Gambling Harm and Harm Minimisation in Western Australia

EXPERT OPINION

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Experimental Gambling Research Laboratory

CQUniversity, Australia

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Report background

This independent expert report was prepared in response to a request from solicitors assisting a Royal Commission, established to inquire into and report on the affairs of the Crown Casino Perth. This report evaluates the adequacy of the responsible service of gambling (RSG) program provided by the Crown Casino Perth. It also provides evidence as to how the use of Crown Casino Perth Electronic Gaming Machines (EGMs) causes or contributes to gambling related harm and the nature, extent, and severity of those harms. More specifically, this report responds to a series of questions posed by the solicitors assisting the Perth Casino Royal Commission. To assist in this evaluation, the solicitors provided a brief of questions and a collection of documents that were dated and securely delivered to CQUniversity on the 11th of October 2021. We also received a draft brief on the 21st of September; however, this report relies on the finalised brief received on the 11th of October.

Qualifications of experts who prepared this report

The Experimental Gambling Research Laboratory (EGRL) at CQUniversity—Australia's largest regional university— is highly regarded both nationally and internationally for its extensive, high quality and innovative research into gambling, gambling related harm, and player wellbeing. The EGRL has ten active gambling researchers, including three of Australia's eminent gambling research professors, and is routinely awarded competitive research grants by state governments and NGOs to examine gambling prevalence, gambling related harm, and the responsible service of gambling.

Professor Matthew Rockloff is the Head of the EGRL. He has extensive experience in research examining gambling risk across populations and factors relating to the responsible service of gambling, ranging from authorship of the Behavioral Risk Factor Surveillance Survey for the State of Nevada in 1999 to recent prevalence studies of gambling in Tasmania (2018), Victoria (2019) and New South Wales (2019), and measuring and validating responsible gambling behaviours amongst regular gamblers in Alberta, Canada. Professor Rockloff has been a contributing author to 35 grant-funded projects totalling \$6.4 million in funding, including being Chief Investigator on 17 projects totalling \$2.9 million in funding. He is an author of 100+ research publications, including journal articles, research reports and book chapters.

Professor Nerilee Hing has 25 years of experience in gambling research. Previous to her appointment in 2016 to the EGRL, Professor Hing was the Founding Director of the Centre for Gambling Education and Research at Southern Cross University. She has also sat on numerous panels and working parties for gambling regulatory authorities, both nationally and internationally, including being appointed to the Australian Government's Ministerial Expert Advisory Group on Gambling. Professor Hing is considered an expert in research examining policies and practices to prevent and minimise gambling related harm for individuals, families, and communities, and on how to increase the safe provision, consumption, and regulation of gambling. Professor Hing has been an investigator on over 60 gambling projects, totalling to

over \$12.3 million in grant funding. Her expertise in gambling is demonstrated by her >200 peerreviewed publications on gambling.

Professor Matthew Browne is a leading researcher in the field of gambling, with specific expertise in gambling related harm, and a background in advanced statistics and applied mathematics. His work has demonstrated the link between specific indicators of harmful gambling (e.g., credit card debt, feelings of guilt) and decrements in self-reported wellbeing and health-utility ratings, in alignment with recognised World Health Organisation utility frameworks. He has done extensive work on analysing risk factors for various gambling related outcomes, often working within a massively multivariate framework. Professor Browne has been a contributing author to 30 grant-funded projects, worth a total of \$7.2 million in funding. His track-record includes 100+ authored academic papers, book-chapters, and reports. He has held two postdoctoral positions at Griffith University, and research scientist positions at the CSIRO and in the Institute for Autonomous Systems at the Fraunhofer-Gesellschaft (Germany's peak science organisation).

Associate Professor Alex Russell joined the EGRL in 2016 and has expertise in the social influences of gambling, risk factors for gambling harm, and emerging gambling products, as well as in sophisticated statistical techniques. Prior to joining the EGRL in 2016, he was the Chief Statistician in the Centre for Gambling Education and Research at Southern Cross University, led by Professor Hing. He has worked in gambling research for over a decade and has published extensively, including 90 journal articles, two book chapters and 13 commissioned research reports. He has been an investigator on 32 gambling related projects, totalling \$7 million in competitive research funding.

Hannah Thorne is a final-year PhD Candidate who has worked in gambling research for over a decade in both Australia and New Zealand. Her doctoral thesis examines gambling harm with a specific focus on the consumption of alcohol and the provision of late-night gambling, both highly relevant to the current investigation. She also has experience in researching EGM characteristics and environments that have the potential to cause harm. Hannah has 12 peer-reviewed publications and was recently awarded Outstanding Early Career Researcher by the South Australian branch of the Australasian Sleep Association for her work on the 24-hour availability of gambling and its association with harm.

Dr Philip Newall is a postdoctoral researcher at the EGRL. Previous to this appointment, Philip completed a PhD in Economics at the University of Stirling in 2016 followed by postdoctoral research fellowships at the Technical University Munich and the University of Warwick. Philip is a member of the Advisory Board for Safer Gambling – an advisory group of the Gambling Commission in Great Britain and was a special advisor to the House of Lords Select Committee Enquiry on the Social and Economic Impact of the Gambling Industry. Philip has a range of interests across gambling research and is a proponent of adapting concepts and research methods from the field of behavioural science to gambling. He has 36 peer-reviewed publications on the topics of gambling and decision-making and is on the editorial board of the highly regarded journal, Addiction Research & Theory.

Dr Tess Visintin completed her PhD on the protective influence of analytical thinking on altering gambling beliefs and behaviours to reduce gambling related harm. Dr Visintin has expertise in investigating the risks associated with innovative casino games and EGMs and has contributed to several studies on gambling environments that contribute to harm. She is currently completing a Master of Clinical Psychology and has published 11 peer-reviewed journal articles.

See Appendix II. Curriculum vitae for the CVs of contributing authors.

As lead author, Prof. Rockloff confirms that he has reviewed all documents provided.

CQUniversity conducts all research independent of industry funding. The authors declare no conflicts of interest with respect to the research and opinions expressed within this report.

Further, the authors declare that we have made all the inquiries which we believe are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which we regard as relevant have, to our knowledge, been withheld from the Royal Commission.

Mhins & Rolly

Prof. Matthew J Rockloff Head, Experimental Gambling Research Laboratory CQUniversity

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4.2 How effective at minimising gambling related harms are, or are likely to be, each of the measures set out at paragraph [1.11] above, or any other measures of which you are aware?
(a) Charging people a fee to enter casinos21
(b) Shutdown periods in which no gaming is offered for a number of hours;22
(c) Providing patrons with accurate information relating to the games they play, such as the actual odds of winning;
(d) Messaging patrons during EGM play, and behavioural tracking tools;
(e) Low betting limits for individual EGM games;23
(f) 'Full' or mandatory pre-commitment schemes, such as those in use in Norway and Sweden;
(g) As a component of pre-commitment schemes, a low daily maximum spend (perhaps around \$40 per session/day);24
(h) The use of EGM player tracking systems to link gamblers to treatment services;25
(i) Restrictions on the amount that can be won on EGM jackpots; and25

(j) Restrictions on advertising or marketing of gaming services
5 Question: Crown Casino Perth's existing RSG program
5.1 How effective do you consider the Crown Casino Perth's RSG program is likely to be at minimising gambling related harm? Why?26
5.2 Do you consider that any of the other features of the casino's operations, including but not limited to the Crown Rewards loyalty program; the use of hosts; and the use of EDM advertising, are likely to have an impact on:
(a) the nature, extent and severity of any gambling related harm resulting from the Crown Casino Perth's operations; or31
(b) the effectiveness of its RSG program? If so, why?
5.3 Do you have any comments as to the approach or conclusions of the Review Report? 32
6 Question: The nature of EGMs
6.1 What are the defining features or characteristics of an EGM?
6.2 Are EGMs generally more likely to have the potential to cause or contribute to gambling related harms than other forms of gambling? If so, why?
6.3 Having regard to the National Standard; the features of the Appendix and Policy (and particularly table WA4.2 of the Appendix); and the features of the appendices to the National Standard of the other States and Territories:
(a) what are the features or characteristics of Australian EGMs, if any, that are likely or have the potential to cause or contribute to gambling related harm;
(b) to what extent are those features and/or characteristics shared by Crown Perth EGMs;
(c) what are the features or characteristics of Australian EGMs, if any, that are likely or have the potential to mitigate or minimise gambling related harm;
(d) to what extent are those features and/or characteristics shared by Crown Perth EGMs;
(e) are there any unique features or characteristics of Crown Perth EGMs that are likely or have the potential to cause or contribute to gambling related harm; and
(f) are there any unique features or characteristics of Crown Perth EGMs that are likely to have the potential to mitigate or minimise gambling related harm?
7 Question: EGM usage
7.1 Are you aware of any research as to limits or thresholds for EGM usage which, if exceeded, indicate an elevated risk to the EGM user of gambling related harm? If so,

please explain what that research reveals and provide any commentary of your own in respect of that research and its application in practice that you consider appropriate.....38

8 Question: The evolution of poker machines
8.1 What are the features or characteristics of a 'poker machine' in Australia, and have those characteristics changed from the time that poker machines were first introduced into Australia until today? If you consider that the features or characteristics of poker machines differ in different parts of Australia, then please explain those differences
8.2 In answering this question, please explain the:
(a) mechanisms pursuant to which poker machines were and are operated; and
(b) process of playing on a poker machine (or playing a game on a poker machine)39
8.3 To the extent you consider there is any distinction between poker machines and games played on poker machines please explain how poker machines games have changed from the time that they were introduced into Australia until today40
8.4 Please also explain whether you consider there to be a distinction between poker machines and any other types of EGM and, if so, list and explain those differences40
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1 Question Responses

