, we undertook a content analysis of 783 pages of text representing the transcripts of seven public hearings held in relation to the Productivity Commission inquiry into gambling. These public hearings were held in Sydney (2), Melbourne (2), Adelaide, Brisbane and Canberra. These were intentionally broad to ensure that a wide range of societal views were canvassed in relation to gambling in Australia.

The framework developed earlier was then used to facilitate an international comparison of gambling legislation. We focused initially on the 34 OECD member countries. The decision to focus on OECD countries was intentional, as this reference group represents a relatively homogenous group of highly developed countries. This sample is also regularly used in evaluations of other types of social marketing interventions. For

example, Laugesen & Meads (1991) studied the impact of advertising regulation on tobacco consumption within 22 OECD countries.

## Key Findings

### Analysis of gambling legislation in Australia

Gambling has long been regarded as embedded in Australian culture (Pinto & Wilson, 1990), and perhaps as a consequence, considerable debate, research, and legislative reform have occurred within the Australian gambling context over recent decades (Delfabbro & King, 2012).

Promotion of gambling in Australia is governed by state and territory legislation, with some overarching Commonwealth legislation (particularly around interactive gambling). This legislation prescribes what can be advertised and how. Some jurisdictions require compliance with codes of conduct and prescribe statements or warnings to accompany certain types of advertising. To explore legislation impacting gambling advertising in Australia, this paper will examine the content and requirements relating to Commonwealth and the different state and territorial legislative instruments.

The main Commonwealth legislation is the Interactive Gambling Act (2001), which makes it illegal to advertise interactive gambling services in Australia. The prohibition on advertising interactive gambling services is broad and includes any material that promotes or gives publicity to an interactive gambling service, interactive gambling services in general, the whole or part of a trademark in respect to an interactive gambling service, or any words closely associated with an interactive gambling service. However, some states and territories apply restrictions to the Act. For instance, the Interactive Gambling Act of the ACT (1998) and the Interactive Gambling (Player Protection) Act of Queensland (1998) provide for promotion of authorized [interactive] games subject to the approval of the minister.

Despite this, most legislative instruments claim similar goals and are motivated by some common concerns regarding the inappropriate targeting of gambling advertising, particularly to children. While this legislation generally aims to restrict practices that encourage problem gambling (e.g., gambling accounts and interactive gaming), this ambition appears to be hindered by a patchwork of regulations and self-regulation that focus on jurisdictional boundaries that appear inconsistent with the digital, networked reality of today.

One increasingly popular weapon in the arsenal of regulators determined to portray a more balanced and responsible view of gambling is the requirement for advertising to include a warning message. McMullan (2011) asserts that these messages have typically taken the form of age advisories, warnings for people with gambling problems, statistical and odds-related information on the chances of winning, and messages emphasizing reasonable gambling practices. In addition to these types of messages, in Australia

warnings may also provide information about support services available to problem gamblers. However, not surprisingly, the guidance from regulators on the wording and format of such warnings is also varied. For example, the Gambling Regulation Act of Victoria (2003) requires that advertising include a prescribed statement in relation to problem gambling, but then does not provide guidance on what should be included in this statement.

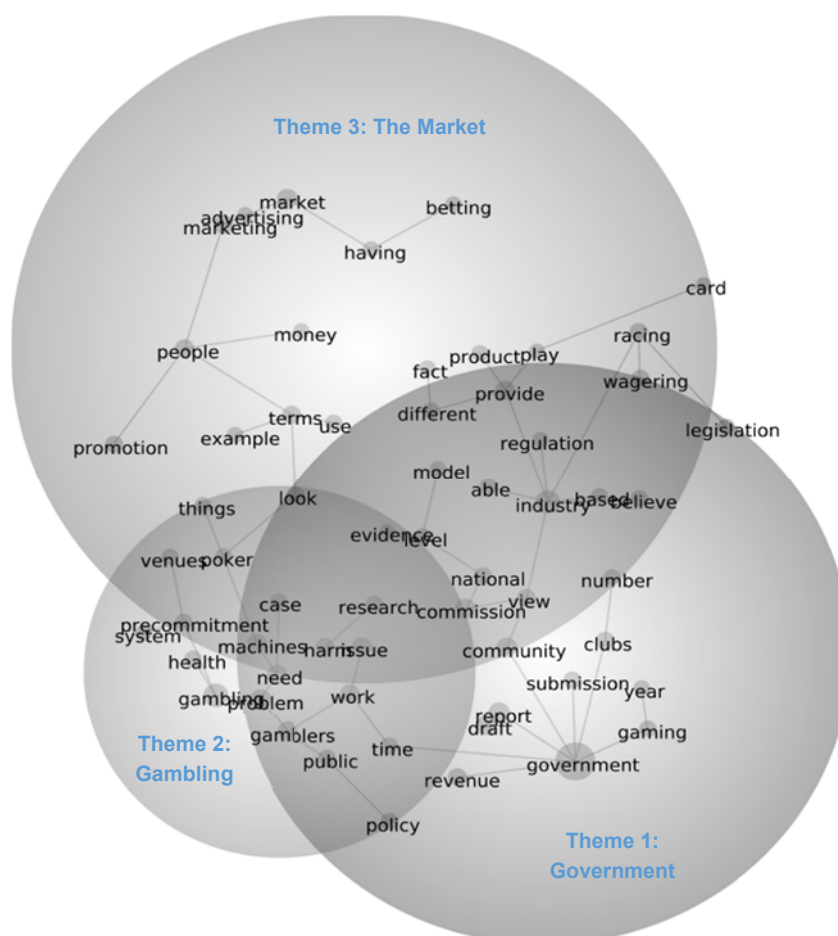
Appendix 1 provides an overview of the key legislation for each Australian state and territory. This table includes a review of the key restrictions for gambling advertising in the eight jurisdictions, along with key references to the relevant section of the legislative instruments. From this analysis, it can be seen that Western Australia, Northern Territory, and Tasmania make no specific reference to gambling advertising within their gaming legislation. The other five states and territories all place some restrictions on gambling advertising. The analysis indicates that Queensland, South Australia, and Victoria are the most regulated jurisdictions in Australia. In addition to the standard inclusions relating to the prohibition of marketing gambling products and services to minors and vulnerable persons, and a responsibility to ensure that advertising did not provide false or misleading claims regarding the prospect of success; these states provided additional controls relating to the inclusion of warning messages, the consumption of alcohol while gambling, social responsibility, and permissible advertising times. A summary of the 10 key legislative controls were identified for further study.

### **Comparing Australian legislation to societal expectations**

Meeting society's expectations regarding the appropriate promotion of gambling products and services is an important requirement for government intervention. To examine alignment of advertising regulation with societal norms, a content analysis was undertaken of the transcripts of seven public hearings held for the Productivity Commission inquiry into gambling. Analysis was undertaken using the computer software package, Leximancer, which categorises text into 'themes' and allows researchers to develop and analyse maps.

This analysis revealed three dominant themes and 61 associated concepts. In line with the conventions of Leximancer, the three themes are named after the three most popular concepts in the analysis, namely: government (375); gambling (104); and market (97). The numbers in the brackets after the themes represent the frequency counts for these concepts. A conceptual map showing the three dominant themes and associated concepts is presented in Figure 1. This diagram shows three key themes coming from the transcripts, with sub themes and connections between the subthemes identified inside the larger circles. The size of the circles indicate the frequency of relevance for the theme.



**Figure 1. Concept map for societal perceptions of gambling**

The government theme was the most connected of the three themes based on the sum of the co-occurrence counts for each concept within this theme with all of the other available concepts. With a connectivity score of 100%, the concepts within the government theme were observed to be connected to all other concepts within the analysis. The main concepts associated with this theme included industry (97), report (62), community (60), and commission (47). The gambling and market themes exhibited connectivity of 76% and 60%, respectively. The most common concepts associated with the gambling theme were problem (56), issue (52), need (48), and gamblers (47). Likewise, the most popular concepts associated with the market theme were marketing (74), provide (57), people (50), and terms (47).

To examine societal support for the key areas of advertising legislation in Australia, an analysis was undertaken to identify the frequency and co-occurrence likelihood of various related concepts. For example, to examine societal perceptions regarding the depiction of children in gambling advertising, and to understand the desire to protect children, the keywords “children,” “youth” and “minors” were seeded. Appendix 2 presents a summary

of the analysis undertaken to evaluate the different areas of legislation, along with keywords and sample quotes.

The results presented in Appendix 3 suggest mixed support for the current areas of legislation. While this is based on analysis of the transcripts, rather than interview or survey data, it does indicate areas that may require further research. Strong support was observed for the protection of vulnerable persons, however, only modest support was observed for protecting children even though this is often highlighted as a very important regulatory concern. Modest support was also observed for keeping alcohol and gambling separated, though weak support was observed for social responsibility suggesting that consumers may not have faith in gambling organisations to self-regulate.

### **Comparing Australian legislation to other OECD countries**

In order to contrast Australian legislation with that of other international jurisdictions, gambling legislation from 34 OECD countries was reviewed. This review focused on comparing the advertising and promotion requirements of Australian legislation as summarised by the 10 key requirements from study 1. Appendix 3 summarises the presence of these requirements within OECD countries.

The analysis presented in Appendix 3 shows that Australia appears to have one of the most regulated jurisdictions in regard to advertising of gambling, with the notable exception of those countries with either a complete ban on gambling, or, in some countries on gambling promotion. These countries are indicated in Appendix 3. From the analysis, it can be seen that the most common areas of legislative intervention related to the promotion of gambling to minors, and the promotion of gambling as an investment strategy for increasing personal wealth. Only Germany had a specific inclusion relating to problem gamblers and the disadvantaged, and only the United Kingdom and Austria include restrictions on when an advertisement could be shown. The Netherlands was the only other OECD country to include a provision relating to social responsibility and community standards.

Despite reports regarding the increased use of warning messages as a strategy for balancing the communication messages contained within gambling promotion (McMullan, 2011), evidence in support of this strategy was only observed in Australia, France, Italy, Mexico, and Spain.

## **Discussion**

### **What legislative requirements govern the advertising of gambling in Australia, particularly in relation to the use of warning messages?**

The results of study 1 confirmed Thomas et al.'s (2011) claim regarding the complex, diverse, and inconsistent nature of gambling regulation. Even within Australia, which has a low population density by international standards, there were considerable differences

in the nature of legislation relating to the marketing of gambling products and services. While it is understood that gambling advertising legislation is managed at a State/Territory level, a national approach to legislation would be expected to reduce confusion.

### **Recommendation 1**

The absence of consistent, strict legislative framework, has resulting in gambling advertisers being responsible for self-regulation. A national framework would greatly assist in the regulation of gambling advertising.

It was encouraging to see that some areas of concern were quite well supported, particularly those relating to the protection of minors and vulnerable persons and those relating to the requirement that advertising not be false or misleading. This was consistent with McMullan and Miller's (2009) concern regarding the depiction of gambling as a harmless and risk-free pastime. There was also no clear indication that this legislation was skewed in favour of gambling providers, suggesting that any conflicts of interest are likely to arise from the application of the legislation rather than the content of the legislation.

### **Recommendation 2**

In considering the establishment of a national regulatory framework, consideration needs to be given not only to the content of legislation, but also to the way in which this legislation is prosecuted in the different jurisdictions. This is important if the general public is to have confidence in government's ability and willingness to act on behalf of society.

## **Is Australian legislation keeping pace with societal expectations?**

The analysis of societal expectations highlighted a range of inconsistencies. In particular, it would appear that there is a significant misalignment between public sentiment and the legislation intended to reflect broader societal norms (APC, 2010). The analysis of the transcripts from seven public hearings only provides limited support for the key areas of Australian legislation, with no support around the restrictions dealing with the inclusion of false and misleading statements, the depiction of gambling as a "sure thing," the need for warning messages, and limitations on when an advertisement could be shown.