2 2 Question: Conceptualising gambling related harm

- 3 2.1 What is gambling related harm?
- 4 Gambling related harm can be defined as:
- 5 "Any initial or exacerbated adverse consequence due to an engagement with gambling
- 6 that leads to a decrement in the health or wellbeing of an individual, family unit,
- 7 community or population." (Langham et al., 2016)
- 8 Gambling related harms are negative consequences that can result from spending too much
- 9 time and/or money on gambling. It is important to distinguish between gambling problems and
- 10 gambling-related harm. Gambling problems are symptoms of a mental health condition known
- 11 as problem gambling, or in its clinical form, disordered gambling. These symptoms may include
- 12 some harms but can also include other, more subjective experiences such as "needing to
- 13 gamble with more and more money." (Ferris & Wynne, 2001).
- 14 More recent innovations in the measurement of gambling-related harm attempt to distinguish
- 15 between symptoms of gambling problems and the many negative consequences that can result
- 16 from gambling too much (Browne & Rockloff, 2020). This effort is important and relevant to the
- 17 definition offered above because people can suffer harms from gambling without having a
- 18 mental health condition or even being on a path towards developing such a condition. Browne et
- al. (2016) found that most of the harms produced by gambling are suffered by people who do
- 20 not have a gambling problem, but nevertheless have gambled at least occasionally at
- 21 unsustainable levels.
- As the definition above suggests, a comprehensive and distinct way to represent gambling
- 23 related harm is to couch it in terms of decrements to wellbeing. That is, gambling harm is any
- 24 consequence that reduces wellbeing. One easy way to understand this idea is by analogy to
- alcohol. People who over-consume alcohol can risk getting into a car accident from drink-
- 26 driving, which is an alcohol-related harm: an event that can impact on health and wellbeing. Not
- 27 everyone who gets into an accident due to alcohol consumption, however, necessarily has
- alcohol abuse disorder (i.e., alcoholism). Some people simply drink and drive on a single
- 29 occasion, resulting in an arrest or accident. Similarly, many people experience instances of
- 30 harms from gambling without suffering from a gambling problem.
- 31 Browne et al. (2016) developed a list of 72 distinct harms that can result from excessive time
- 32 and/or money spent on gambling. Harms are divisible into broad categories, including financial,
- 33 relationship, emotional/psychological, health, cultural, work/study and criminal activity (Langham
- et al., 2015). An example of a financial harm is "increased credit card debit" due to gambling.
- 35 Each of these harms, at least theoretically and in many instances provably, lead people to
- 36 suffer some decrement in their wellbeing. These decrements can be usefully compared to other
- 37 health conditions. Unsurprisingly, people who have symptoms reflective of a diagnosable
- 38 gambling disorder individually suffer more harms than people without such symptoms. This
- 39 research has shown, for instance, that problem gamblers suffer decrements to their wellbeing

40 from gambling-harm that are similar to decrements suffered by people with alcohol abuse

41 disorder (i.e., alcoholism).

42 As an economic activity, the costs of gambling are represented by the various gambling-related 43 harms detailed above. However, gambling can also produce benefits to gamblers in terms of the 44 recreational enjoyment from gambling. Gambling opportunities are rarely evaluated for both the 45 positive and negative effects that they produce, even though this is the correct approach for 46 evaluating gambling's net benefit to society. Rockloff et al. (2019) described the first study using 47 prevalence data to calculate the net benefit from gambling to consumers from all forms of gambling, using population representative data from the state of Tasmania. The study found two 48 49 potential outcomes for consumers from gambling, based on using the Direct Elicitation Method 50 and, alternatively, the Time Trade-off Method. Both of these methods are common to Burden of 51 Disease methodology (Badia, X. et. al., 2019). Using Direct Elicitation, gambling was calculated 52 as overall neutral, in that the wellbeing from gambling just equalled the wellbeing that could 53 have been achieved by spending that money on something else. The Time Trade-off method 54 found that gambling could produce a 2% net decrease in wellbeing for the average Tasmanian. 55 No one study is definitive, and although gambling undeniably produces some individual harm, there are also recreational benefits. Arguments about employment, taxation revenue, or 56 57 freedom in commerce are hard to quantify. However, it is easier to argue in line with standard 58 economic theory that industries should create greater consumer surpluses than the harms or

- 59 externalities that they create.
- 60 2.2 What are the causes of gambling related harm?
- 61 The National Definition of Problem Gambling is:
- 62 "Problem gambling is characterised by difficulties in limiting money and/or time spent on
 63 gambling which leads to adverse consequences for the gambler, others, or for the
 64 Community." (Neal, P., Delfabbro, P., O'Neil, M., 2005)

65 The National Definition, published by Gambling Research Australia, incorporates harms (i.e., 66 adverse consequences) and clearly identifies the source of those harms as "difficulties in 67 limiting money and/or time spent on gambling." In gambling research, there is a tendency to revel in complexity in describing the sources of gambling harm. This obfuscating complexity 68 69 suits the interests of the beneficiaries of gambling revenues, including government and industry 70 players, as well as researchers that accrue research income from exploring the many facets of 71 games, advertising practices, responsible gambling codes of conduct, etc. However, the source 72 of gambling harm, at the most basic level, is simple. Individually, some people spend too much 73 time and/or money on gambling, and this damages their social relationships, mental health, and 74 their ability to contribute to society. The reasons that people overspend are varied. In rapid play 75 forms of gambling, such as EGMs, people can have difficulty keeping track of how much they 76 have lost. Large wins are more memorable than small but frequent losses, and people can 77 incorrectly perceive that they are in a winning (or less losing) position than reality dictates. 78 Gambling also has behaviourally addictive properties that hijack our dopaminergic reward 79 systems. Consequently, gamblers often find the activity to be pleasant and difficult to quit, much

80 like addictive substances such as alcohol and nicotine.

81 Any meaningful improvement to public wellbeing needs to reduce individual expenditures to sustainable levels. In aggregate, this means a reduction in overall revenue to the gambling 82 industry, including tax revenue to the government, unless the reduction in individual expenditure 83 84 is compensated for by wider, and sustainable, participation in gambling. Lottery products are an 85 instructive example. Many people-about 40% of the Australian adult population-purchase 86 lottery tickets at least once a year (Browne et al., 2019; Rockloff et al., 2020). Thus, participation 87 is widespread, although there is little detectable harm that results from lottery purchases 88 (Browne et al., 2019; Rockloff et al., 2020). This is largely due to two factors. First, lottery tickets 89 rarely cost more than a few dollars. Second, lottery drawings are spread out through time, so 90 that a person may buy a lottery ticket on Monday and not know whether they won until the 91 weekend. This combination of a low cost of play and a long time until the gamble is realised 92 works together to mean that gamblers rarely spend large amounts of money on lottery tickets, 93 and feel little compulsion to try and win back their losses, a common behaviour in problem 94 gambling known as "loss chasing." Consequently, Australians spent almost AUD\$6 billion 95 gambling on lotteries in the 2018/19 financial year (Queensland Government Statistician's 96 Office, Queensland Treasury, 2021), yet lottery gambling contributes little to harm because it 97 rarely raises people's individual level of expenditure above sustainable levels.

⁹⁸ 3 Question: Current levels of gambling related harm in Western Australia

99 3.1 Are you aware of any research as to the current nature, extent and severity of

100 gambling related harm (particularly harm resulting from casino gaming) in Western

101 Australia? If so, please explain what that research reveals.

We have a publication forthcoming on this topic, drawing on data from the recent Interactive Gambling Study (Hing et al., 2021) commissioned by Gambling Research Australia¹. One component of the Interactive Gambling Study was a nationally representative telephone survey of 15,000 respondents, and results were weighted so that the sample more closely aligned with the population. This study provides a unique opportunity to examine how gambling behaviour and problems in Western Australia compare with the rest of Australia.

108 Analyses in the forthcoming publication show that there is a higher proportion of people who

109 gamble in WA (62.9%) compared to the rest of Australia (56.3%), but that the level of gambling

- problems in WA is significantly lower. Gambling problems were measured with a standard
- instrument called the Problem Gambling Severity Index (PGSI, Ferris and Wynne, 2001). The
- PGSI divides gamblers into categories, including (a) non-problem gamblers (score = 0), (b) low-
- 113 risk gamblers (scores = 1-2), (c) moderate-risk gamblers (scores = 3-7), and (d) problem
- 114 gamblers (scores = 8-27). In WA, 85.9% of people who gamble are classified as non-problem
- gamblers, compared to 80.1% in the rest of Australia, and 0.9% are classified as "problem
- gamblers" according to the Problem Gambling Severity Index, compared to 2.3% of gamblers in
- 117 the rest of Australia. Table 1 below also shows figures amongst the entire population, including

¹ Conduct of the study was approved by CQUniversity's Human Ethics Research Committee #22157

non-gamblers. Notably, despite there being more people who gamble in WA, the proportion of
 low-risk, moderate-risk and problem gamblers is lower than in the rest of Australia.

120 In the same study, we measure harms from gambling using the Short Gambling Harms Screen

121 (SGHS, Browne et al., 2018), This screen measures 10 of the most common harms that people

- 122 experience due to their gambling, such as "sold personal items" due to gambling. Scale scores
- are calculated by summing the number of harms (0-100). Gambling related harm experienced
- by gamblers is significantly lower in WA (*mean* = 0.40, *SD* = 1.20 based on the Short Gambling
- Harms Screen), compared to the rest of Australia (*mean* = 0.55, *SD* = 1.50), and harms
- experienced by families and friends from the gambling of others is also significantly lower in
- 127 WA. Most people gamble infrequently and report no harms from gambling. This explains why
- mean harms are less than 1.
- 129 Table 1. Proportion of people in each Problem Gambling Severity Index category in WA vs the
- 130 rest of Australia, including and excluding non-gamblers.
- 131

PGSI category	WA	Rest of Australia	WA	Rest of Australia
	Whole population		Gamblers only	
Non-gamblers	37.1	43.7	-	-
Non-problem gamblers	54.0	45.1	85.9	80.1
Low-risk gamblers	5.9	6.6	9.4	11.8
Moderate-risk gamblers	2.5	3.2	3.9	5.7
'Problem gamblers'	0.6	1.3	0.9	2.3

132 Note: Figures may not sum to 100% due to rounding.

While it might seem counterintuitive that WA has more gamblers, but fewer gambling problems, an examination of prevalence of use of each gambling form explains the difference. Compared to the rest of Australia, Western Australians are significantly more likely to take part in lotteries (52.8% vs 40.3%), scratch tickets (17.8% vs 15.5%) and casino games (10.2% vs 5.6%), as well as fantasy sports betting (1.0% vs 0.5%). However, Western Australians are significantly less likely to take part in gambling on electronic gaming machines (EGMs) (8.7% vs 17.3%) and keno (2.6% vs 8.3%).