While concerns may be raised that this finding was an artefact of keyword choice and that the use of different keywords could have resulted in a different result; the automated content analysis process within Leximancer is based on a thesaurus that links related terms to these keywords. This suggests that all related terms would have been captured by the analysis.

Accordingly, these findings suggest one of two extreme conclusions: That the legislation is in need of a dramatic overhaul, or that the concerns were not mentioned because they

are so universally supported that they no longer warrant mentioning. It is likely that the true answer lies between these two extremes. While it is plausible that citizens would have an expectation that their government would protect them from exploitation and deception (e.g., misleading or erroneous advertising), it is also likely that some considerations (e.g., warning messages and viewing times) have not yet matured to the point of entering public discourse.

### **Recommendation 3**

Future legislation should explore opportunities to tighten provisions relating to deception, and provide clearer, more consistent guidelines to reduce the likelihood that vulnerable persons (particularly children) are normalised to gambling.

## **How does the Australian regulatory context compare with other OECD countries?**

From the analysis of OECD countries, it is clear that Australia is positioned somewhere in the middle. While it is more regulated than many of their developed country peers (e.g., United States, United Kingdom, Canada, and New Zealand), there were a number of OECD countries that had complete bans on either gambling or advertising of gambling (e.g., Estonia, Iceland, Ireland, Israel, Japan, Norway, Korea, and Turkey). A study exploring the degree of gambling advertising regulation and gambling usage benchmarked against advertising regulation would make a useful contribution to both researchers and policy makers.

The findings also suggest that the more developed countries within the OECD are, in general, more liberal in regard to gambling and its promotion. In this regard it is noteworthy that Northern Ireland is an exception, with the introduction of their Gambling Control Bill (2013) paving the way to much stricter controls on gambling, including a move towards a complete ban on gambling advertising and promotion (Shatter, 2013). Australia would need to do more if it intends to maintain its perception as a leader among developed OECD countries in this area.

### **Recommendation 4**

While Australia has a fairly comprehensive regulatory framework compared with most other OECD countries, the social and health related concerns associated with gambling warrant that consideration be given to following Ireland's lead and introducing a complete ban on gambling advertising.

## Study 2

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The aim of the second study is to better understand the different communication strategies employed by advertisers of gambling products and services. This was assessed using a content analysis of a sample of Australian television advertisements to address the following questions:

- What are the different communication strategies adopted by Australian gambling advertisers?
- How are the different types of communication strategies related?

Specific communication strategies to be examined include: Type of appeal used, intended audience for the advertising, situation and action depicted, and the goal orientation of the advertisement.

## Conceptual development

### Advertising of gambling products and services

Advertising theory provides an understanding of how communication strategies are employed by advertisers to make their advertising more persuasive. Persuasive messages generally contain one or more appeals which are intended to produce attitudinal change and trigger behavioural response from target populations. According to Holmes & Crocker (1987), an appeal is essentially a persuasive tactic that is directed either toward logic or toward emotion. In his seminal work on information processing and consumer behaviour, Vaughn (1980) enunciated thinking and feeling as representing alternate ends of a continuum, suggesting that attitude towards advertisements may involve one or the other, and that many advertisements may involve elements of both logic and emotion.

Emotional appeals can utilise fear, humour, happiness, sadness, or any other emotion within the advertising. Informational (or rational) appeals tend to use logic or develop an 'argument' related to the consumer's need for the product. Yoo & MacInnis (2005) asserts that goal of emotional appeals is to heighten positive feelings and reducing negative feelings in order to enhance the credibility of an advertiser, and to improve attitudes and behavioural intentions. For informational appeals, on the contrary, Yoo & MacInnis suggest that the focus is reversed. Instead of focusing on how feelings impact credibility, advertisers focus on how credibility influences feelings.

Consistent with prior research (Vaughn, 1980; Holmes & Crocker 1987; Yoo & MacInnis 2005), emotional gambling advertisements are more likely to use drama, mood, music and other emotion-eliciting strategies. For example, "imagine how you'd feel winning a share in the Tattsлото Superdraw...wouldn't it be nice." Informational gambling

advertisements are designed to appeal to the rationality of the receiver by using objective information describing a brand's attributes or benefits. For example, ***“with live streaming of over 30,000 sports per year, you can not only bet on, you can watch all you favourite sports at the world's best bookmaker”***.

Prior research suggests that choice of appeal is related to cognitive involvement, with emotional appeals more appropriate for low involvement conditions and rational messages are more appropriate for high involvement conditions (Holems and Croker 1987). Accordingly, we would expect to see different appeals used for different audiences, and for gambling advertisements depicting different situations, and with different goal and action orientation. In this sense, the choice of appeal is influenced by other communication strategies.

### Communication strategies

A better understanding of the different communication strategies employed by gambling advertisers will assist regulators to better target their efforts. While prior research in the fields of marketing, psychology and sociology has shown how different communication strategies impact on gambling attitudes and behaviours (McMullan & Miller, 2009, 2008, 2001; Milner & Nuske 2011), our study presents the first comprehensive classifications of communication strategies employed in a large sample of “real” advertisements aired on Australian television.

Following a multi-discipline review of communication strategies, Hallahan (1999) suggests a range of tactics that are typically used by advertisers to influence their target markets. Importantly, these different strategies provide a useful typology for understanding the persuasive tactics employed by gambling advertisers, and provide a useful framework to classify and understand gambling advertising. Each of the strategies are presented in Table 1 and discussed below.

**Table 1. Typology of communication strategies (adapted from Hallahan, 1999)**

Focus	Description	Key Sources
<b>Situations</b>	Relationships between individuals in situations found in everyday life. Situations provide structure for examining communication. Applies to discourse analysis, negotiation, and other interactions.	Bateson (1972), Goffman (1974), Putnam & Holmer (1992), Tannen (1993).
<b>Attributes</b>	Characteristics of objects and people are accentuated, whereas others are ignored, thus biasing processing of information in terms of focal attributes.	Ghanem (1997), Levin, Schneider & Gaeth (1998), McCombs & Ghanem (1998), Ries & Trout (1981), Wright & Lutz (1993).
<b>Choices</b>	Posing alternative decisions in either negative (loss) or positive (gain) terms can bias choices in situations involving uncertainty. Prospect theory suggests people will take greater risks to avoid losses than to obtain gains.	Bell, Raiffa & Tversky (1988), Kahneman & Tversky (1979, 1984), Levin, Schneider & Gaeth (1998).

<b>Actions</b>	In persuasive contexts, the probability that a person will act to attain a desired goal is influenced by whether alternatives are stated in positive or negative terms.	Maheswaran & Meyers-Levy (1990), Smith & Petty (1996).
<b>Issues</b>	Social problems and disputes can be explained in alternative terms by different parties who vie for their preferred definition a problem or situation to prevail.	Best (1995), Gamson & Modigliani (1989), Snow & Benford (1988, 1992).
<b>Responsibility</b>	Individuals tend to attribute cause of events to either internal or external factors, based on levels of stability and control. People portray their role in events consistent with their self-image in ways that maximize benefits and minimize culpability. People attribute causes to personal actions rather than systemic problems in society.	Iyengar (1991), Iyengar & Kinder (1987), Kelley (1972), Protess et al. (1991), Wallack, Dorfman, Jernigan & Themba (1993).
<b>News</b>	Media reports use familiar, culturally resonating themes to relay information about events. Sources vie for their preferred positioning via advertising and sponsorship.	Gamson (1984), Gamson et al. (1992), Ryan (1991)

In considering the communication strategies presented in Table 1, we acknowledge that not all of these strategies would necessarily apply to the gambling advertisements. The tactics that seem most relevant relate to situations, choices, actions and attributes. Interestingly, the remaining strategies (issues, responsibility and news) are more likely to be used as defensive tactics to ameliorate the impact of gambling advertising. A brief discussion of the relevant strategies is provided below:

*Situations.* Advertising messages can depict either specific or general situations. Specific advertisements are focused on promotion of a particular activity or event, whereas general situations are focused on the promotion of a brand. In this way, gambling advertising messages can be adjusted for different purposes (e.g., call-to-action, awareness building etc.). Key considerations include the wording of the message content, the tone of the message, and the creative presentation of the situation so that it is attractive to consumers.

*Attributes.* Gambling advertisements routinely position their products or services so they will be evaluated favourably, and to encourage people to respond and consume. At the level of the advertisement, attributes are closely related to situations as different attributes of the situation being depicted can be changed to create positively or negatively valenced associations that are aligned with expectations, beliefs and values of the target population. The use of pace, lighting, music to position gambling products as being fun and safe is a good example.

*Choices.* Prospect theory is a behavioural theory explaining how people decide between alternatives involving risk. This theory suggests that people face difficulty when trying to make choices that involve even moderate levels of uncertainty. In response, gambling

advertising tends to employ positive goal orientation. This promotional strategy works in concert with a gambler's tendency to take greater risks to avoid losses.

*Actions.* While all advertising is ultimately concerned with encouraging some desired course of action, this strategy deals with higher order motivations that pertain specifically to the decision of when and how to act. Accordingly, this strategy is dominated by a temporal dimension. For instance, gambling advertising may emphasize the urgency of a particular action, encouraging punters not to "miss out."

## Methodology

In this study we sought to understand how different communication strategies are employed by gambling advertisers. To do this, we undertook a content analysis of a sample of actual advertisements appearing on Australian television.

### The data collection and sample selection

Copies of relevant television advertising were sourced from Commercial Monitor's AdRegister and AdReview archives. These archives contain details on more than 16 million advertisements from across 60 countries, including 500,000 Australian advertisements. The dataset was collected for advertisements between 2000 and 2014 and included in total 12,093 unique advertisements.

Table 2 provides a snapshot of changes in the pattern in gambling advertisements between 2000 and 2014. We can see that radio advertisements have been more or less steady in early years, but have been declining rapidly since 2010. On the other hand, internet advertising is a recent phenomenon and has been rising abruptly. Based on the data it could be speculated that internet advertising may be replacing radio as a channel for gambling advertising. Television advertising, on the other hand, has shown strong growth since 2003. Due to resource limitations and the limited duration of the study, we thus decided to focus on television advertising.

**Table 2. Distribution of gambling advertisements**

Year	TV	Radio	Print	Internet	TOTAL	%
2000	0	561	43	0	604	5.0
2001	0	518	83	0	601	5.0
2002	3	346	20	0	369	3.1
2003	40	262	3	0	305	2.5
2004	12	140	2	0	154	1.3
2005	10	28	0	0	38	0.3
2006	27	9	5	0	41	0.3
2007	86	5	1	0	92	0.8



<b>2008</b>	203	55	242	0	500	4.1
<b>2009</b>	327	191	2912	0	3430	28.4
<b>2010</b>	204	161	2365	19	2749	22.7
<b>2011</b>	221	122	1099	50	1492	12.3
<b>2012</b>	224	85	406	110	825	6.8
<b>2013</b>	218	67	3	240	528	4.4
<b>2014</b>	280	30	3	120	365	3.0
<b>TOTAL</b>	<b>1787</b>	<b>2580</b>	<b>7187</b>	<b>539</b>	<b>12093</b>	<b>100.0</b>

The 280 television advertisements focused on a range of gambling activities, including online and mobile betting, competitions, raffles and lotteries. The advertisements were placed by over 20 different advertisers and were screened between April and November 2014. Both advertisement manifestation and latent message attributes were examined from using both quantitative content analysis and qualitative textual analysis.

### The coding and analysis process

Content analysis was deemed to be the most appropriate tool for analysing the advertisements as it is frequently used in media studies to make sense of large amounts of data. Content analysis is “a research technique for the objective, systematic and quantitative description of the manifest content of communication” (Berelson 1952, p. 363). This approach seeks to uncover latent and manifest themes that are encoded within advertisements.

Table 3 presents the codebook used to facilitate the content analysis of the sample advertisements. The main objective was to capture information on the strategic use of different communication tactics. Specifically, the analysis focused on the appeal, intended audience, depiction of situation and action, and the goal orientation used within gambling advertisements.

**Table 3. Codebook for advertising communication strategies**

Details	Types	Description	Source
<b>Appeal</b>	Informational/Rational Emotional Rational and Emotional	Based on Vaughn (1980) advertisement types, we analysed gambling advertisements based on three main types	Vaughn (1980)
<b>Intended audience</b>	Potential gamblers Existing gamblers Sports fans Lottery players Young males Other	The audience for the advertisements were divided into each of these categories	McMullan & Miller (2009)

<b>Situation</b>	Tailored (eg. Specific event) General	Some were very focused on particular events (eg. AFL Grand Final) whilst others were more general (lifestyle)	McMullan & Miller (2009)
<b>Action</b>	Immediate (can take action now) Not immediate (eg. In the lead up to Melbourne Cup)	Advertisements were reviewed on the immediacy of action possible from the incentive/promotion	McMullan & Miller (2009)
<b>Goal orientation</b>	Incentive/promotion Normalisation (seen as normal) Winning Community benefits Escapism	Referred to focal narratives in the gambling advertisement such as winning, normalization, escapism, and community benefits.	McMullan & Miller (2009, 2001, 2012); Milner & Nuske (2012); Thomas et al. (2011);

The coding process followed a prior study of goal orientation in gambling advertising in Canada (McMullan & Miller, 2009). However, our study extended this prior work by inclusion of Vaughn's (1980) advertisement appeal (emotional versus informational/rational), and McMullan & Miller's (2009, 2001, and 2012) depiction of situations and call to action. We also analysed a range of other variables that have been shown to have an impact on advertising design in other countries (McMullan & Miller, 2009), including scripting, voiceover, colours, vocabulary, and so on. However, this information is outside of the scope of the present study.

An important consideration relating to the application of content analysis is ensuring reliability and validity (McQuail, 2005; Graneheim & Lundman, 2004). A research assistant was employed to undertake initial coding. Following this coding, a member of the research team verified all the coding, and a second member of the research team randomly verified the codes. At the end of each cycle, a comparison was made between the observations, recording commonalities and differences. This gave the researchers more detailed information on major (those which were observed by both researchers) and more minor (one researcher only) aspects. A final researcher reviewed the observations without watching the advertisements to identify any unusual observations.

This provided the researchers with an objective analysis of the observations. The average initial agreement among the researchers was 89%, with the coding for the remaining 11% resolved through discussion. This research attempts to control researcher bias by employing multiple researchers in the analysis stage, and inter-coder reliability was assessed ensuring that the coders have correctly identified the themes in each of the subcategories within the coding matrix.

## Key Findings

### Descriptive information on advertisements

Analysis of 280 television advertisements identified a broad range of gambling activities. One quarter of the advertisements analysed (25.7%) were promoting lotteries, raffles or competitions. The most frequent advertisements were from Royal Melbourne Hospital Home Lottery (11.1%), Powerball (6.1%) and Tattslotto Superdraw (5.4%). The advertisements were placed by over 20 different advertisers and were screened on Australian free-to-air television stations between April and November in 2014. The most popular months were October (36.4%), followed by April (15.4%) and June (13.2%).

The length of advertisements ranged from less than 10 seconds to 120 seconds (2 minutes), with the majority either 15 seconds (52%) or 30 seconds long (35%). The total screening time was just under 100 minutes. The majority (94%) of the advertisements used a male voiceover, utilising a loud voice with an accent. The colour scheme used was mostly bright with colourful images (e.g. images of prizes scrolling through ad, clips of races, celebrity appearances). The presence of humour was profound, with 29% of advertisements including humour. The vocabulary used was conversational to make it more believable and align with everyday life.

### Communication strategies

The content analysis revealed many different combinations of communicative strategies and persuasive techniques.

*Appeal.* Advertisements were reviewed for evidence of emotional, informational/rational or combined appeals (see Table 4). The most popular appeal observed within the sample of advertisements was informational (67%). For example, many of the advertisements promoted that their company offered the best odds and in other ways met the needs of the gamblers, and that they were all part of the same gambling community or tribe. Some of the relevant phrases include 'what punters want' (Tom Waterhouse), 'bet better' (Ladbrokes), 'there's no better bet than a Sportingbet' (Sportingbet), and 'by punters for punters' (Unibet).

**Table 4. Appeal used within advertisements**

Appeal	Percent	Examples
Emotional	16%	Imagery of man in suit at races and images of individual horses and tracks and finishes with placing a bet on smart phone. This is not a game and you're not a spectator. You don't just follow riders and races, you follow your instincts..... But when the time comes, back yourself... download the app and join today. Imagine how you'd feel... winning a share n Tattslotto Superdraw... wouldn't it be nice.

Informational / Rational	67%	<p>Images of different sports being played, and then the images on a table, with voiceover: With the live streaming of over 30,000 sports per year, you can not only bet on, you can now watch all your favourite sports at the world's best bookmaker. Download the app and join today.</p> <p>Linked to Sportsbet 'handholding' ad. In this ad young male finds his phone in his pocket while still holding hands... Voiceover text: It's gotta be in there somewhere... Yep, it's our AFL Finals Special ... Head to Head bets, if your team lead at 3/4 time but lose, money back up to 100 bucks. Get into BETember - Sports BETember.</p>
Emotional and informational combined	16%	<p>Man in suit in old fashioned office about to eat a meat pie: footy final. Voiceover text: Footy finals, and that means cracking offers: we're giving all BetEasy members \$50 on the grand final of your choice... just download the app, no deposit required.</p> <p>Party setting (bbq) then text over grass at race track. Image of man on his smart phone. 'Isn't spring just the best, cos with Sportsbet at the Caulfield Cup.... Money back up to \$100 bucks. Download us.</p>

The second most popular advertisements featured an emotional appeal (16%). These advertisements highlighted not only the impact that winning could have on the gambler's life ('Imagine how you'd feel,' 'what's the first thing you'd do the moment you win'), but in the case of raffles, the impact it could have on those close to the gambler (e.g., 'most prizes, best odds, saving lives,' 'support people with a disability, and buy a \$10 ticket today'). Overall, these advertisements had an optimistic feel, prompting viewers to think 'what if?'

*Intended audience.* Advertisements were classified into six audience groups (see Table 5). From this analysis, it was evident that advertisements were targeted at both established (46%) and established and potential gamblers (41%). Other groups that were targeted included sports fans (33%), lottery players (11%), and young males (6%). It is noteworthy that advertisements focused on sports betting also tended to target experienced gamblers and required a degree of knowledge or skill (e.g., 'head to head bets,' 'best odds available'). Conversely, advertisements promoting lotteries were targeted to less experienced gamblers, as there was generally no level of skill or knowledge required to participate in this type of gambling. These advertisements tended to emphasize luck (e.g., 'buy your ticket to win,' 'you could win \$10 million').

**Table 5. Target audience for commercial gambling TV ads**

Audience	Percent	Examples
Established gamblers	46%	Sportingbet bet Warney \$10,000 to take 50 paint balls ... now here's an offer that will really hit the mark for you footy fans. Sportingbet will give you your money back for the Pies vs Dockers clash ..... If your team kicks 12 goals or more but loses you'll get your money back... so download the app.... There's no better bet than a Sportingbet.

Established and potential gamblers	41%	The ... lottery is already over 50% sold ..... don't miss out... the most prizes, the best odds, saving lives. .... Visit us online or call now. Over 50% of the tickets are already gone.
Sports fans	33%	Tom Waterhouse.com gives you a first four money-back guarantee. Back any horse in the Rosehill Guineas - and if your runner comes 2nd, 3rd or 4th you'll get your money-back ... Only at Tom Waterhouse.com. What punters want.
Lottery players	11%	Celebrate 63 years of supporting people with a disability with the 63rd annual Endeavour Foundation lottery [Long history of Endeavour using emotive terms and images. Beautiful views and images of the prize home; dramatic music as background-] 63rd Anniversary Lottery... ... every ticket supports people with a disability... buy your \$10 lottery today at [website address]
Young males	6%	Young male speaks to screen: It's Ladbrokes Shout Lads: Flemington this Saturday. Every race. Cash refund back into your betting account if you run second to the starting price favourite... . Images of a horse race in the background.
Other (specific groups e.g. baby boomer, race/theatre goers, young couples, patriots)	8%	Male and female: 'What's changed since we won Powerball?... ' [on boat] Voiceover: This Thursday Powerball has jackpotted to \$15 million - what would you change with \$15 million?

Note: the sum of percentages exceeds 100% because advertisements could be classified into more than one category.

*Situation and action.* Advertising tailored to a specific event (e.g. Melbourne cup, Powerball jackpot) accounted for 91% of the sample, with only 9% aimed at creating a positive general attitude of gambling among potential and established gamblers. Popular tailored approaches focused on particular events (e.g., AFL Grand Final) whilst others were more general (lifestyle). The majority of advertisements (80%) also focused on a non-immediate response (e.g., 'for the latest offer,' 'download the app to join'). Table 6 illustrates the communication strategies observed within the sample of television advertisements.

**Table 6. Depiction of situation and action**

Depiction	Percent	Examples
Situations	Tailored to a specific event – 91%	This is your last chance. The early bird deadline is midnight tomorrow.... Time and tickets are running out. Visit us online or call now.
	General – 9%	Wide World of Sports, brought to you by Sportsbet's spring racing specials. Spring - the best time of the year. Vision of the Sportsbet app being used on an iPhone, and then text: Sportsbet.

Actions	Immediate – 20%	Only hours remain. The early bird deadline is midnight tonight.... Don't miss out - only hours remain. Get your tickets now.
	Not immediate – 80%	Female in black shirt, followed by blocks she taps to introduce offers and information.: 'Now for the latest offer from the Tab....'Place an AFL head to head bet online or on your mobile this weekend .... and If your team leads at half time but loses we'll return your stake as a bonus bet of up to \$50. Only with the Tab.'

*Goal orientation.* The most common type of goal orientation was incentive (45%), followed by normalisation (26%) and winning (26%). Advertisements focused on incentives tended to highlight specific opportunities (e.g., 'refund if your horse runs second,' 'If your team kicks 12 goals or more but loses you'll get your money back'). Popular normalisation advertisements presented normal people having fun with friends at gaming locations, while winning advertisements promoted sophistication and confidence. Tactics included a mature voiceover, understated graphics and colour scheme, and the text (e.g., 'Take on Tom'). Information on goal orientation is presented in Table 7.

**Table 7. Goal observed within advertisements**

Goal	Percent	Examples
Incentive/ promotion	45%	Cox Plate Day (refund if horse runs second) special; man is talking loudly on phone while at the races and then info about betting special appears in blue text (white background).
Normalisation	26%	Man in dinner suit speaking as if a newsreader; giving Brownlow Medal stats and describing form of each player; tells viewers they can check the odds or bet live.
Winning	26%	Male and female: 'Has our Powerball win changed us?... ' [Date nights are a bit more romantic - image of young couple in hot air balloon with champagne] Voiceover: This Thursday Powerball has jackpotted to \$25million - what would you change with \$25 million?
Community benefits	2%	Images show community projects and prizes... There's 212 prizes... buy your ticket today from your local group or online and support your local community.
Escapism	1%	Imagine how you'd feel... Tattslotto Superdraw

## Relationships among the different communication strategies

From the above, it is apparent that relationships exist between different communication strategies. Information on the cross-tabular relationships among the different communication strategies is provided in Appendix 4. For ease of interpretation we have colour coded some of the 150 pair-wise comparisons, with green shading used to denote the most popular combination with each category. The frequencies within each box total to 100%.