- 140 We conducted mediation analyses to determine whether the difference between WA and the
- 141 rest of Australia in terms of gambling-related problems could be explained by any form of
- 142 gambling. A series of mediation analyses revealed that EGMs fully mediated the relationship
- between state of residence and gambling problems, irrespective of whether other forms of
- gambling were included in the model. In other words, the fact that WA experiences fewer
- 145 gambling problems can only be explained by the fact that fewer people in WA gamble on EGMs.
- 146 3.2 Alternatively, do you consider it is possible to estimate the current nature, extent
- 147 and severity of gambling related harm (particularly harm resulting from casino gaming)
- 148 in Western Australia? If so, please explain how and provide an estimate.
- 149 In this same forthcoming publication by our team, we examined the amount of gambling
- 150 problems that are attributable to taking part in each form of gambling. While most gambling
- 151 forms accounted for some gambling problems, the difference between WA and the rest of
- 152 Australia in terms of gambling-related problems is once again due to the lower proportion of
- people in WA who gamble on the EGMs. In short, if EGMs were more readily available
- 154 throughout WA, it is reasonable to conclude that EGM participation would be higher, and
- 155 therefore gambling problems would also be higher.
- 156 It is particularly notable that with less access to EGMs, participants appeared *more* likely to take
- 157 part in some other forms of gambling. Nevertheless, these other gambling forms were generally
- 158 less likely to cause harm, such as lotteries and scratch tickets. The exception is casino games,
- 159 for which the participation rate was higher in WA compared to the rest of Australia. A
- 160 reasonable explanation for this is that casino games are present in the same venue that EGMs
- are available: the Perth Casino. People who are more frequent gamblers tend to take part in
- 162 more than one form of gambling, particularly people who experience problems; and in WA,
- 163 people who play EGMs are at greater risk for gambling problems than people who participate in
- other gambling forms such as horse race betting (see Appendix I: Regression Models).. With
 EGMs and casino games only available in the same venue, this may explain why problem
- 166 associated with casino games are greater: people who want to play EGMs go to the casino to
- 167 gamble, and casino games are also there. This may also explain the lower level of keno
- 168 gambling in WA. In the rest of Australia, keno and EGMs are generally in the same venues,
- 169 such as clubs and pubs.
 - 170 A final finding is that EGMs in WA include some restrictions to their structural features, like no
 - auto spins, no spinning reels, and other similar requirements. This research finds no difference
 - between WA and the rest of Australia in terms of the relationship between playing EGMs and
 - 173 problems amongst those who play them. That is, there appears to be no evidence that the
 - 174 EGMs in WA are safer based on the machines themselves. Instead, it is the restricted
 - availability of EGMs that is the key factor contributing to lower gambling problems in WA.
 - 176 Figure 1 provides a graphical representation of a regression predicting problem gambling, as
 - 177 measured by Problem Gambling Severity Index (PGSI) scores, conditional on the frequencies of
 - 178 participation on each form of gambling (see Appendix I: Regression Models). Recall that the
 - PGSI is scored between 0 and 27. Proportions of gambling problems are scaled to 100% for the
 - 180 balance of states and territories outside of Western Australia. Consequently, problems can be

- 181 seen as an estimated percentage contributed by each form. In contrast, problems per capita in
- 182 Western Australia are less, and thus are scaled to be 66.85% of other states to accurately
- 183 represent them as proportionately less common. Almost the entirety of the difference in
- 184 gambling problem rates across jurisdictions is accounted for by the lower rates of EGM
- 185 participation in Western Australia.



Figure 1. Decomposition of total gambling problems to that attributable to each form, byjurisdiction

- 188 * Gambling problems scaled to 100% of that observed in other states and territories. Note that
- 189 gambling problems in WA are 66.85% of per-capita outcomes in other states and territories,
- 190 which explains why the stacked bar for WA does not add to 100%.

191 4. Question: Effectively minimising gambling related harms

192 4.1 What regulatory or policy approaches are available to legislators and/or regulators

193 to minimise gambling related harm, and what are the benefits and disadvantages of

194 each such perspective or approach?

195 Legislation, regulation and policy approaches to minimise harm should aim to reduce time and 196 money spent on gambling that are unsustainable. A complication is that gamblers can have 197 different capacities, based on income, leisure time availability, and family and social 198 responsibilities, to maintain their gambling involvement. Consequently, harm reduction efforts 199 can either focus on some conception of the "average gambler," or recognise some means by 200 which gamblers with different capacities can be identified and treated differently. For example, 201 different rules could apply to gamblers living outside the local area, such as holidaymakers, or 202 people who have credit and/or income checks that suggest they can afford to spend more on 203 gambling.

There are several overarching approaches to gambling harm minimisation that can be used, as articulated by Hing et al. (2020) and summarised below.

206 The informed-choice model

207 The understanding of the venue's role in minimising gambling related harm has changed over 208 the past few decades since the earliest known RSG program was designed by the American 209 Gaming Association in 1996, based on principles of informed choice. The informed choice 210 model saw harm as something that only problem gamblers experienced and, therefore, 211 preventing new problem gamblers and directing current problem gamblers to treatment were the 212 aims of venue programs. Gambling was seen as a rational decision, so the venue's only 213 responsibility was to provide information and responsibility to stay in control was put on the 214 gambler. Practices underpinned by this model include gambling signage, product information, 215 and giving information about help services and self-exclusion to those who request it. This 216 model pathologised individuals and created stigma around gambling problems, adding to the 217 barriers in seeking help. It relies almost entirely on interventions that attempt to educate people 218 on gambling, focusing mainly on people who have already developed a gambling problem. The 219 underlying presumption of the model is that people can make rational decisions about whether 220 to gamble and how much based on correct information.

221 The informed choice approach to RSG has been widely utilised by gambling operators since its 222 introduction in some US casinos in 1996. It has been favoured by the gambling industry, since it 223 diminishes the problem to one that affects only the small proportion of the population with a 224 clinical gambling disorder while ignoring the harm experienced by those at sub-clinical levels; it 225 requires of operators only a passive approach mainly involving information-provision while 226 ignoring changes to gambling products and environments that would make them less harmful; 227 and it shifts responsibility to gamblers to self-regulate their gambling. It allows operators to 228 promote themselves as responsible providers of gambling, while simultaneously having very 229 little effect on limiting the money and time people spend on gambling. This has been described

- as "a public relations coup for the gambling industry and its supporters" (Orford, 2017). The
- informed choice approach to RSG was further "legitimised" with the development of the Reno
- 232 Model in 2004 and its subsequent and sustained promotion by researchers who receive much of
- their research funding from the gambling industry (Blaszczynski et al., 2004, 2008, 2011, 2021;
- 234 Ladouceur et al., 2016; Shaffer et al., 2016, 2020).

235 Harm minimisation model

236 The *harm minimisation model* signifies a shift from a pathology and individual psychology 237 approach to a public health approach to gambling. It removes the emphasis on individuals 238 gambling "responsibly," aiming to prevent harm at the population level. Approaches to reducing 239 harm from gambling embedded in this model include prevention and reduction of harm across a 240 range of gambling levels through proactive venue interventions, such as mandatory shut-down 241 periods, and not necessarily restricted to those showing observable problem gambling signs or 242 relying on gamblers to ask for help. Its focus therefore includes patron wellbeing and early 243 recognition of gambling harm before a serious problem develops. The harm minimisation model 244 also includes awareness raising and stigma reducing components. For instance, the Victorian 245 Responsible Gambling Foundation has produced advertising raising awareness around the 246 normalisation of gambling in sport under the banner of "love the game not the odds." Thus, 247 harm minimisation most often includes proactive regulation of venue operations added to the 248 educational interventions of informed choice. It also suggests that education should extend to 249 the broader community, and not just to people currently at risk for developing a mental health 250 condition of disordered gambling. The harm minimisation approach also gives much greater 251 recognition to multiple factors that can contribute to gambling harm. These include changes to 252 gambling products, settings, marketing and access, as well as operator practices. For instance, 253 EGMs can be restricted to \$1 bets, skill-based gambling can be restricted to casinos, marketing 254 can be restricted to banner ads, and operators can be required to bar gamblers who exceed 255 time-limits (e.g., 3 hours of continuous gambling).

256 Increased attention to the harm minimisation model has coincided with greater recognition in the 257 last five years that gambling-related harm is not confined to individuals with a clinical gambling 258 disorder, but occurs across the spectrum of gamblers, as well as to their families and 259 communities (Browne et al., 2016, 2017). Gambling prevalence studies are increasingly 260 including measures of gambling-related harm (ACIL Allen Consulting et al., 2018; Browne at al., 261 2019: Hing et al., 2021: Paterson et al., 2019: Rockloff et al., 2020) which should help to 262 increase the focus on gambling harm and not just on problem gambling. There has also been 263 substantial criticism of the informed choice model in the academic literature accompanied by 264 calls for a public health approach to RSG that effectively minimises harm (Abbott, 2017; 265 Hancock & Smith, 2017a, 2017b; Livingstone & Rintoul, 2020; Orford, 2017; Wardle et al., 2019; 266 Young & Markham, 2017). The harm minimisation approach has not been voluntarily adopted 267 by the gambling industry, but there has been a shift in the last few years towards a more public 268 health focused, harm minimisation approach in gambling policy. Some jurisdictions, including 269 New Zealand, the UK, Victoria and the ACT have removed reference to "responsible gambling" 270 and refer instead to harm minimisation in their policies and practices. The UK Gambling

- 271 Commission has been particularly proactive in reducing some harmful aspects of gambling
- 272 products and environments, such as imposing maximum bet limits on EGMs and restricting
- advertising. Further, The Lancet Public Health Commission on gambling was established in
- 274 2020 which aims to set a progressive agenda to guide action to reduce population-level
- 275 gambling harms, to protect people from these harms, and to provide evidence-based care when
- 276 needed (Wardle et al., 2021).

277 **Consumer protection model**

- 278 Finally, the consumer protection model asserts that the public will benefit from restrictions being
- imposed that limit the impact of irrational gambling choices. Examples of such limits enacted in
- 280 overseas jurisdictions include limits on expenditure over certain timeframes (Norway), not
- allowing certain people to gamble (for example, recipients of financial aid in Singapore), entry
- fees to deter those with limited finances (Singapore), and mandatory exclusion based on
- 283 gambling frequency (Austria). Many of these consumer protection measures require tracking
- individuals' gambling, i.e., using smart cards or IDs used across all gambling venues/sites.
- 285 Consumer protection adds elements of prohibition to gambling, in terms of the types of products
- and services offered, and the people who are allowed to access gambling.

287 Preferred model

- 288 The academic community is strongly divided in terms of a preferred model of RSG. This division
- is largely between researchers who derive research funding from the gambling industry and are
- proponents of the informed choice model (Blaszczynski et al., 2004, 2008, 2011, 2021;
- Ladouceur et al., 2016; Shaffer et al., 2016, 2020), and researchers who recognise that a harm
- 292 minimisation and consumer protection approach, based on public health principles, has most
- potential to reduce gambling-related harm at the population level (e.g., Abbott, 2017; Hancock &
- Smith, 2017a, 2017b; Hing et al., 2020; Livingstone & Rintoul, 2020; Orford, 2017; Wardle et al.,
- 295 2019; Young & Markham, 2017).
- Innovative approaches that have most potential for preventing and reducing gambling harmassociated with EGMs and are consistent with the public health approach include:
- 298 Pre-commitment – This involves the use of a 'smart card' for gambling, wherein the individual 299 gambler sets money and time limits. Research generally shows positive impact, especially 300 among more frequent gamblers. However, if not mandatory, uptake is low and the program is 301 largely ineffective (South Australian Centre for Economic Studies, 2019). Pre-commitment is 302 most effective at reducing harm if it is mandatory for all gamblers across all venues and has 303 binding limits that do not allow further gambling above the limit set, i.e., no gambling is allowed 304 off-card. Reviews by the Productivity Commission and other highly regarded authors have found 305 that pre-commitment is likely to significantly reduce harm if introduced in an effective manner; 306 including being mandatory and avoiding high limits (Livingstone et al., 2019; Rintoul, 2017).
- 307 *Behavioural tracking systems to detect PG behaviour* These systems use a predictive model 308 (algorithm) that can identify harmful patterns of play, based on validated behavioural indicators

309 and risky gambling behaviour (Dragicevic et al., 2011; Percy et al., 2016). These systems relate

- 310 patterns of play, such as excessive time spent gambling or unusual accelerations in betting
- 311 behaviours, to the experience of gambling problems. This type of system is likely to only be
- 312 effective if used in conjunction with a smart card-type system used by 100% of players, i.e.,
- 313 within a pre-commitment system. Harmful behaviours trigger a manual response from venue
- 314 staff (a conversation with a player, exclusion) or a system response (pop-up dynamic message,
- break in play). These types of systems have been developed and implemented in some
- 316 jurisdictions (e.g., Automated Risk Monitoring (ARM), Adelaide Casino System), but
- 317 effectiveness rests on what types of interventions are used once risky play has been identified.
- 318 Crown Perth is trialling its own behavioural tracking system: the Crown Model (see
- 319 CRW.998.002.0622 paragraph 198).
- 320 Improved monitoring of self-exclusion Self-exclusion is one of the main tools used by venues
- 321 to prevent further harm. Ineffective monitoring for breaches is a major weakness of programs
- that rely on venue staff recognising excluded players from photographs (Hing et al., 2020). It is
- a high priority to improve manual detection systems and reduce the number of breaches.
- Research has identified ways to improve recognition, e.g., the use of facial recognition
- technology or compulsory ID scanning at entry. We understand that Crown Perth uses facial
 recognition technology (see CRW.998.002.0622 paragraph 150) but cannot comment on how
- 327 effective this is in identifying and intervening with those who breach a self-exclusion. Mandatory
- 328 pre-commitment is a superior system that would automatically prevent excluded patrons from
- 329 gambling.

330 Introduction of a family exclusion scheme – Family exclusion schemes allow family members to 331 apply to have the gambler excluded from gambling venues and appear to be most effective 332 when applications are assessed by an independent assessor, e.g., a counselling service, and 333 not by the venue itself which appears to be the case at Crown Perth (see CRW.998.002.0622 334 paragraph 206). An independent family exclusion scheme has been implemented successfully 335 in Singapore, with nearly 90% of families who participated in the scheme rating it as effective in 336 reducing harm to the gambler, the family, and the family's finances (Goh et al., 2016). However, 337 Singapore successfully manages exclusion breaches as it requires ID to enter gambling 338 premises. It may be that exclusion orders that are imposed on the gambler by their family, rather 339 than self-initiated, are more prone to being breached, supporting the requirement for venues to 340 improve monitoring of exclusion orders and gamblers on their premises. That is, a self-341 excluded gambler is committed, at least by degree, to behavioural change whereas an imposed 342 order may not garner the same buy-in from the gambler.

Greater use of venue exclusions – Venue exclusions could be used more as a harm
minimisation tool rather than a last resort for when a gambler is in crisis. A pre-commitment
system and behavioural tracking data could provide grounds for such harm minimisation
exclusions, based on validated indicators of harm (Hing et al., 2020). As noted above, a precommitment system and behavioural tracking data would enable the development of an
algorithm (predictive model) that could provide evidence to provide the grounds for venue
exclusion, based on validated behavioural indicators of problem gambling behaviour.

350 Alternatively, customers showing observable signs of highly probable problem gambling

- 351 (Thomas et al., 2014), such as trying to borrow money, asking for credit, and significant others
- 352 contacting or visiting the venue asking for the customer, could be considered as grounds for
- 353 venue exclusion. However, this latter approach relies on venue staff observing, reporting and
- 354 acting on these behaviours. Assessment by a trained gambling counsellor is recommended to
 - inform a decision for a venue exclusion, which has the additional benefit of linking the customer
 - 356 to professional help.
 - 357 *Pop-up messages on EGMs* – Pop-up messages are designed to interrupt play and to trigger 358 EGMs gamblers to consider ceasing their gambling session. EGMs are known for their 359 immersive qualities and can often result in gamblers losing track of the time and money they 360 have spent, due to being in "the zone" (Schüll, 2005, 2012). Studies have demonstrated some 361 marginal benefits of pop-up messages (Livingstone et al., 2019). However, it is likely that for 362 pop-up messages to cause any meaningful change in behaviour, they must be linked to a pre-363 commitment system and provide intelligent messages based on that individual player's time and 364 money expenditure, relative to the limits set, rather than a generic message.
- *Restrict alcohol service at EGMs* Due to the disinhibiting effect of alcohol and lack of concern
 or foresight for future consequences, gambling while intoxicated increases the likelihood of
 experiencing harm from gambling (Cronce & Corbin, 2010; Ellery et al., 2005; Ellery & Stewart,
 2014). It is also difficult for venue staff to observe any but the most obvious indicators of
 intoxication from those gambling on EGMs, due to the sedentary and private nature of the
 activity. Banning alcohol service at EGMs would encourage natural breaks in play that may
- 371 cause the cessation of a gambling session and is a relatively simple measure to introduce.
- 372 Implementing this ban would simply involve ceasing tray service of alcoholic beverages to
- 373 customers seated at EGMs. Instead, customers would need to go to the bar to purchase drinks.
- 374 Venue interactions with patrons showing problem gambling behaviours – Very few gamblers are 375 approached by staff in venues, even when displaying validated indicators of problem gambling 376 (Hing et al., 2020). There may be no regulatory obligation for staff to approach patrons and staff 377 may be actively discouraged from doing so. Mandatory intervention should be required when 378 patrons display indicators of gambling harm, with staff supported by training and 379 encouragement from management to proactively aid these patrons. Crown appears to use 380 observable characteristics of problem gambling (cf., Delfabbro et al., 2016) to intervene with 381 customers (see CRW.998.002.0622 paragraph 101). While use of observable characteristics is 382 good practice, there is no stated obligation to intervene beyond having a "conversation" with the 383 customer (paragraph 102). There may be value in providing patrons with overt behavioural 384 guidelines, so staff have a mandate to intervene. Pre-commitment data and behavioural tracking 385 data would also provide evidence to inform staff interventions. As discussed later, Crown has an 386 alert system that tracks the time carded players have been on site (see CRW.988.002.0622 387 paragraph 118), and this could be used for an improved system of staff interactions.
- *Restricting ATMs in gambling venues* Problem and regular gamblers use ATMs in gambling
 venues at higher rates than those less likely to be experiencing harm, with this convenient

access to money cited as a contributor to gambling problems (Stevens, 2017); Thomas et al.,