From this data, we see that the most popular combination overall involved the promotion of a tailored advertisement (e.g., a specific sporting event) to established and potential

gamblers (81.8%). Other popular combinations included the use of a non-immediate call-to-action with a tailored advertisement (73.2%), and the use of non-immediate call-to-action with established and potential gamblers.

Another interesting aspect of the data presented in Appendix 4, is that it also shows where gambling advertisers avoid the combination of certain communication strategies. For instance, we can see that a large number (75.3%) of the potential combinations had frequencies of lower than 5%, with 13.3% having frequencies of less than 1%.

Reading down or across the table is a useful way to develop an understanding of the most popular combinations of strategies used by advertisers. This approach is helpful in identifying key differences across the categories of the different strategies. For instance, looking at the different appeal categories, we see the following profiles emerge:

- Emotional appeals - most commonly used with established and potential gamblers, tailored situation, non-immediate action, oriented towards winning.
- Informational appeals - most commonly used with established and potential gamblers, tailored situation, non-immediate action, oriented towards incentives.
- Information and emotional appeals - most commonly used with established and potential gamblers, tailored situation, non-immediate action, oriented towards normalisation.

This analysis shows that the main strategic difference in the use of the different appeals relates to the goal orientation. Applying a similar approach to analyse audience, situation and action reveals similar overall patterns, with goal orientation often seen to be the key differentiator. However, caution should be exercised as some cell frequencies are quite low across the different goal orientation categories, suggesting that the differences may not be statistically significant.

## Discussion

### **What are the different communication strategies adopted by Australian gambling advertisers?**

The analysis of communication strategies presented in this study highlights how different tactics are used within gambling advertisements. Our findings concur with general advertising theory, which among other things, highlights the importance of employing a variety of tactics to persuade members of a target population to take action.

The modal approach to gambling advertising involved the use of an informational appeal (67%), focused on experience gamblers (46%), a non-immediate call-to-action (80%), and used an incentive goal orientation. This dominance of these communication strategies is consistent with information processing theory (Holems & Croker 1987), which suggests

that more experienced gamblers are likely to have a higher involvement. Such gamblers would also be seeking specific information (informational appeal), are focused on the value proposition (incentive goal), and are more considered in their gambling decisions as they compare newly acquired information with what they already know (non-immediate call-to-action).

An interesting observation relates to the targeting of vulnerable persons. The relatively balanced audience, established gamblers (46%) and established and potential gamblers (41%), suggests that advertisers are not specifically targeting problem gamblers. Likewise, only a small percentage of advertisements targeted younger males (6%). This would indicate that there is insufficient evidence to suggest that advertising was intentionally targeting vulnerable persons and problem gamblers.

#### **Recommendation 5**

Regulators should take advantage of the findings on communication strategies to develop better targeted, more effective counter advertising.

### **How are the different types of communication strategies related?**

Detailed information is provided in Appendix 4 to show how different combinations of communication strategies are related. Two interesting observations emerge from this data. First, advertisers use a combination of different tactics within their advertisements and that these tactics conform to what we understand about information processing theory. A good illustration of this was presented above in relation to the experience gamblers. It is noteworthy that the cross-tabulations reinforce this observation, with the associated pair-wise comparisons observed to dominate their respective groups.

Second, the findings emphasize the important role of goal orientation in understanding the communication strategies of gambling advertisers. This is a particularly important finding as it suggests that legislative interventions targeting the underlying goal motive could be very effective. Drawing on the prospect theory of Kahneman & Tversky (1979), we might anticipate that a negatively framed warning message could be an effective strategy to counter a positively-oriented goal such as the use of incentives.

#### **Recommendation 6**

Regulators should take advantage of the findings on communication strategies to develop better targeted, more effective regulatory interventions (e.g., warning messages).



## Study 3

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The aim of the third and final study is to better understand how the framing of warning messages influences perceptions of gambling advertisements. In this way, the final study responds to some of the recommendations highlighted in study 1 and 2. From Study 1, we can see that the use of warning messages has emerged as a popular strategy for regulators. However, to date there has been little research conducted to evaluate the efficacy of this strategy.

This study will use the information gathered on advertising communication strategies in the Study 2 to select a range of sample advertisements that were analysed to determine:

- What aspect of the communication strategy has the greatest impact on gambling preferences?
- How does warning message framing impact on perceptions of gambling advertising?
- Does the interaction of warning messages and advertising strategy vary according to vulnerability?

Our research addresses these questions through the use of an experiment to examine the interaction among warning messages and advertising communication strategies employed by commercial organisations in three states of Australia.

## Conceptual development

### The mechanics of framing

Frames reflect judgments made by a message author, whether intentional or unintentional. Some common framing strategies involve putting information in either a positive or negative light (valence framing), or focusing on the impact of changing words or phrases to achieve greater emphasis on one or more elements of a message (semantic framing). Drawing on the work of Hallahan (1999), we see that framing can be viewed as a window or portrait frame drawn around information, which seeks to delimit the subject matter and focus attention on key elements within.

In this way, framing involves decisions regarding what information to include, exclude and emphasize (Entman 1993). Pan & Kosicki (1993) suggest that framing can be evidenced in the structures within a message, including: syntactical structures (stable patterns of arranging words and phrases in a text), script structures (the orderly sequencing of events in a text in a predictable or expected pattern), thematic structures (the presence of propositions or hypotheses that explain the relations between elements within a text), and rhetorical structures (subtly suggest how a text should be interpreted). Gamson & Modigliani (1989) add that these framing devices can include metaphors and similes,

familiar exemplars and illustrations, provocative language and descriptors, catchphrases, and visual imagery.

At a cognitive level, framing works by creating bias in the way that individuals process information. The literature presents two dominant mechanisms to explain this process. The first suggests that framing provides contextual cues that guide decision making and inferences drawn from messages. Kahneman & Tversky (1979) assert that the simple positive-versus-negative framing of a decision acts as a cognitive heuristic to guide decisions in situations involving uncertainty or risk.

This view is consistent with the impression formation literature that suggests negative information attracts more attention (Pratto & John, 1991) and is weighted more heavily than positive information (Hamilton & Zanna, 1972). The operation of this mechanism is also consistent with the elaboration likelihood model (Petty & Cacioppo, 1986) where negative framing serves as a peripheral cue in processing (Smith & Petty, 1996). This is important for the role of framing in advertising, as negative framing might prompt people to think more about a message, and engage in deeper, more meaningful information processing and message elaboration. This finding is important as it suggests that the effectiveness of message framing is strongly linked to the level of audience involvement (Maheswaran & Meyers-Levy, 1990).

The second dominant mechanism posited to explain framing is priming. Bartlett (1932) was among the first to characterise memory as relating to the structured way in which knowledge and information is organised. Within such structures, framing primes the extraction, arrangement and interpretation of new information (Fiske & Taylor, 1984). The priming mechanism involves the use of association and expectation to make inferences about information, and to impute meaning not manifested in the message itself (Hallahan, 1999).

Accordingly, framing affects cognitive processing by selectively influencing which areas of memory are activated to interpret a particular message. Priming effects can be conscious, such as when a person purposefully uses message cues to attempt to retrieve stored knowledge from memory. Priming effects can also be unconscious or automatic, such as when a person categorises a topic or message during the pre-attention phase of processing and then processes information using rules that are considered appropriate to the situation or context (Bargh, 1988).

### **Warning message framing**

From the above discussion, we can see that the meaning of framing can vary based on the research question, the level of analysis, or the underlying psychological process of interest. The emphasis on providing context within which information is presented and processed allows framing to be applied across a wide range of communication settings, including gambling advertising.

Within the present study, we are particularly interested in the role that warning message framing plays in ameliorating the influence of gambling communication strategies. While there is a dearth of research examining the use of gambling warning messages within television advertising, there is an emerging body of literature within electronic gaming machines. Even though the nature and use of warning messages within electronic gaming machines is very different, they usually involve pop up messages that occupy a larger portion of the screen, and are more legible than messages used within television gambling advertisements, evidence from a number of laboratory experiments suggests that the use of warning messages can increase awareness of gambling risks (Steenbergh, Whelan, Meyers, May & Floyd, 2004). This finding concurs with more recent work by Munoz, Chebat & Suissa (2010) who found that warning messages directly impacted on information processing, with negatively framed warning messages more likely to alter perceptions of participants in a laboratory experiment involving the use of video lottery terminals.

Gainsbury, Aro, Ball, Tobar & Russell (2015), however, report different findings. Utilising a field experiment to examine the impact of warning message content on gambling behaviour, their study found that warning messages focused on self-appraisal (positively) framed messages were more frequently recalled than informative (negatively) framed messages, but that negatively framed messages were more influential. Interestingly, their study found no significant differences in either recall or influence across different categories of gambling risk.

The mixed findings underscore the complexity of this issue, and reflect the findings on the use of warning messages in other compulsive consumption categories. For instance, a recent meta-analysis of the effectiveness of warning labels demonstrates that warning messages do influence recall and behaviour, but that this effect was sensitive to a range of moderating effects including the nature and presentation of the warning message, product and service type, and the perceived cost of compliance (Argo & Main, 2004). Our research will add to this literature by examining the mitigating impact of warning message valence on behavioural response to real television advertisements of gambling products and services.

## Methodology

This study utilised a single cross sectional method to obtain the data for our study. The data was collected using an online survey of people with different gambling severity from NSW, Victoria and Queensland. With support from Qualtrics Australia, our aim was to obtain a balanced sample across the four gambling categories of the Canadian Problem Gambling Severity Index (CPGSI, see Appendix 5). An initial cell quota of 50 respondents was targeted. Due to the inability to access a reference panel of regular gamblers, we needed to use a sample refinement strategy based on a general population panel.

This resulted in an initial sample of 5,061 respondents, however, this was reduced to 964 (19%) after screening and deletion of suspicious responses from those who completed the survey in too short a time, or exhibited high levels of response bias (e.g., end-piling). Descriptive details of the resulting sample are presented later in this report.

## Survey design

The main feature of the online survey was a discrete choice experiment which was used to examine the interaction between warning message framing and the communication strategies employed by gambling advertisers (Louviere, Hensher & Swait, 2000). Discrete choice experiments (DCEs) consist of several choice sets, each containing two or more options. Participants are shown the choice sets and are asked which option they prefer. Each option is typically described by a set of attributes and each attribute can take one or more levels (Street, Burgess & Louviere, 2005).

In our study we presented each respondent with a series of choices between pairs of advertisements, where each advertisement was selected based on the presence or absence of some theoretically determined variable. Respondents were first asked to answer some questions about the experimental manipulations, before answering a conditional choice question about which of the two advertisements was more likely to make them want to gamble. They were then asked to answer an unconditional choice question where they could indicate that neither advertisement would induce gambling behaviour.

In keeping with Lancaster's (1966) characteristic-based theory of consumer choice, the choice modelling approach is based on the assumption that consumers base their purchase decisions on a comparison of attributes or features relevant to the selection of a product over rival products. A list of the variables used within the DCE along with their associated levels is presented in Table 8. The resulting choices are then decomposed using a conditional logit model to uncover the preferences for each experimental variable and its associated levels.

**Table 8. Description of variables used in the choice experiment**

Variables	Level 1	Level 2
Appeal	Informational/rational	Emotional
Situation	Tailored	General
Action	Immediate	Not immediate
Goal	Incentives	Normalisation
Warning Message (Framing)	Positive	Negative

The discrete choice experiment asked respondents to consider and choose between different advertisements representing combinations of the different levels of the variables shown in Table 7. In an effort to avoid problems with model identification, the levels were

chosen based on the two most popular categories within each communication strategy examined in study 2. In addition to asking respondents which advert was more likely to induce gambling, we also collected demographic data and included questions to test the efficacy of the experimental manipulations.