- 2013). Following the removal of ATMs from Victorian EGM venues, EGM revenue decreased by
- 392 9% (Thomas et al., 2013). However, it has been noted that EFTPOS cash withdrawals across
- 393 the bar in venues have increased, which may have nullified any changes due to ATM removal
- 394 (Rintoul et al., 2017). Setting low withdrawal limits on EFTPOS cash-out facilities and ATM
- 395 machines in close vicinity to EGMs is necessary to minimise harm from easy access to cash.
- 396 Structural features of EGMs – Certain structural changes to EGMs have been demonstrated to 397 decrease the likelihood of harm with little inconvenience for gamblers not experiencing 398 problems. It is important to note that there are structural changes that have been made to EGMs 399 in WA that do not result in any reduction in risk, such as the elimination of spinning reels. Our 400 analyses in response to question 3.2, for instance, suggests that these feature changes do not 401 appear to make the games safer. However, those characteristics that have been demonstrated 402 to reduce harm include: the removal of jackpots and bonus games; removing sounds 403 accompanying losses disguised as wins; reducing the maximum bet to \$1; the removal of note-404 acceptors; reducing the number of lines able to be played; provision of accurate game and price 405 information to players; and adjustments to the distribution of symbols across EGM reels 406 (Livingstone et al., 2019).
- 407 *Reduced accessibility of EGMs* – Accessibility to EGMs is a key predictor of gambling harm. 408 Venues with higher numbers of EGMs are associated with increased risk of gambling harm to 409 individuals, as is venue location, with many EGM venues in states other than WA located in 410 economically deprived areas (Markham et al., 2013, 2014; Young et al., 2012). Restricting the 411 hours that EGMs are available is likely to marginally reduce harm from gambling. South 412 Australia demonstrated a reduction in EGM expenditure following 24-hour gambling being 413 banned. Definitive research findings do not exist on the exact break period needed to materially 414 reduce gambling harms. In other jurisdictions, hotels and clubs with EGMs are typically required 415 to have a 6-hour shutdown period. However, when one venue closes, customers might go to 416 another venue with different opening hours, obscuring the effects of these shutdown periods. 417 Early morning shutdown periods (e.g., 4am to 10am) also have no effect on most customers 418 because they do not gamble during these times. Nonetheless, research is clear that customers 419 with a gambling problem make up a disproportionate number of customers gambling after 420 midnight. A 2008 shutdown study in NSW (Tuffin & Parr, 2008) found an increasing tendency for 421 EGM play after midnight as at-risk/problem gambling severity increased. Problem gamblers 422 were over-represented amongst those who played EGMs after midnight, with 45% reporting 423 playing at that time, compared to 8% of non-problem gamblers, 16% at low risk and 27% at 424 moderate risk gamblers. This trend was supported by a 2019 shutdown study in NSW (Smith et 425 al., 2019) which found that higher proportions of problem gamblers (31%) were present at 426 venue closing time, compared to 4-5% of the other PGSI groups; being people with fewer 427 problems. These findings indicate that a venue shutdown of at least 6 hours after midnight may 428 help to reduce gambling harm. Nonetheless, a more effective measure would be enforced 429 breaks in play after 3 hours (regardless of the time of day or night), given that gambling for more 430 than 3 hours is a validated indicator of harmful gambling (Thomas et al., 2014).

431 *Improve responsible conduct of gambling training* - Responsible conduct of gambling training

- 432 can be improved by increasing collaboration with help service providers and people with lived
- 433 experience of gambling harm. There is also scope to make the training more engaging and to
- 434 offer more comprehensive and refresher training opportunities, as well as ensure learning is
- 435 assessed more thoroughly. While Crown appears to use good practice in identifying gamblers
- 436 experiencing problems with reliable indictors (CRW.998.002.0622 paragraph 101), NSW club-
- 437 based research suggests that staff are often concerned about legal consequences and
- 438 implications for their employment when considering taking actions (Beckett et al., 2020). We
- 439 cannot assess if the same concerns affect Crown employees.
- 440 4.2 How effective at minimising gambling related harms are, or are likely to be, each of
 441 the measures set out at paragraph [1.11] above, or any other measures of which you
 442 are aware?
- 443 Per the discussion on gambling-harm, above, the principal criterion for effectiveness of any 444 measure is whether it is likely to reduce individual expenditures and time spent gambling to 445 sustainable levels. A proportion of gamblers will commit too much time and/or money to 446 gambling, and this over commitment will result in harms to themselves, others, or the 447 community. Thus, the goal of policy interventions should be to reduce such excess investment 448 into gambling without unnecessarily interrupting the benefits, including recreational enjoyment, 449 that accrue from engaging in a leisure activity. In answering this question, however, we will 450 focus on minimising harm rather than maintaining benefits.
- Given the multidimensional nature of gambling related harm, and the diversity of gamblers,
 there is unlikely to be a single "silver bullet" for reducing harm. It is more likely that meaningful
 reductions in harm can occur via the application of "silver buckshot" --- a broader set of
 interventions directed at the full range of gamblers and the situations they can end up in.
 However, any successful intervention included within this broad set will likely work because it in
- 456 some way helps to reduce either the total amount of time or money spent on gambling.
- 457 (a) Charging people a fee to enter casinos

458 Charging a fee for entry is likely to be moderately effective, assuming the fee is high enough to 459 discourage frequent visits to the casino. Ironically, however, an entry fee can be considered as 460 a built-in loss that adds to a player's total expenditure during a gambling session. Starting a 461 gambling session with a guaranteed loss could even prompt some gamblers to make riskier 462 bets to try and cancel out that loss, and so such an entry fee would have to be cleverly framed 463 to gamblers, in a behavioural economic sense, to mitigate the risk of induced loss-chasing. A 464 fee that fails to discourage attendance, other things held equal, could be counterproductive. For 465 frequent gamblers, entry fees may magnify total losses and add to the harm that gamblers 466 experience. Moreover, an entry fee, poorly considered, could make attendees stay at the venue 467 longer to avoid incurring a new fee upon return to the venue. An alternative would be to charge 468 significant fees only for frequent attendance, such as more than 4 days per month, rather than 469 for every visit. Discouraging visits beyond 4 days a month is consistent with a recommended

470 low-risk gambling limit (see Young, M. M., Hodgins, D. C., Brunelle, N., Currie, S., Dufour, M.
471 Flores-Pajot, M-C., Paradis, C., & Nadeau, L., 2021)

472 (b) Shutdown periods in which no gaming is offered for a number of hours;

473 There is evidence that breaks in play can be marginally effective in interrupting a gambling-474 session and causing people to reconsider whether they would like to continue playing (Palmer 475 du Preez et al., 2016). It is less clear if infrequent, but long, shutdown periods would be 476 effective. McMillen & Pitt (2007) found that a 3-hour shutdown in the ACT implemented in 477 September 2001 was self-reported as helpful to some problem gamblers and slightly reduced 478 club revenue (3-10%). In Nova Scotia, Canada, a midnight shutdown led to an 18% self-479 reported drop in spending amongst gamblers with problems and a net revenue fall of 5.1-8.7% 480 (Corporate Research Associates, 2005). Although some gamblers may be "on tilt," and 481 encouraged to go home during these shutdown periods, it would be unlikely to act as a sufficient 482 deterrent to people with severe gambling problems to return another day to win back losses. 483 Notably, a larger proportion of gamblers with pre-existing problems are likely to be present 484 during early morning hours, attributable to those with problems spending more time overall 485 gambling than those without problems (Rockloff, 2012) and the tendency for dissociation which 486 results in a lack of attention to time passing (Schluter & Hodgins, 2019). This indicates that the 487 early morning hours would be most appropriate for longer shutdown periods. New Zealand has 488 a scheme in casinos wherein machines are shut down for 15 - 30 seconds, with the display of a 489 responsible-gambling focused pop-up message after 30 minutes of play (Palmer du Preez et al., 490 2016). Evaluation of these occasional breaks-in-play show mixed results on gambling

- 491 behaviours, with Blaszczynski et al. (2016) finding gambling-craving increased with breaks
- 492 (Blaszczynski et al., 2016) and A. Parke et al. (2019) finding that betting speed slowed.

493 (c) Providing patrons with accurate information relating to the games they play, such as494 the actual odds of winning;

- Livingstone et al. (2019) suggested that EGMs should provide gamblers with accurate
- 496 information about theoretical loss/long-run cost of play, and this information is made
- 497 "unavoidable" by being shown on prominent information screens at game initiation and/or after
- 498 set periods of time. However, this information is currently not widely available on Australian
- 499 EGMs, and the information currently displayed on Victorian EGMs, as an example of another
- 500 Crown Casino location, has two clear weaknesses. First, the information is shown only on help
- 501 screens that are quite easy for gamblers to not see. Evidence from EGM players from other
- 502 jurisdictions, where such information is also relatively easy for gamblers to miss, suggest that
- 503 most gamblers are unaware of this information (Collins et al., 2014). Second, the information is
- 504 given in a format known as the "return to player" and is presented on screen as follows:
- 505 "Theoretical return to player of this game = 90%."
- 506 This statistic of 90% means that on average for every \$100 bet, \$90 will be paid out as
- 507 winnings. Research both from Australia (Beresford & Blaszczynski, 2020) and internationally
- 508 (Collins et al., 2014) suggests that most gamblers struggle to understand return to player
- 509 information. However, other research has found that when this information is "reframed" in the
- 510 equivalent house edge format, e.g. "This game keeps 10% of all money bet on average,"

- 511 significantly more gamblers have a better understanding of the return to player rate (Newall et 512 al., 2020a).
- 513 The Victorian gambling regulator has acknowledged that the return to player is widely
- 514 misunderstood by gamblers and is requiring the addition of a two-sentence descriptor to all new
- 515 EGMs in the jurisdiction. The addition of further clarification on the return to player came about
- as the result of a court case brought against Crown Casino Melbourne, from gamblers who
- 517 argued that the information provided was misleading (Federal Court of Australia, 2018). Despite
- 518 these changes, research suggests that house edge information is still better understood by
- 519 gamblers compared to even the improved return to player descriptors (Newall et al., 2020b).
- 520 Another question is whether the provision of information can actually affect gamblers' behaviour.
- 521 A study using a simulated online EGM and with small incentivised payouts suggested that
- 522 providing information framed as house edge rather than return to player not only improves
- 523 gamblers' understanding (Newall et al., 2020a), but can also have small statistically-significant
- effects on gamblers' behaviour (Newall et al., 2021). Specifically, 19.0% of participants refused
- to play on an EGM at all when given house edge information, compared to the 13.3% of
- 526 participants given return to player information. This study suggested the most positive effects
- 527 resulted from giving gamblers the following information about the long-run cost of play:
- 528 "This game keeps 10% of all money bet. It takes millions of plays for a gambling game to tend
 529 towards its average return. A gambling game will not return a minimum value of prizes in any
 530 given period of gambling." (findings from Newall, 2021)
- 531 (d) Messaging patrons during EGM play, and behavioural tracking tools;
- 532 There is only marginal evidence that pop-up messaging is effective in altering within-session gambling choices, with few ecologically valid studies and limited evidence for long-term impacts 533 534 on spending (Bjørseth et al., 2020). Behavioural tracking tools may be helpful if they are 535 mandatory, such as being implemented as part of a pre-commitment scheme. When given a 536 choice about whether to use behavioural tracking tools, most people do not bother. For 537 example, the voluntary YourPlay pre-commitment system in Victoria has had minimal up-take. 538 An independent evaluation found that in 2017/18 YourPlay cards were used in sessions 539 amounting to only 0.1 per cent of EGM turnover in Victorian hotels and clubs, with the highest in 540 any one venue being 0.8 per cent (South Australian Centre for Economic Studies, 2019). Pre-541 commitment systems need to be mandatory to enable pop-up messaging during play to reach
- 542 customers who might benefit from this measure.
- 543 (e) Low betting limits for individual EGM games;
- Low betting limits may be of some use, although they are a blunt tool for limiting losses. Some games may have low betting limits, but due to a high speed of play may nevertheless result in high losses over a short period of time. The most important metric, instead, is theoretical losses over a fixed period of time, such as expected losses per hour at maximum intensity and, alternatively, expected losses per hour from typical betting patterns. Most people bet using a mini-max strategy (Livingstone et al., 2008), betting with the minimum bet size but using the maximum number of lines on an EGM. Gamblers experiencing problems sometimes bet using
- the maximum bet size across maximum lines of play, termed herein the maxi-max strategy.

552 Consequently, the most probable losses on an EGM can be calculated as the expected loss 553 given the return-to-player percentage on the machine, for each strategy: mini-max or maxi-max, 554 over a fixed period (e.g., 1 hour at maximum speed of play). Imposing some limitation on the 555 dispersion, or variability of losses, could also be considered. That is, some EGMs may produce 556 relatively predictable losses with one hour of play, whereas others produce a range of large 557 losses and compensatory large wins. This volatility in returns, apart from theoretical losses, can 558 also have an impact on the proportion of gamblers who experience severe losses. Minimising 559 the proportion of gamblers who experience large losses over a short period of time will be 560 helpful in preventing gambling harm.

- 561 An important caveat to the above advice, however, is warranted. Gamblers often bet until their 562 bankroll is expended, so low bet limits are likely to extend the time spent gambling at least 563 marginally. Our in-venue research on EGMs, for instance, has shown that people respond to 564 wins during gambling by extending their betting session rather than leaving the venue with more 565 money retained (Browne et al., 2015). Ironically, more gambling wins most often translate into 566 more money lost within a single session. Gambling wins during a session are simply "gambled 567 away" in extended sessions. Since time spent gambling, as well as monetary losses, are a 568 source of gambling harm, lower limits that act to extend gambling sessions can be 569 counterproductive. Consequently, any effort to reduce bet sizes or theoretical losses should be
- 570 evaluated over time to ensure that it does not contribute to extending the time spent betting to
- 571 the detriment of gambler wellbeing.
- (f) 'Full' or mandatory pre-commitment schemes, such as those in use in Norway andSweden;

574 Mandatory pre-commitment schemes can be effective if they are designed to restrict 575 expenditures to amounts that are affordable for most gamblers. One of the key features of pre-576 commitment is the assumption that people can make rational judgements about acceptable 577 losses while in a "cool" state before gambling, whereas it is more difficult to make such 578 decisions in a "hot" state whilst betting and losing money. Unfortunately, most people, when given a choice, set pre-commitment amounts that exceed what they can realistically afford. 579 580 Often the chosen amounts are far in excess of their usual expenditures. For example, the most 581 common limit set amongst customers using the YourPlay system in Victoria Australia was \$1 582 million per day (South Australian Centre for Economic Studies, 2019). Consequently, to be 583 effective a default amount needs to be set carefully in consideration of either the profile of the 584 average gambler, and their likely budget situation, or customised according to knowledge of the 585 bettor's ability to sustain losses (e.g., income and credit checks).

(g) As a component of pre-commitment schemes, a low daily maximum spend (perhapsaround \$40 per session/day);

588 Daily maximum spend limits could be highly effective in reducing harm. Since the source of 589 gambling harm is difficulty limiting time and money spent on gambling, sharp daily limits could 590 reduce exposure to large losses. Like other forms of pre-commitment, it is possible to imagine 591 customised limits for people who have verified income and credit, suggesting they can sustain 592 larger losses.

593 (h) The use of EGM player tracking systems to link gamblers to treatment services;

It is important to make a distinction between harm minimisation and treatment services used by gamblers who are already suffering problems. Linking gamblers to treatment is likely to be effective only after gamblers are experiencing a significant amount of harm, and therefore would find some value in a treatment solution. Treatment referral, particularly at venues, has been likened to an "ambulance at the bottom of the cliff." True harm minimisation attempts to keep people from going over the cliff.

- 600 This argument does not suggest, however, that treatment referral is useless. Effective referral
- 601 may prevent some continuing harm for the small number who use it (Pfund et al., 2020).
- 602 Nevertheless, intensive investment in treatment referral and services implicitly accepts the
- 603 ideology of responsible gambling provision, where the gambler is the "problem," and they are
- primarily responsible for the harms that they have experienced. It does not recognise that the
- product can be unsafe, and that there should be protections built into the product. As an
- analogy, cars are sold with seatbelts. They are not sold without seatbelts, but instead with a
- 607 medical kit in case of a crash. EGMs have few, if any, safety features built-in, mostly consisting
- of statements about odds and responsible gambling messages. This information is most often
- 609 contained on second screens that need to be accessed by the gambler through button presses.
- 610 Due to the rapid betting, immersive experience and high cost of EGMs, they are inherently
- 611 dangerous with respect to overspend and the potential for addiction.
- 612 (i) Restrictions on the amount that can be won on EGM jackpots; and

613 Restrictions on jackpots can be modestly effective in reducing the amount of time and money 614 people spend on EGMs. The promise of jackpots can be an important enticement, particularly 615 for gamblers with problems, that such a major win might make them "whole" and resolve a 616 streak of gambling losses.

- 617 One proposed harm minimisation tool, which has not yet been implemented to our knowledge, 618 is jackpot expiry (Rockloff et al., 2015). Jackpots can be an enjoyable feature of EGMs that 619 wrap a potential lottery win into the usual experiences of occasional losses and less frequent 620 wins of more modest amounts. Nevertheless, as noted above, the presence of a jackpot prize 621 can inspire people to gamble longer in the hope of making up losses. A real-money EGM-based 622 experiment compared jackpots, as usually constituted, to jackpots that automatically "expired" 623 after a fixed number of bets. Participants in the jackpot expiry condition guit gambling earlier 624 and lost less money overall, since jackpots past the expiry period were advertised in a pop-up to 625 have expired and were "no longer available." A scheme involving jackpot expiry could be 626 implemented with carded play. Only people who use smart cards would be eligible for jackpots. 627 The smartcard system would keep track of the length of time that a player spent, or number of 628 bets placed, on a jackpot machine and notify the user when a pre-set limit (e.g., 2 hours) had 629 been exceeded and jackpots could no longer be won.
- 630 (j) Restrictions on advertising or marketing of gaming services.
- 631 Advertising works. Marketing and advertising of any product or service will raise public 632 awareness of the offering and, when properly constructed, improve upon its perceived

- 633 desirability. Thus, restrictions on advertising and marketing are likely to reduce uptake.
- 634 Logically, when fewer people gamble, a smaller number are likely to suffer from gambling
- related harm. Relatedly, of course, fewer people will experience recreational benefits.
- 636 Advertising restrictions may be modestly helpful when they reduce its effectiveness in recruiting
- 637 youth into gambling. Most people with gambling problems started to experience their first
- problems in adolescence (Carbonneau et al., 2015). Thus, to the extent that advertising and
- 639 marketing may be viewed by youth, regardless of whether it was specifically targeted at them, a
- 640 new generation of harmed gamblers is cultivated. Using most mediums of advertising, it is
- 641 difficult to entirely insulate youth from seeing gambling advertising and being affected by it.
- 642 However, there may be some marginal benefits in restricting advertising to times and places
- 643 where young people are less likely to view it.
- 644 A key strategy used to market gambling services, especially at casinos, is the provision of
- 645 loyalty points and comps that "reward" higher gambling expenditure. Restricting these
- 646 inducements to gamble, and to gamble more, would be an effective strategy to reduce
- 647 excessive money and time spent on gambling, thereby reducing gambling harm (Wohl, 2018).

5 Question: Crown Casino Perth's existing RSG program

5.1 How effective do you consider the Crown Casino Perth's RSG program is likely tobe at minimising gambling related harm? Why?

651 Crown Perth Casino's RSG program, codified at least partially within Crown Perth's Code of Conduct (hereafter "Code of Conduct," PUB.0007.0008.0431), contains the usual provisions of 652 653 an informed choice model of RSG (Hing et al., 2020). The informed choice model emphasises the personal responsibility of consumers to make informed decisions about their gambling. It 654 655 assumes that people will make rational gambling decisions if venues provide adequate 656 information and do not unduly exploit people. The informed choice model has been the 657 predominant approach used in RSG, including the current approach used at Crown Perth. 658 Under this model, certain RSG practices have become standard in gambling venues, including 659 those at the casino. These include providing RG and problem gambling signage and product 660 information; some restrictions on financial transactions, advertising and inducements; 661 preventing minors from gambling; having clocks in gaming rooms; offering exclusion and 662 counselling information to customers who request help; venue exclusion used at the discretion 663 of venue management; and training staff in RSG practices and observable signs of problem 664 gambling.