## **Experimental design**

An experimental design is required to identify the choice options based on a systematic manipulation of the experimental variables. A design that encompasses all possible combinations of attributes and their respective levels is called a factorial design (Haider & Ewing, 1990). However, as too many options may place undue demands on the cognitive abilities of respondents, optimal design theory is used to select some fraction of the complete factorial design, such that the resulting design retains strong statistical properties and allows for the estimation of the preferences free of confounding errors.

Drawing on the work of Street & Burgess (2007), our study used a D-optimal design to select a fraction that maximises the differences between the levels of the experimental variables used within the different choice tasks. Using the procedures provided by Street & Burgess (2007), a fractional factorial design with 100% efficiency was obtained (see Appendix 6 and 7).

## **Selection of the advertisements**

Based on the experimental design shown in Appendix 6, and the classification of advertisements from study 2, we were able to identify a representative set of advertisements representing each choice set. In selecting the final set of 16 advertisements, we focused on selecting advertisements that represented the most extreme examples based on the selection criteria. This approach was adopted for two reasons. First, it was perceived to be conceptually consistent with the principles of the D-optimal design which selects a fraction of a full factorial design based on maximising the difference between the levels of the experimental variables. Second, the approach increases the likelihood that the experimental manipulations would be discernible.

A manipulation check was used to test the efficacy of the advertisement selection. This involved asking respondents to indicate which advertisement in each pair was more emotional, elicited a more immediate response, emphasized benefits (e.g., winning), and had a positively framed warning message. We did not include a manipulation test for the framing of the situation (i.e., tailored or general) as pre-testing demonstrated that this question was redundant as respondents could easily discern when an advertisement was general in nature, or focused on a specific activity. Analysis of the data relating to the manipulation checks revealed that 65.6% of the manipulations were correctly identified by respondents. This result is highly statistically significant when compared to the null hypotheses of equal variance ( $z=9.687$ ,  $p<0.0001$ ).

## Key Findings

Descriptive analysis of the 964 respondents from the three focal states is provided in Table 9. This analysis presents a demographic profile of the respondents. From this table we can see that the modal respondent was male (53.8%), middle aged (35-49 years), in a couple with children (34.3%), unlikely to be Indigenous (97.2%) or speak a language other than English at home (79.7%), had a trade or diploma qualification (31.5%), worked full-time (37.8%) in a managerial position (17.5%). The modal respondent was also a resident of Victoria and had a family income of \$800-\$999 a week.

**Table 9. Respondent Profile**

<b>Gender</b>	<b>%</b>	<b>Occupation</b>	<b>%</b>
Male	53.8	Manager	17.5
Female	46.2	Professional	12.6
<b>Age</b>	<b>%</b>	Technical/trades worker	7.7
18-24	10.5	Community/personal worker	2.1
25-34	21.7	Clerical/administrative worker	13.3
35-49	30.8	Sales worker	4.2
50-64	27.3	Machinery operator/driver	1.4
65+	9.8	Labourer	6.3
<b>Household structure</b>	<b>%</b>	Other	35.0
Couple with child/ren	34.3	<b>Household income</b>	<b>%</b>
One parent family	4.2	No income	2.8
Couple without child/ren	27.3	\$1 - 149 (\$1 - \$7,799)	4.9
Group household (not related)	7.7	\$150 - \$249 (\$7,800 - \$12,999)	1.4
Lone person	16.1	\$250 - \$349 (\$13,000 - \$18,199)	4.9
Other	10.5	\$350 - \$499 (\$18,200 - \$25,999)	9.8
<b>Ethnicity</b>	<b>%</b>	\$500 - \$649 (\$26,000 - \$33,799)	7.0
ATSI	2.8	\$650 - \$799 (\$33,800 - \$42,599)	4.9
NESB	20.3	\$800 - \$999 (\$41,600 - \$51,999)	9.8
<b>Education</b>	<b>%</b>	\$1,000 - \$1,199 (\$52,000 - \$62,399)	7.0
No schooling	0.7	\$1,200 - \$1,399 (\$62,400 - \$72,799)	4.9
Year 9 or less	1.4	\$1,400 - \$1,699 (\$72,800 - \$88,399)	8.4
Year 10	14.0	\$1,700 - \$1,999 (\$88,400 - \$103,999)	6.3
Year 12	19.6	\$2,000 - \$2,499 (\$104,000 - \$129,999)	7.7
Vocational certificate or trade	31.5	\$2,500 - \$2,999 (\$130,000 - \$155,999)	6.3
Bachelor's degree	23.1	\$3,000 - \$3,499 (\$156,000 - \$181,999)	2.1
Post-graduate degree	8.4	\$3,500 - \$3,999 (\$182,000 - \$207,999)	1.4
Other	1.4	\$4,000 or more (\$208,000 or more)	1.4

<b>Employment</b>	<b>%</b>	Prefer not to say	9.1
Full-time	37.8	<b>State of residence</b>	<b>%</b>
Part-time	21.0	New South Wales	27.3
Unemployed	12.6	Victoria	42.7
Not in workforce	19.6	Queensland	30.1
Other	9.1		

Table 10 provides information on the gambling profile of our respondents. From this data, we can see that the most popular gambling frequency was 1-3 times per month, with lotteries (69.2%) the most popular gambling activity. While an effort was made to obtain balance across the four gambling categories, we can see that the sample is slightly skewed in favour of problem gamblers (30.8%).

**Table 10. Gambling Profile**

<b>Gambling frequency</b>	<b>%</b>	<b>Problem gambling severity</b>	<b>%</b>
Less than once per month	25.9	Non-problem gamblers	23.1
1-3 times per month	35.0	Low risk gamblers	21.0
Nearly once a week to three times per week	32.2	Moderate risk gamblers	25.2
More than three times per week	7.0	Problem gamblers	30.8
<b>Gambling preferences</b>	<b>%</b>	<b>Gambling preferences (Cont.)</b>	<b>%</b>
Pokies/electronic gambling	67.8	Lotteries	69.2
Table games	28.7	Scratch tickets	49.7
Racing	64.3	Bingo	12.6
Sports and events	41.3	Competitions for money	26.6
Keno	28.0	Other	1.4

## Results from DCE analysis

The DCE analysis was undertaken with Latent Gold Choice version 5.0 using responses to the unconditional choice question. This software allows for the simultaneous estimation of a conditional logit model and a latent class model. This analysis revealed that the data supported a two-segment solution over a single segment model ( $-2LL = 332.62$ ,  $p < 0.001$ ). The analysis shows one larger segment representing 73% of the sample, and with all five experimental variables found to vary significantly within and across the two segments. The relevant output from this analysis is presented in Table 11, along with parameter estimates for the warning message framing and an active covariate capturing the four problem gambling categories of the CPGSI.

From this analysis, we observed that the communications strategies that dominated segment 1 related most to the call to action ( $\beta=0.296$ ,  $z=16.562$ ), followed by the type of appeal ( $\beta=0.202$ ,  $z=12.877$ ), situation ( $\beta=0.172$ ,  $z=9.772$ ), and goal of the advertisement ( $\beta=0.136$ ,  $z=7.140$ ). The communications strategies that dominated segment 2 related most to appeal ( $\beta=0.296$ ,  $z=16.562$ ), followed by the type of situation ( $\beta=0.202$ ,  $z=12.877$ ), goal ( $\beta=0.172$ ,  $z=9.772$ ), and the call to action ( $\beta=0.136$ ,  $z=7.140$ ).

The warning message framing was also observed to have a significant impact on gambling preferences of segment 1 ( $\beta=0.096$ ,  $z=5.628$ ) and segment 2 ( $\beta=2.205$ ,  $z=3.109$ ). However, while the different problem gambling categories did not account for statistically significant differences in the parameter estimates of the two segment specific models (Wald=6.81,  $p>0.05$ ), they are still useful in describing the two segments.

**Table 11. DCE parameter estimates**

	Segment 1		Segment 2		Between Segments	
Segment size	73%		27%			
Variables	$\beta$	z-value	$\beta$	z-value	Wald	p-value
<b>Appeal</b>						
<i>Informational/ rational</i>	-0.20	-12.88	-0.50	-9.59	352.18	3.3e-77
<i>Emotional</i>	0.20	12.88	0.50	9.59		
<b>Situation</b>						
<i>Tailored</i>	-0.17	-9.77	-2.08	-2.93	104.92	1.6e-23
<i>General</i>	0.17	9.77	2.08	2.93		
<b>Action</b>						
<i>Immediate</i>	-0.30	-16.56	1.76	2.48	279.25	2.3e-61
<i>Not immediate</i>	0.30	16.56	-1.76	-2.48		
<b>Goal</b>						
<i>Incentives</i>	-0.14	-7.14	-1.91	-2.70	59.62	1.1e-13
<i>Normalisation</i>	0.14	7.14	1.91	2.70		
<b>Warning messages</b>						
<i>Positive</i>	-0.10	-5.63	2.21	3.11	41.59	9.3e-10
<i>Negative</i>	0.10	5.63	-2.21	-3.11		
<b>CPGSI categories</b>						
<i>Non Problem</i>	-0.03	-0.31	0.03	0.31	6.81	0.08
<i>Low Risk</i>	-0.13	-1.94	0.13	1.94		
<i>Moderate Risk</i>	0.03	0.35	-0.03	-0.35		
<i>Problem Gambler</i>	0.13	1.76	-0.13	-1.76		

Log-likelihood (LL) = -7185.76, Psuedo  $R^2$  = 0.21, -2LL = 332.62 (p-value = 0.00).



To simplify interpretation, we used a linear transformation to identify the relative importance of each variable within the segments and between the segments. The results are presented in Table 12. The data presented allows us to drill down and examine these differences at the individual levels of each experimental variable. We can see from this data that segment 1 was strongly influenced by advertisements promoting a non-immediate call to action, using an emotional appeal, depicting general gambling situations, promoting gambling as normal, and utilising a negative framing strategy. Segment 2, on the other hand, was characterised by far stronger within-segment differences, highlighting the importance of advertisements that used positively framed warning messages, depicted general gambling situations, promoted gambling as normal, had an immediate call to action, and used an emotional appeal. Segment 1 was also dominated by problem gamblers, whereas segment 2 was more likely to contain moderate gamblers.

The between segment analysis shows that when taking the segment differences into account, segment 1 dominated segment 2 for all preferences, except those relating to an immediate call to action. Another interesting aspect of the findings presented in Table 11 and 12 is that this analysis shows that segment 2 is far more sensitive to level changes than segment 1, with the preferences in segment 2 exhibiting quite stark contrasts.

**Table 12. Segment profiles**

Variables	Within Segment		Between Segment	
	Segment 1	Segment 2	Segment 1	Segment 2
<b>Appeal</b>				
<i>Informational/rational</i>	0.40	0.27	0.80	0.20
<i>Emotional</i>	0.60	0.73	0.68	0.32
<b>Situation</b>				
<i>Tailored</i>	0.42	0.02	0.99	0.01
<i>General</i>	0.58	0.98	0.61	0.39
<b>Action</b>				
<i>Immediate</i>	0.36	0.97	0.49	0.51
<i>Not immediate</i>	0.64	0.03	0.98	0.02
<b>Goal</b>				
<i>Incentives</i>	0.43	0.02	0.98	0.02
<i>Normalisation</i>	0.57	0.98	0.60	0.40
<b>Warning messages</b>				
<i>Positive</i>	0.45	0.99	0.54	0.46
<i>Negative</i>	0.55	0.01	0.99	0.01

CPGSI categories				
<i>Non-problem</i>	0.15	0.14	0.74	0.26
<i>Low risk</i>	0.11	0.12	0.71	0.29
<i>Moderate risk</i>	0.32	0.42	0.67	0.33
<i>Problem gambler</i>	0.42	0.32	0.77	0.23

We also modelled a range of other covariates in addition to CPGSI category (see Appendix 8 and 9). This included location (state of residence), gender, age, indigeneity, ethnicity, household structure, education, employment status, occupation, and household income. While none of these variables was observed to differ in a statistically significant way across segments when modelled actively (i.e., included within the model as additional predictor variables), they do provide some value in terms of describing the segments when modelled inactively.