- 665 The Reno Model (Blaszczynski et al., 2004, 2008, 2011) has been particularly influential in 666 legitimising the implementation of an informed choice model of RSG by gambling venues. The
- 667 Reno Model is built on the foundational principles of personal responsibility and informed
- 668 choice. Despite being promoted as a public health framework to minimise gambling harm, it
- 669 conceptualises harm as emanating only from "problem gamblers." This narrow scope is
- 670 apparent in its aims which are: 1) preventing new cases of problem gambling through
- 671 encouraging gamblers to make informed choices; and 2) reducing problem gambling by
- 672 informing problem gamblers about sources of treatment. This same focus is evident in Crown

673 Perth's Responsible Gaming Code of Conduct (PUB.0007.0008.0431), which makes clear it is 674 concerned only with the most severe cases of problem gambling, being "focused on minimising 675 the potential for risks for the small number of customers who may develop difficulties associated with their gaming behaviours." This narrow focus ignores the now irrefutable evidence that the 676 677 harm from gambling is not restricted to "problem gamblers," and that many more people than 678 those who meet criteria for problem gambling experience gambling harm (Browne et al., 2016, 679 2017, 2019). Therefore, Crown Perth's RSG program can only have limited success in reducing 680 gambling harm amongst its customer base as it focuses only on preventing and reducing the 681 severe harm associated with a clinical level of gambling disorder and ignores the much larger 682 quantum of harm experienced by low risk and moderate risk gamblers who vastly outnumber 683 "problem gamblers." Browne et al. (2016, 2017) and Rockloff et al. (2020) used two different 684 sampling methods to estimate that between 70% to 85% of harms are happening to people who 685 are not problem gamblers, but instead low-risk, moderate risk and non-problem gamblers. RSG 686 programs focusing only on problem gambling therefore miss most of the customers who are 687 harmed by gambling.

The informed choice Reno Model explains that the gambling industry's main responsibility in

689 RSG is to provide minimum core information required for informed decision-making. Crown 690 Perth's RSG program (PUB.0007.0008.0431) is also predicated mainly on information provision. 691 This includes displaying RG logos, signage and information brochures at various locations 692 around the casino and making help service information available at the Responsible Gaming 693 Centre. Provision of information in this way is a passive approach to "building awareness of 694 responsible gaming programs and services" which the Crown Perth's Code of Conduct aims to 695 achieve. Crown hired academic advisors, named the Responsible Gaming Advisory Panel 696 (RGAP), to recommend changes to their responsible gambling practices.

698 It should be noted that two of the three 699 members of the RGAP are architects of the Reno Model (Blaszczynski) or contributors to 700 related publications (Nower) and continue to publish articles in support of their informed choice 701 model (e.g., Ladouceur et al., 2016; Shaffer et al., 2020). Some members of the RGAP panel 702 also have received other direct funding from the gambling industry for their research, and thus 703 cannot be reasonably considered "independent" providers of advice. This is not to impugn the 704 integrity of these researchers, but only to recognise that people can be subtly and even 705 unconsciously influenced by their financial self-interests.

697

- 706 The informed choice model argues that it is the personal responsibility of individual gamblers to 707 ensure that they are fully informed and to make appropriate choices based on their preferences, 708 circumstances, and financial and social limits. The Reno Model contends that: "Any responsible 709 gambling program rests upon two fundamental principles: (1) the ultimate decision to gamble 710 resides with the individual and represents a choice, and (2) to properly make this decision, 711 individuals must have the opportunity to be informed" (Blaszczynski et al., 2004 p. 311). The 712 expectation that the purported target of RG programs, those with a gambling disorder, can make 713 informed decisions and self-regulate their gambling if they are given adequate information is 714 flawed. Gambling disorder is a behavioural addiction characterised by impaired control over
- 715 gambling and persistence even when it causes significant problems (American Psychiatric

Association, 2013); by definition, impaired control involves imperfect decision-making (Hodgins,

2021). Browne et al. (2021) found that the most important risk factors for gambling harm were

being impulsive, using fewer safe gambling practices (e.g., having a dedicated budget for

gambling), and having incorrect beliefs about how gambling-games work. Making truly informed

decisions about gambling may also be too complex, given that most players do not understand

the payout odds for EGMs or that their outcomes are random (Hodgins, 2021). Assuming that

- customers who have developed a gambling disorder, and are already acting against their own
- and their family's best interests, will be able self-regulate their gambling once RSG information
- is made available in brochures in the venue is not consistent with research evidence.

725 The degree to which customers with a gambling disorder can truly exercise free choice in their 726 gambling decisions is also guestionable in the face of strong incentives to increase their 727 gambling. It is disingenuous that Crown Perth includes its customer loyalty program and 728 rewards scheme as part of their Code of Conduct (see PUB.0007.0008.0431 page 14), given 729 that these schemes incentivise higher expenditure rather than affordable gambling. The rewards 730 scheme allows customers to earn points by gambling, and to then redeem these points for 731 gambling chips or EGM credits so they can gamble more. The loyalty program has five tiers of 732 membership with increased benefits at each tier which may include free parking, special 733 member offers, premium gaming room access and more. Moving up a tier requires a certain 734 number of "status credits," a term that clearly links more gambling with enhanced self-worth. 735 Further, "casino points" earned through gambling are worth 3x more status credits than "lifestyle 736 points" earned through non-gambling expenditure (e.g., food, beverage, and hotel purchases), 737 which incentivises gambling over non-gambling expenditure. Evidence suggests that gambling 738 loyalty and rewards programs such as these particularly cause harm to disordered gamblers 739 because they are more likely to be program members and are disproportionately rewarded due 740 to their higher gambling expenditure (Wohl, 2018). In contrast, the customer data collected by 741 the casino and used as a basis to reward higher spending customers could be used to facilitate 742 harm minimisation through informing targeted interventions when customers display at-risk or 743 problem gambling behaviours, such as gambling more than 3 hours (Thomas et al., 2014). 744 However, it appears that this type of behavioural tracking system is not in place at Crown Perth. 745 beyond the Splunk system that monitors time spent on-site. That is, such as system is not 746 described in CRW.998.002.0622, where it would be expected to appear. Instead, customer data 747 is used to encourage gambling rather than to help customers stay in control of their gambling, 748 which is counter to the harm minimisation aims of RSG. As noted in Crown's Comp Strategy 749 (CRW.700.089.4528 pg. 1), the objective is "to reward and acknowledge premium members to 750 create memorable experiences that feel is relative [sic] to their gaming activity, invoking a sense 751 of surprise and delight that results in increased revenue" [emphasis added].

The RSG program at Crown, like other informed choice models of RSG, is a passive approach that overwhelmingly relies on customers asking for help with their gambling. While casino staff are trained in recognising observable signs of problem gambling behaviour, it is unclear whether they are encouraged or supported to respond when they see these signs. Research with gambling venues in other jurisdictions (Hancock, 2010; Hing et al., 2010, 2020; Hing & Nuske, 2009; Rintoul et al., 2017) indicates that staff rarely intervene or advise a supervisor in these situations, despite regularly seeing many customers displaying observable signs. 759 Management's prioritisation of gambling revenue over patrons' welfare may result in unwritten 760 pressure on staff to keep people gambling, to not interrupt "high rollers," and to ignore patrons 761 showing signs of gambling harm (Hing et al., 2020). Instead of approaching patrons of concern, 762 RSG training typically advises employees to report them to a supervisor. However, there is little 763 incentive for staff to report this upwards. Additional deterrents may include limited presence of 764 supervisors in front-of-house areas, lack of action from managers if they do report, and staff and managers often being too busy (Hing et al., 2020). We are not familiar with how these practices 765 766 are implemented at Crown Perth. But if venue interventions based on observed problem 767 gambling behaviours effectively minimise gambling harm in the casino, this would be a unique 768 finding in our decades of research into RSG. In contrast, it appears that the casino places low 769 priority on responding to observable signs of problem gambling behaviour to minimise harm. 770 Even though they have an automated system that tracks how long carded players have been 771 gambling for, the casino's documents indicate that an intervention is not triggered until a 772 customer has been on-site for 18 hours. This practice ignores the science that a customer who "often gambles for long periods (3+ hours) without a proper break" is "a good predictor of 773 774 problem gambling" and should receive an intervention (Thomas et al., 2014). If the casino's 775 practice in this area is indicative, it appears that customers already experiencing harm from their 776 gambling are routinely ignored under the current model of RSG and proactive efforts are not 777 made to prevent further harm, except in extreme cases where a customer has been gambling 778 for 18+ hours.

779 Based on the reasonable assumption that Crown Perth proactively initiates relatively few 780 interventions based on observed problem gambling behaviours, the RSG program essentially 781 relies on customers asking for help. It is a widely recognised and consistent finding that people 782 do not seek help for a gambling problem until crisis point, such as impending or actual 783 foreclosure on the mortgage, being chased by debt collectors, relationship breakdown, or 784 suicidal ideation or attempts (Hayer & Meyer, 2011; Hing et al., 2012; Loy et al., 2018). That is, 785 the RSG program offers help only after substantial gambling harm has occurred. In informed 786 choice models of RSG, the main measure provided to assist customers who ask for help is self-787 exclusion. However, the current state of knowledge indicates that self-exclusion programs are 788 underutilised by gamblers and therefore do not effectively prevent excessive gambling (Motka et 789 al., 2018). Self-exclusion is overwhelmingly instigated only when a customer has already 790 developed a serious gambling disorder and has experienced substantial and sustained harm 791 from their gambling. For example, one Australian study (Hing et al., 2015) found that prior to 792 self-exclusion, self-excluders reported average gambling debts of \$18,636, a monthly gambling 793 expenditure of \$2,361, and a mean PGSI score of 16.9 indicating severe problem gambling 794 symptoms that are well above the minimum score of 8 indicating problem gambling. The vast 795 majority of self-excluders also reported at least one or more financial harms (94%), relationship 796 harms (79.2%), and vocational harms (73.6%) caused by their gambling prior to self-exclusion. 797 A broader review of research into help-seeking for gambling found that financial issues, 798 negative emotions and crises were the main motives for seeking gambling help (Loy et al., 799 2018). Clearly, self-exclusion does not prevent harm. It potentially only reduces future harm amongst the minority of customers with a gambling problem who can overcome the barriers of 800 801 embarrassment and stigma to request a self-exclusion.