A complete overview of descriptive covariate information is provided in Appendix 8. From this information, we can see that the segment profiles are consistent with the only notable differences in the area of household structure and CPGSI category. Segment 1 was dominated by couples with children, while segment 2 by couples without children. Likewise, segment 1 was dominated by problem gamblers whereas segment 2 had the highest proportion of moderate risk gamblers. However, these differences need to be interpreted with caution as the associated Wald scores were not statistically significant.

## Discussion

### What aspect of the communication strategy has the greatest impact on gambling preferences?

The findings from Study 3 highlight the appeal of different communication strategies for different segments of the population. This aligns with general advertising theory, which among other things, highlights that individuals employ different cognitive processes in their evaluation and response to different communication stimuli (Bargh, 1988; Kahneman and Tversky, 1979).

The real contribution of this research, however, relates to the identification of two distinct segments within the data. The identification of two segments echoes the work of Holems & Croker (1987) who found that preferences for communication strategies influenced by the cognition and information processing. Within our study, the larger of the two segments was characterised by a very different preference model, where respondents exhibited relatively small differences in the preferences between the levels of each of the communication strategies. The most popular communication strategies for this segment emphasized call to action, followed by the type of appeal, situation, and goal orientation.

The second segment, by contrast, appeared far more sensitive to level changes than the first segment. Respondents within this segment exhibited relatively strong preferences for one particular level of the experimental variables. The communications strategies that dominated segment 2 related most to appeal, followed by the type of situation, goal orientation, and the call to action.

**Recommendation 7**

Regulators could use this understanding of segments to develop better targeted, more effective counter advertising.

**How does warning message framing impact on perceptions of gambling advertising?**

One interesting aspect of the DCE approach is that we can directly model interactions between communication and framing strategies. Using odds ratios, we see that the presence of a positively framed warning message while holding the other communication elements constant, would have a strong suppressive impact on gambling intentions, reducing the likelihood of acting on an advertisement by as much as 89%. However, the calculation of odds ratios for the different communication strategies was shown to increase the odds of a gambling response by between 64-87%. This suggests that effectively executed warning messages can go a long way to cancelling out the effect of gambling advertising.

At the segment-level, we observed that the smaller segment was particularly sensitive to positively framed warning messages, whereas the larger segment was more sensitive to negatively framed warning messages, even though this sensitivity was not as pronounced as that observed in the smaller segment. This makes some sense, and may even help to explain some of the inconsistencies observed in prior research on the use of warning messages within electronic gaming machines.

The prior research looking at gambling messages focused on aggregate level differences. In this sense, the inconsistencies could have been masking segment level differences. For instance, if we only focused on the larger segment, then the finding that gambling intentions were more greatly influenced by negatively framed warning messages is consistent with Munoz et al. (2010) and Gainsbury et al. (2015). However, this would ignore the preferences of almost a third of respondents (segment 2) who were more influenced by positively framed warning messages.

**Recommendation 8**

Regulators could use this understanding of segments to develop better targeted, more effective regulatory interventions (e.g., warning messages).

## **Does the interaction of warning messages and advertising strategy vary according to vulnerability?**

Our findings do not demonstrate a statistically strong relationship between communication and framing strategies and problem gambling across the two-segment model. In this way, our findings concur with a recent study of warning messages used within electronic gaming machines (Gainsbury et al., 2015). This is an important finding that adds to our understanding of the relationship between advertising and problem gambling (Griffiths, 2005).

The observed response patterns are, however, consistent with dual process theories of cognition wherein respondents exhibit different patterns of cognition (e.g., conscious or unconscious) in response to different stimuli. A relevant example of a dual process theory is the elaboration likelihood model (Petty and Cacioppo, 1986). This model has been employed extensively to explain advertising perceptions and response. It holds that the extent to which an audience engages with and actively elaborates (cognitively process) on an advertisement's message is dependent upon their level of involvement.

From our findings, it would appear that the less discerning preferences of the larger segment seems to suggest a lower level of involvement, and hence a more peripheral, automated processing. Everything is important, but the differences across the levels of the attributes is small. The sensitivity of the smaller segment, on the other hand, appears to suggest a more rational, active processing.

This interpretation is potentially significant as it highlights an important area for regulators to focus their attention. The key is to keep the moderate risk gamblers in segment 2 engaged in actively processing information. Once they stop actively processing they are more likely to become immune to regulatory intervention as they are no longer engage their purposeful, rational, analytic defences.

### **Recommendation 9**

Future research could potentially target problem gamblers to better understand the triggers that activate their active processing of messages.

## Conclusion

The use of warning messages has emerged as a popular strategy for regulators. However, to date there has been little research conducted to evaluate the efficacy of this strategy. Our research addresses this gap by examining how warning message framing influences perceptions of gambling advertising. This report provides a summary of the results from three linked studies undertaken to address this aim, and resolve the following three research questions:

Study 1. How are legislative interventions used in different jurisdictions of Australia?

Study 2. What are the different communication strategies employed by gambling advertisers? and

Study 3. How does the use of warning messages impact on perceptions and response to gambling advertisements?

## Summary of key findings

### Study 1

The first study provided an evaluation of Australian advertising legislation. This was the first comprehensive study of gambling legislation undertaken anywhere in the world. In addition to analysing the Australian regulatory response, we also sought to understand how these responses aligned with societal expectations, and importantly, how the Australian response compared with other OECD countries. Key findings are presented in Table 13.

**Table 13. Key findings for Study 1**

Research question	Key findings	Recommendations
What legislative requirements govern the advertising of gambling in Australia, particularly in relation to the use of warning messages?	<p>The results of study 1 confirmed Thomas et al.'s (2011) claim regarding the complex, diverse, and inconsistent nature of gambling regulation.</p> <p>Some areas of concern were well supported, particularly those relating to the protection of minors and vulnerable persons and those relating to the requirement that advertising not be false or misleading.</p>	<p><b>Recommendation 1:</b> The absence of consistent, strict legislative framework, has resulting in gambling advertisers being responsible for self-regulation. A national framework would greatly assist in the regulation of gambling advertising.</p> <p><b>Recommendation 2:</b> In considering the establishment of a national regulatory framework, consideration needs to be given not only to the content of legislation, but also to the way in which this legislation is prosecuted in the different jurisdictions. This is important if the general public is to have confidence in government's ability and willingness to act on behalf of society.</p>

Is Australian legislation keeping pace with societal expectations?	<p>The analysis of societal expectations highlighted significant misalignment between public sentiment and the legislation.</p> <p>The analysis highlighted the need for more restrictions dealing with the inclusion of false and misleading statements, the depiction of gambling as a “sure thing.”</p>	<p><b>Recommendation 3:</b> Future legislation should explore opportunities to tighten provisions relating to deception, and provide clearer, more consistent guidelines to reduce the likelihood that vulnerable persons (particularly children) are normalised to gambling.</p>
How does the Australian regulatory context compare with other OECD countries?	<p>Australia has a fairly comprehensive regulatory framework compared with most other OECD countries.</p> <p>Australia would need to do more if it intends to maintain its perception as a leader among developed OECD countries in relation to gambling regulation.</p>	<p><b>Recommendation 4:</b> While Australia has a fairly comprehensive regulatory framework compared with most other OECD countries, the social and health related concerns associated with gambling warrant that consideration be given to following Ireland’s lead and introducing a complete ban on gambling advertising.</p>

## Study 2

The second study provided a detailed examination of the different communication strategies used by Australian gambling advertisers. Using a framework derived from the literature, we examined the prevalence of different advertising tactics within a sample of real television advertisements, and sought to understand how these tactics were combined to target gamblers. This is the first detailed examination of communication strategies within Australian gambling advertisements. Key findings are presented in Table 14.

**Table 14. Key findings for Study 2**

Research question	Key findings	Recommendations
What are the different communication strategies adopted by Australian gambling advertisers?	<p>The modal approach to gambling advertising involved the use of an informational appeal (67%), focused on experience gamblers (46%), a non-immediate call-to-action (80%), and used an incentive goal orientation.</p> <p>Findings consistent with information processing theory (Holems &amp; Croker 1987), which suggests that more experienced gamblers are likely to have a higher involvement.</p>	<p><b>Recommendation 5:</b> Regulators should take advantage of the findings on communication strategies to develop better targeted, more effective counter advertising.</p>

How are the different types of communication strategies related?	<p>Advertisers use a combination of different tactics within their advertisement, and that these tactics conform to what we understand about information processing theory.</p> <p>Findings emphasize the important role of goal orientation in understanding the communication strategies of gambling advertisers.</p>	<p><b>Recommendation 6:</b> Regulators should take advantage of the findings on communication strategies to develop better targeted, more effective regulatory interventions (e.g., warning messages).</p>
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### Study 3

The third study systematically examined the influence of warning messages on gambling advertisement perceptions. This is another world first. We utilised an advanced combinatorial experiment to examine how the perceptions of gamblers with different levels of vulnerability respond to different communication strategies, and how the use of warning messages impacts on their perceptions and intentions. Key findings are presented in Table 15.

**Table 15. Key findings for Study 3**

Research question	Key findings	Recommendations
What aspect of the communication strategy has the greatest impact on gambling preferences?	<p>The identification of two segments echoes the work of Holems &amp; Croker (1987) who found that preferences for communication strategies influenced by the cognition and information processing.</p> <p>The most popular communication strategies for this segment emphasized call to action, followed by the type of appeal, situation, and goal orientation.</p> <p>The communications strategies that dominated segment 2 related most to appeal, followed by the type of situation, goal orientation, and the call to action.</p>	<p><b>Recommendation 7:</b> Regulators could use this understanding of segments to develop better targeted, more effective counter advertising.</p>
How does warning message framing impact on perceptions of gambling advertising?	<p>Odds ratios show that effectively executed warning messages can go a long way to cancelling out the effect of gambling advertising.</p> <p>Segment level differences explain some of the inconsistencies observed in prior research on the use of warning messages.</p>	<p><b>Recommendation 8:</b> Regulators could use this understanding of segments to develop better targeted, more effective regulatory interventions (e.g., warning messages).</p>

<p>Does the interaction of warning messages and advertising strategy vary according to vulnerability?</p>	<p>Response patterns were consistent with dual process theories of cognition.</p> <p>The less discerning preferences of the larger segment seems to suggest a lower level of involvement, and hence a more peripheral, automated processing.</p> <p>The sensitivity of the smaller segment, on the other hand, appears to suggest a more rational, active processing.</p>	<p><b>Recommendation 9:</b> Future research could potentially target problem gamblers to better understand the triggers that activate their active processing of warning messages.</p>
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## Declarations of interest

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No pecuniary interest to declare.



## Appendices

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- Appendix 1. Australian gambling legislation by state and territory (study 1)
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## Appendix 1. Australian gambling legislation by state and territory (Study 1)

State	Restrictions	Source
Australian Capital Territory	<p>Advertising is governed by the Gambling &amp; Racing Control Act 1999 and the Gambling and Racing Control (Code of Practice) Regulations 2002. Promotion must:</p> <ul style="list-style-type: none"> <li>• not show or target minors</li> <li>• not include false and misleading statements</li> <li>• not promote gambling as a form of investment</li> <li>• not depict the consumption of alcohol while gambling</li> </ul>	<a href="http://www.legislation.act.gov.au">www.legislation.act.gov.au</a>
New South Wales	<p>Advertising is regulated through the Gaming Machines Act 2001 and Gaming Machines Regulations 2002. Promotion must:</p> <ul style="list-style-type: none"> <li>• not depict children participating in lottery activity</li> <li>• not suggest that winning will be a definite outcome of entering or participating in the lottery activity</li> <li>• not suggest that entering or participating in the lottery activity will definitely improve a person's financial prospects.</li> </ul>	<a href="http://www.olgr.nsw.gov.au">www.olgr.nsw.gov.au</a>
Queensland	<p>Advertising is restricted by the Gaming Machine Act 1991. Promotion must:</p> <ul style="list-style-type: none"> <li>• not be false, misleading or deceptive</li> <li>• comply with the Advertiser Code of Ethics as adopted by the Australian Association of National Advertisers (<a href="http://www.aana.com.au">www.aana.com.au</a>)</li> <li>• must not implicitly or explicitly misrepresent the probability of winning a prize</li> <li>• not give the impression that gambling is a reasonable strategy for financial betterment</li> <li>• not include misleading statements about odds, prizes, or chances of winning</li> <li>• not offend prevailing community standards</li> <li>• not focus exclusively on gambling where there are other activities to promote</li> <li>• not be implicitly or explicitly directed at minors or vulnerable or disadvantaged groups</li> <li>• cannot involve any external signs advising of winnings paid</li> <li>• cannot involve any irresponsible trading practices by the gambling provider</li> <li>• cannot promote the consumption of alcohol while</li> <li>• engaged in the activity of gambling</li> <li>• where appropriate, incorporate responsible gambling messages in advertising and promotion.</li> </ul>	<a href="http://www.olgr.qld.gov.au">www.olgr.qld.gov.au</a>

South Australia	<p>Advertising is regulated via the Gaming Machines Act 1992 and the Advertising Code of Practice 2001. Promotion must:</p> <ul style="list-style-type: none"> <li>• be socially responsible and not mislead or deceive the customer</li> <li>• include an expanded warning message or, where not possible, a condensed warning message</li> <li>• not be directed at minors nor portray minors participating in gambling</li> <li>• not be explicitly or exclusively directed at vulnerable/disadvantaged groups</li> <li>• not promote gambling as a means of funding routine household purchases or costs of living</li> <li>• not promote gambling as a means of enhancing social standing or employment, social or sexual prospects</li> <li>• not make claims related to winning or the prizes that can be won that are not based on fact, are not able to be proven or are exaggerated</li> <li>• not imply that a player's skill can influence the gambling outcome</li> <li>• not associate gambling with excessive alcohol consumption</li> <li>• not occur outside of the hours of 6am and 8.30am Monday – Friday on the radio, and between 4pm and 7pm Monday to Friday on televisions.</li> </ul>	<a href="http://www.iga.sa.gov.au">www.iga.sa.gov.au</a>
Victoria	<p>The Gambling Regulation Act 2005 and the Gambling Legislation Amendment (Problem Gambling and Other Measures) Act 2007 provide the scope for legislative control of advertising. Promotion must:</p> <ul style="list-style-type: none"> <li>• foster responsible gambling in order to minimize harm caused by problem gambling</li> <li>• accommodate those who gamble without harming themselves or others</li> <li>• ensure that minors are neither encouraged to gamble nor allowed to do so</li> <li>• ensure that gaming on gaming machines is conducted honestly and ensure that the management of gaming machines and gaming equipment is free from criminal influence and exploitation</li> <li>• ensure that all forms of gambling are conducted honestly and that their management is free from criminal influence and exploitation</li> <li>• ensure that community and charitable gaming benefits the community or charitable organization concerned and prevent practices that could undermine public confidence in charitable gaming.</li> </ul>	<a href="http://www.vcgr.vic.gov.au">www.vcgr.vic.gov.au</a>
Northern Territory	There is no regulation on advertising, apart from paragraph (58) of The Northern Territory Gaming Control Act, which refers to the advertising of illegal gambling.	<a href="http://www.nt.gov.au/ntt">www.nt.gov.au/ntt</a>
Tasmania	The Gaming Control Act 1993 makes no reference to advertising.	<a href="http://www.gaming.tas.gov.au">www.gaming.tas.gov.au</a>
Western Australia	The Gaming Commission Act 1987 makes no reference to advertising.	<a href="http://www.orgl.wa.gov.au">www.orgl.wa.gov.au</a>

## Appendix 2. Summary of societal expectations regarding gambling (Study 1)

Summary of restrictions	Keywords	Findings	Sample quote
Not show or target minors or depict children participating in gambling activity	Children, youths, minors	Modest support. Mentioned five times, strong co-occurrence with advertising (22%).	My final point, if I may make it, is that in relation to gambling and children, where I think it's imperative that the precautionary principle must be applied very actively. Over the recent past, it's clear that there has been a marketing explosion, particularly in relation to sports-betting operations (Quote 626, Canberra Hearing).
Not be implicitly or explicitly directed at vulnerable or disadvantaged groups	Vulnerable, disadvantaged, problem gamblers	Strong support. Mentioned 49 times, strong co-occurrence with promotion (20%).	These strategies need to specifically reflect protection, prevention, health promotion and treatment in the fields of both gambling and problem gambling. So again not waiting for people to fall into the river before we drag them out but looking at that upstream approach which is certainly recommendations within the report and we would like to see those more clearly spelt out, I guess (Quote 124, Sydney Hearing).
Not include false and misleading statements (e.g., enhance social standing, sexual prospects)	Misleading, false	No support. Mentioned once, but not in the context of gambling or promotion.	No relevant quotation.
Not promote gambling as a form of investment, or give the impression that gambling is a reasonable strategy for financial betterment	Investment, financial return, odds	No support. Mentioned 10 times, but not in the context of gambling or promotion.	No relevant quotation.
Not depict the consumption of alcohol while gambling	Alcohol, drinking	Modest support. Mentioned six times, co-occurrence with health (10%) and promotion (6%).	it's always astonished me that problem gambling has sat outside the principles that we've adopted within health for a considerable length of time and that on these other harm potentially, in terms of products like cars, in terms of consumption, in terms of drug or alcohol.
Summary of restrictions	Keywords	Findings	Sample quote
Not suggest that winning will be a definite outcome, or implicitly or explicitly misrepresent the probability of winning a prize	Winning, probability	No support.	No relevant quotation.

Be socially responsible and not offend prevailing community standards, comply with code	Social responsibility, community standards	Weak support. Mentioned once within the context of health (5%).	Governments in Australia have a mandated responsibility under the various state and territory legislations to protect and enhance the wellbeing of their communities and on that basis we have looked to the health, social and economic wellbeing and prosperity of our community against the issue of introduction of pokie machines (Quote 58, Melbourne Hearing).
Where appropriate, incorporate responsible gambling messages in the advertising and promotion	Warnings, messages	No support. Mentioned once, but not in the context of gambling or promotion.	No relevant quotation.
Not occur at peak viewing or listening times	Broadcast restriction, prime time	No support. Mentioned three times, but not in the context of gambling or promotion.	No relevant quotation.

## Appendix 3. OECD comparison of gambling legislation (Study 1)

Summary of restrictions	AU	US	UK	CA	NZ	DK	FI	HU	SI	SK	DE	GR	ES	LU	FR	IT	MX
Not show or target minors, or depict children participating in gambling activity	X	X	...	X	X	X	X	X	X	X	...	...	...	...	...	...	...
Not be implicitly or explicitly directed at vulnerable or disadvantaged groups	X	...	...	...	...	...	...	...	...	...	X	...	...	...	...	...	...
Not include false and misleading statements (e.g., enhance social standing, sexual prospects)	X	...	...	...	...	...	X	...	...	...	...	...	...	...	...	...	...
Not promote gambling as a form of investment, or give the impression that gambling is a reasonable strategy for financial betterment	X	X	...	X	X	...	...	...	X	...	X	X	X	X	...	...	...
Not depict the consumption of alcohol while gambling	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not suggest that winning will be a definite outcome, or implicitly or explicitly misrepresent the probability of winning a prize	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Be socially responsible and not offend prevailing community standards, comply with code	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Where appropriate, incorporate responsible gambling messages in the advertising and promotion	X	...	...	...	...	...	...	...	...	...	...	...	X	...	X	X	X
Not occur at peak viewing or listening times	X	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not featured, or total ban in place (B)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Note: Country codes based on ISO 3166-1 alpha-2 standard

Summary of restrictions	NL	AT	BE	PL	SE	CH	PT	CZ	CL	EE	IE	IS	IL	JP	NO	KR	TR
Not show or target minors, or depict children participating in gambling activity	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not be implicitly or explicitly directed at vulnerable or disadvantaged groups	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not include false and misleading statements (e.g., enhance social standing, sexual prospects)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not promote gambling as a form of investment, or give the impression that gambling is a reasonable strategy for financial betterment	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not depict the consumption of alcohol while gambling	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not suggest that winning will be a definite outcome, or implicitly or explicitly misrepresent the probability of winning a prize	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Be socially responsible and not offend prevailing community standards, comply with code	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Where appropriate, incorporate responsible gambling messages in the advertising and promotion	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not occur at peak viewing or listening times	...	X	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not featured, or total ban in place (B)	...	...	X	X	X	X	X	X	X	B	B	B	B	B	B	B	B

Note: Country codes based on ISO 3166-1 alpha-2 standard

## Appendix 4. Relationships among communication strategies (Study 2)

	Appeal			Intended audience		Situation		Action		Goal orientation				
	EM	IN	IE	EPG	EG	TA	GE	IM	NI	IC	NO	WI	CO	ES
<b>Appeal</b>														
Emotional (EM)	...	...	...	15.00%	1.07%	15.00%	1.07%	1.43%	14.64%	0.00%	4.29%	11.07%	0.00%	0.71%
Informational (IN)	...	...	...	57.86%	9.64%	62.50%	5.00%	13.93%	53.57%	39.29%	16.79%	10.71%	0.71%	0.00%
Informational & Emotional (IE)	...	...	...	15.00%	1.43%	14.64%	1.79%	4.64%	11.79%	5.00%	5.71%	5.00%	0.71%	0.00%
<b>Intended audience</b>														
Established & Potential (EPG)	15.00%	57.86%	15.00%	...	...	81.79%	6.07%	19.29%	68.57%	36.07%	23.57%	26.07%	1.43%	0.71%
Established gamblers (EG)	1.07%	9.64%	1.43%	...	...	10.36%	1.79%	0.71%	11.43%	8.21%	3.21%	0.71%	0.00%	0.00%
<b>Situation</b>														
Tailored (TA)	15.00%	62.50%	14.64%	81.79%	10.36%	...	...	18.93%	73.21%	44.29%	19.29%	26.79%	1.07%	0.71%
General (GE)	1.07%	5.00%	1.79%	6.07%	1.79%	...	...	1.07%	6.79%	0.00%	7.50%	0.00%	0.36%	0.00%
<b>Action</b>														
Immediate (IM)	1.43%	13.93%	4.64%	19.29%	0.71%	1.07%	18.93%	...	...	5.00%	5.00%	9.29%	0.71%	0.00%
Not immediate (NI)	14.64%	53.57%	11.79%	68.57%	11.43%	6.79%	73.21%	...	...	39.29%	21.79%	17.50%	0.71%	0.71%
<b>Goal orientation</b>														
Incentive (IC)	0.00%	39.29%	5.00%	36.07%	8.21%	44.29%	0.00%	5.00%	39.29%	...	...	...	...	...
Normalisation (NO)	4.29%	16.79%	5.71%	23.57%	3.21%	19.29%	7.50%	5.00%	21.79%	...	...	...	...	...
Winning (WI)	11.07%	10.71%	5.00%	26.07%	0.71%	26.79%	0.00%	9.29%	17.50%	...	...	...	...	...
Community (CO)	0.00%	0.71%	0.71%	1.43%	0.00%	1.07%	0.36%	0.71%	0.71%	...	...	...	...	...
Escape (ES)	0.71%	0.00%	0.00%	0.71%	0.00%	0.71%	0.00%	0.00%	0.71%	...	...	...	...	...



## Appendix 5. Problem gambling severity index (Study 3)

This self-assessment is based on the Canadian Problem Gambling Index. It will give you a good idea of whether you need to take corrective action.

Thinking about the last 12 months...

- Have you bet more than you could really afford to lose?
- Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
- When you gambled, did you go back another day to try to win back the money you lost?
- Have you borrowed money or sold anything to get money to gamble?
- Have you felt that you might have a problem with gambling?
- Has gambling caused you any health problems, including stress or anxiety?
- Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
- Has your gambling caused any financial problems for you or your household?
- Have you felt guilty about the way you gamble or what happens when you gamble?

### Item scoring

Consistent with the Victorian Gambling Study, all items were scored using the following scale.

- 0 Never. 1 Rarely. 1 Sometimes. 2 Often. 3 All of the time.

A total problem gambling severity index was then obtained for each respondent by summing their responses to all scale items using the above scale. The higher your score, the greater the risk of problem gambling.

- Score of 0 = Non-problem gambling.
- Score of 1 or 2 = Low level of problems with few or no identified negative consequences.
- Score of 3 to 7 = Moderate level of problems leading to some negative consequences.
- Score of 8 or more = Problem gambling with negative consequences and a possible loss of control.

## Appendix 6. Experimental design & advertisement selection (Study 3)

Alternative	Appeal	Situation	Action	Goal	Framing (Warning message)	Choice Set	Reference	Advertiser
1	Level 1	Level 1	Level 1	Level 1	Level 1	1	TAV2014035031	Sportingbet
2	Level 2	Level 1	Level 1	Level 2	Level 2	2	TAV2011318046	Sportingbet
3	Level 1	Level 2	Level 1	Level 2	Level 1	3	TAV2013384018	Tom Waterhouse
4	Level 1	Level 1	Level 2	Level 1	Level 2	4	TAQ2014928829	Unibet
5	Level 2	Level 2	Level 1	Level 1	Level 2	5	TAV2014094063	Sportsbet
6	Level 2	Level 1	Level 2	Level 2	Level 1	6	TAV2014103944	Tom Waterhouse
7	Level 1	Level 2	Level 2	Level 2	Level 2	7	TAN2014382235	Betfair
8	Level 2	Level 2	Level 2	Level 1	Level 1	8	TAV2013363666	Keno
9	Level 2	Level 2	Level 2	Level 2	Level 2	1	TAQ2010332219	TAB
10	Level 1	Level 2	Level 2	Level 1	Level 1	2	TAV2013363703	Tatts Lotto
11	Level 2	Level 1	Level 2	Level 1	Level 2	3	TAQ2011082508	Betfair
12	Level 2	Level 2	Level 1	Level 2	Level 1	4	TAN2014353317	Sportsbet
13	Level 1	Level 1	Level 2	Level 2	Level 1	5	TAV2013445147	TAB
14	Level 1	Level 2	Level 1	Level 1	Level 2	6	TAV2010484810	Betfair
15	Level 2	Level 1	Level 1	Level 1	Level 1	7	TAQ2014333302	Sportsbet
16	Level 1	Level 1	Level 1	Level 2	Level 2	8	TAV2012286201	Crown

## Appendix 7. Statistical Information on experimental design (Study 3)

### Processing Stage

Number of choice sets: 8

Det C is: 2.98023223877e-08

Efficiency compared with optimal design for choice set size m = 2: 100.0%

Efficiency compared with optimal design for optimal choice set size m = 2: 100.0%

Main effects are uncorrelated

Treatment Combinations	Sets of Generators Entered	Choice Sets Created
0 0 0 0 0	1 1 1 1 1	0 0 0 0 0 1 1 1 1 1
1 0 0 1 1		1 0 0 1 1 0 1 1 0 0
0 1 0 1 0		0 1 0 1 0 1 0 1 0 1
0 0 1 0 1		0 0 1 0 1 1 1 0 1 0
1 1 0 0 1		1 1 0 0 1 0 0 1 1 0
1 0 1 1 0		1 0 1 1 0 0 1 0 0 1
0 1 1 1 1		0 1 1 1 1 1 0 0 0 0
1 1 1 0 0		1 1 1 0 0 0 0 0 1 1

C Matrix	C Inverse	Correlation Matrix
1/32 0 0 0 0	32 0 0 0 0	1 0 0 0 0
0 1/32 0 0 0	0 32 0 0 0	0 1 0 0 0
0 0 1/32 0 0	0 0 32 0 0	0 0 1 0 0
0 0 0 1/32 0	0 0 0 32 0	0 0 0 1 0
0 0 0 0 1/32	0 0 0 0 32	0 0 0 0 1

### Lambda Matrix

1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1/32		
0	1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1/32	0	
0	0	1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1/32	0	0
0	0	0	1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1/32	0	0
0	0	0	0	1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	-1/32	0	0
0	0	0	0	0	1/32	0	0	0	0	0	0	0	0	0	0	0	0	-1/32	0	0
0	0	0	0	0	0	1/32	0	0	0	0	0	0	0	0	0	0	0	0	-1/32	0
0	0	0	0	0	0	0	1/32	-1/32	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	-1/32	1/32	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	-1/32	0	0	1/32	0	0	0	0	0	0	0	0
0	0	0	0	0	0	-1/32	0	0	0	0	0	1/32	0	0	0	0	0	0	0	0
0	0	0	0	-1/32	0	0	0	0	0	0	0	0	1/32	0	0	0	0	0	0	0
0	0	0	-1/32	0	0	0	0	0	0	0	0	0	0	1/32	0	0	0	0	0	0
0	-1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	1/32	0	0	0	0	0
-1/32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1/32	0	0	0

Analysis of experimental design efficiency undertaken using Burgess, L. (2007) Discrete Choice Experiments [computer software], University of Technology, Sydney, available from <http://maths.science.uts.edu.au/mathswiki/SPExpts>.

## Appendix 8. Responses to CPGSI items (Study 3)

	Mean	Std. Dev.
Thinking about the past 12 months, how often have you bet more than you could really afford to lose?	2.08	1.095
Thinking of the past 12 months, how often have you felt that you might have a problem with gambling?	1.77	1.079
How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?	1.85	1.081
How often have you gone back another day to try to win back money you lost?	2.07	1.167
How often have you borrowed money or sold something to get money to gamble?	1.53	0.902
How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	1.64	1.011
How often have you felt guilty about the way you gamble, or what happens when you gamble?	2.07	1.085
How often has your gambling caused you any health problems, including stress or anxiety?	1.76	1.029
How often has your gambling caused any financial problems for you or your household?	1.76	1.074

## Appendix 9. Descriptive covariates (Study 3)

	Within Segment		Between Segment	
Covariates	Segment 1	Segment 2	Segment 1	Segment 2
LOCATION: Please indicate your state of residence in Australia?				
NSW	0.2126	0.2318	0.8783	0.1217
VIC	0.4717	0.4648	0.8888	0.1112
QLD	0.3157	0.3034	0.8912	0.1088
<b>GENDER: What is your gender?</b>				
No answer	0.0065	0.0039	0.9290	0.0710
Male	0.5379	0.6068	0.8746	0.1254
Female	0.4556	0.3893	0.9021	0.0979
<b>INDIGENOUS: Do you identify as Aboriginal or Torres Strait Islander?</b>				
No answer	0.0065	0.0039	0.9290	0.0710
Yes	0.0434	0.0262	0.9289	0.0711
No	0.95	0.9699	0.8852	0.1148
<b>ETHNICITY: Do you speak a language other than English at home?</b>				
No answer	0.0065	0.0039	0.9290	0.0710
Yes	0.2236	0.1541	0.9195	0.0805
No	0.7699	0.842	0.8780	0.1220
<b>AGE: What was your age in years at last birthday?</b>				
No answer	0.0077	0.0039	0.9391	0.0609
Less than 18	0.0047	0.0000	1.0000	0.0000
18-24	0.1445	0.1421	0.8889	0.1111
25-34	0.2542	0.3274	0.8594	0.1406
35-49	0.2452	0.1862	0.9120	0.0880
50-64	0.2362	0.1837	0.9101	0.0899
65+	0.1076	0.1567	0.8438	0.1562
<b>HOUSEHOLD: What is the structure of your household?</b>				
No answer	0.0065	0.0039	0.9290	0.0710
Couple with child/ren	0.3084	0.2961	0.8913	0.1087

One parent family	0.0764	0.0424	0.9341	0.0659
Couple without Child/ren	0.2587	0.3013	0.8711	0.1289
Other family type	0.0778	0.0780	0.8870	0.1130
Group household	0.1683	0.1195	0.9173	0.0827
Lone person	0.0298	0.0319	0.8804	0.1196
Other household type	0.0739	0.1268	0.8211	0.1789
<b>EDUCATION: What is your highest level of education completed?</b>				
No answer	0.0065	0.0039	0.9290	0.0710
No school	0.0047	0.0000	1.0000	0.0000
Year 8 or less	0.0222	0.0089	0.9514	0.0486
Year 10	0.1878	0.2335	0.8636	0.1364
Year 12	0.3154	0.2777	0.8994	0.1006
Pre degree	0.2341	0.2373	0.8859	0.1141
Bachelors	0.1284	0.1486	0.8718	0.1282
PG degree	0.0867	0.0817	0.8930	0.1070
Other	0.0141	0.0083	0.9309	0.0691
<b>EMPLOYMENT: What is your current employment status?</b>				
No answer	0.0077	0.0039	0.9391	0.0609
FT employ	0.4072	0.4579	0.8750	0.1250
PT employ	0.2299	0.1873	0.9062	0.0938
Unemployed	0.1083	0.0865	0.9078	0.0922
Not in workforce	0.1616	0.1639	0.8858	0.1142
Other	0.0854	0.1005	0.8700	0.1300
<b>OCCUPATION: What is your main occupation?</b>				
No answer	0.0077	0.0039	0.9391	0.0609
Manager	0.1311	0.1462	0.8759	0.1241
Professional	0.1695	0.1564	0.8951	0.1049
Technician, trade	0.0653	0.0569	0.9003	0.0997
Community, personal services	0.0293	0.0179	0.9280	0.0720

Clerical, admin	0.1177	0.1044	0.8987	0.1013
Sales	0.0804	0.0576	0.9165	0.0835
Machine operator, driver	0.0318	0.0441	0.8504	0.1496
Labourer	0.0610	0.0720	0.8696	0.1304
Other	0.3063	0.3407	0.8762	0.1238
<b>INCOME: What is your estimated weekly household income before tax?</b>				
No answer	0.0065	0.0039	0.9290	0.0710
No income	0.0190	0.0252	0.8558	0.1442
1-149	0.0268	0.0285	0.8809	0.1191
150-249	0.0296	0.0065	0.9730	0.0270
250-349	0.0476	0.0668	0.8488	0.1512
350-499	0.0744	0.0588	0.9088	0.0912
500-649	0.0703	0.0351	0.9404	0.0596
650-799	0.0977	0.0869	0.8984	0.1016
800-999	0.0953	0.0592	0.9269	0.0731
1000-1199	0.0690	0.0827	0.8678	0.1322
1200-1399	0.0679	0.128	0.8068	0.1932
1400-1699	0.0737	0.0826	0.8753	0.1247
1700-1999	0.0887	0.0746	0.9034	0.0966
2000-2499	0.0555	0.0696	0.8625	0.1375
2500-2999	0.0381	0.0408	0.8802	0.1198
3000-3499	0.0153	0.0268	0.8177	0.1823
3500-3999	0.0106	0.0083	0.9102	0.0898
4000+	0.0181	0.0326	0.8136	0.1864
Prefer not say	0.0958	0.0830	0.9008	0.0992
<b>CPGSI_categories</b>				
Non Problem	0.1449	0.1570	0.8894	0.1106
Low Risk	0.1113	0.1089	0.8579	0.1421
Moderate Risk	0.3391	0.4419	0.8790	0.1210
Problem Gambler	0.4048	0.2922	0.9160	0.0840

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