802 The informed choice model of RSG places responsibility for gambling problems on individuals. 803 This approach pathologises individuals and implies that only a very small proportion of people 804 have a problem with their gambling, which otherwise constitutes a harmless form of 805 entertainment for the population. For example, the Crown Perth's Code of Conduct 806 (PUB.0007.0008.0431) does this by referring to "the small number of customers who may 807 develop difficulties associated with their gaming behaviours". This language implies that only a 808 minority of customers experience gambling harm, that it is the individual who develops problems 809 rather than a product that causes problems, and that gambling is a harmless "game." This 810 downplaying of the seriousness of both gambling and gambling harm stigmatises those who 811 struggle to "gamble responsibly" by implying they are irresponsible gamblers who fail to self-812 regulate their engagement in a harmless activity. As one of our research participants expressed 813 after attending a gambling support group after many years of struggling with a gambling 814 problem: "We started to realise that we were normal people. We weren't people with two heads, 815 this social, retrograde, homeless, toothless wonder who frankly what can you do to help, they're 816 buggered anyway." The shame, stigma and negative stereotypes that are promulgated by the 817 "responsible gambling" terminology and informed choice model of RSG are significant barriers for people in recognising they are experiencing harm and to seek information, help and support. 818 819 Numerous studies have found that shame and stigma are the primary barriers to help-seeking 820 for gambling issues, including self-exclusion (Bellringer et al., 2008; Hing et al., 2012; Loy et al., 821 2018; Motka et al., 2018; Rockloff & Schofield, 2004).

822 The assignment of responsibility to the behaviours of gamblers also means that the informed 823 choice model of RSG pays insufficient attention to other contributors to gambling harm. These 824 include the provision of potentially addictive and harmful products, 24/7 accessibility, incentives 825 that reward high levels of gambling expenditure, and practices that prioritise profits over the 826 welfare of customers. Hodgins (2021) notes that reduction in tobacco use in many countries 827 since the 1970s "has not come solely through informed consumer initiatives focusing on 828 educating individuals that tobacco use is unhealthy - the change came about from incremental 829 changes in advertising, marketing, and taxation. In short, regulation of industry via government 830 policy is primarily responsible for reduction in tobacco use." Hodgins (2021) also points out that 831 safe product use also requires products to have safety features. Seat belts in cars undoubtedly 832 save lives and lessen injuries, but in order to have these benefits, seat belts need to be 833 provided in the first place. As Schüll (2012) notes, problem gambling is not just a result of 834 "problem gamblers", but also problem products, problem environments and problem business 835 practices. Our responses above have identified numerous measures that could improve the 836 safer provision of gambling in a way that goes well beyond the current approach at Crown 837 Perth.

838 In summary, the industry and regulatory model of RSG as implemented at Crown Perth is 839 largely focused on individual responsibility rather than product safety, and a false assumption 840 that gambling harm affects only a few regular gamblers. Instead, due to the expense of EGM 841 and casino gambling and the inherent redistribution of funds from losers to winners, as well as 842 to casino profits and taxes, most people cannot afford to gamble regularly without experiencing 843 at least some harm. Crown Perth's RSG program, even if followed diligently, is focused only on 844 assisting gamblers who are showing identifiable signs of problem gambling (see 845 CRW.988.002.0622 paragraph 102). This help is provided mainly by offering them self-

- 846 exclusion and information about support services in an effort to curtail continuing harm. Like
- other informed choice models of RSG, the Crown Perth program provides an ambulance at the
- 848 bottom of the cliff, but very few safety barriers at the top of the cliff to prevent gambling harm
- 849 occurring in the first place. This means that the RSG program misses the vast majority of
- 850 customers who are experiencing or at-risk of harm due to their casino gambling.
- 851 Vehicle safety has advanced considerably in the past 100 years with the introduction of safety 852 features such as seatbelts, airbags, anti-lock brakes, electronic brake-force distribution, and 853 electronic stability control; amongst other innovations. Casino style gambling games, including 854 EGMs, are largely devoid of advanced safety features. Car safety has not improved simply by 855 asking people to "drive responsibly." Vehicle deaths can only be marginally improved by offering 856 better ambulance services in case of an inevitable accident in an unsafe car. In short, products 857 must be designed with safety features built-in, rather than ancillary services given to people who 858 are already harmed. The informed choice model of RSG is inherently limited in its ability to 859 curtail harm, irrespective of how well it is conceptualised or implemented. It is almost wholly 860 ineffective at preventing harm since it is not designed with harm prevention in mind. Instead, it 861 attempts to address or arrest harm that has already occurred, and only amongst customers who 862 explicitly ask for help. The fact that problem gambling prevalence has increased in Australia 863 over the eight years between 2011 and 2019, and is mainly (but not solely) caused by venue-864 based EGMs (Hing et al., 2021) provides evidence that the industry's informed choice approach 865 to RSG has not met its stated aims of preventing and reducing gambling problems.
- 5.2 Do you consider that any of the other features of the casino's operations, including
 but not limited to the Crown Rewards loyalty program; the use of hosts; and the use of
 EDM advertising, are likely to have an impact on:
- 869 (a) the nature, extent and severity of any gambling related harm resulting from the
- 870 Crown Casino Perth's operations; or
- 871 (b) the effectiveness of its RSG program? If so, why?

872 Loyalty Program

- 873 "Loyalty program" suggests that the operator is trying to maintain a customer and prevent them 874 from switching to another provider. Since Crown operates the only legal casino style gambling 875 within Western Australia, it is implausible that the program is meant to maintain loyalty to the 876 brand. Instead, the "loyalty program" is a mechanism for encouraging more frequent visits and 877 higher expenditure. Given that gambling is an expensive form of entertainment for most people, 878 frequent visits are necessarily and demonstrably associated with gambling harm and gambling 879 problems. Encouragement of frequent visits and higher gambling expenditure is not compatible 880 with minimising gambling harm. The loyalty program at Crown Perth awards loyalty points 881 directly based on customer expenditure (see CRW.700.041.0164 pg. 7). In essence, it directly 882 encourages and rewards more gambling.
- 883 An article by Prentice and Wong (2015) has been previously cited as evidence that loyalty 884 programs are not associated with gambling problems. We note here, however, that this is a

- 885 misinterpretation of their findings. Instead, Prentice and Wong found that some attitudes
- towards loyalty programs, and not membership in such programs, was uncorrelated with
- gambling problems. That is, people with gambling problems in Macau were not more likely on a
- combined index to believe that a loyalty program; 1) enhances status, 2) has many redemption
- 889 options and 3) provides special privileges, when compared to other gamblers. This finding does
- 890 not demonstrate, however, that people with gambling problems are not attracted to the benefits
- of loyalty programs. In fact, it appears from inspection of the mean scores in Table 2 of the
- article that gamblers, including gamblers with problems, somewhat agree with these statements
- 893 endorsing the value of loyalty programs.
- Delfabbro and King (2020), in a recent meta-analysis of 7 prevalence studies, found that loyalty
 program membership was consistently associated with people having gambling problems. At
 least 40% of gamblers with problems were loyalty club members, whereas only about 10% of all
 gamblers similarly had memberships. It is not surprising that keen gamblers, which include
 gamblers with problems, should take advantage of the benefits of loyalty programs. To the
- 899 extent that such programs encourage frequent visits to the casino, and higher gambling
- 900 expenditure, loyalty programs have strong potential to exacerbate gambling problems.

901 Hosts

- 902 The employment of hosts for gambling, outside their use for destination gamblers, is also a means to encourage frequent visits. To the extent that hosts operate to extend the stay and 903 904 continue gambling by locals, they contravene other practices meant to limit time and money spent gambling to manageable levels. Destination gamblers who come to Western Australia 905 906 from other states or countries, in contrast, are less likely to be harmed by perks offered by 907 hosts. Their time spent gambling is often limited by their total planned vacation time. These 908 perks may contribute to more rational decisions to return to Western Australia and the casino as 909 a vacation destination. One of the roles of hosts is to award comps to high spending customers. 910 As previously discussed, these comps also encourage and reward frequent visitation and high 911 gambling expenditure, and target the customer group most likely to already be experiencing
- 912 problems and harms associated with their gambling.
- 5.3 Do you have any comments as to the approach or conclusions of the ReviewReport?
- 915 As we have noted earlier, the review cannot be fairly considered as "independent" advice, given 916 that some authors have a substantial body of work funded by the gambling industry. Irrespective 917 of whether industry guides the research program or guestions, voluntary funding of research by 918 industry can cloud outcomes. Since researchers are aware that results that are negative to 919 industry interests might, and most likely will, impair future funding, there will always be a 920 temptation to self-censor research that produces unwanted outcomes. For this reason, gambling 921 industry funded research in Australia and overseas has tended to focus on gambling as a 922 mental health disorder that affects a very few people and discounts the pervasive harm that 923 occurs to the wider set of persons who engage in gambling.
- 924 The review accepts uncritically the appropriateness of the informed choice model for gambling925 harm mitigation. Disordered gambling, however, by definition is characterised by impaired

926 control. If gamblers with extreme problems were able to control their gambling, there would be

- 927 no need for interventions. Moreover, the suggestion that more information alone, in terms of
- 928 odds and safe-gambling tips, can solve a problem of impaired control is not consistent with
- 929 research evidence.

930 A review should instead 1) be conducted independently and funded by government, 2) compel 931 cooperation by industry, and 3) employ a modern harm minimisation and consumer-protection 932 model grounded in public health that places product-safety as a core consideration. There is no 933 strong consideration in the review (CRW.507.001.1078) for how Crown might limit individual 934 spending of customers to affordable limits based on knowledge of their customers and 935 characteristics of their gaming machines. Without an updated model for adequately dealing with 936 customer overspend, in terms of both time and money, the review endorses the appropriateness 937 of an outdated model that is demonstrably not reducing or minimising gambling harm.

938 6 Question: The nature of EGMs

939 6.1 What are the defining features or characteristics of an EGM?

Electronic gambling machines, otherwise known as slot machines or pokies, are a collection of
games that have at least some residual resemblances to traditional games with mechanical
reels and winning symbols. A mechanical slot machine, Liberty Bell, was invented by Charles
Fey in San Francisco, had three reels, a mechanical pull (one-arm bandit) and automated
payouts. EGMs replicate at least some features of this original mechanical machine in electronic
or partially electronic form by having reels with symbols that, when arranged in a specified
sequence, will produce a winning payout.

947 Several other structural characteristics of EGMs can encourage persistence and facilitate 948 dependency (e.g., Dowling et al., 2005; Griffiths, 1999), described by Schüll (2012) as "addiction 949 by design." These include sound effects, visual cues, the mathematical underpinnings of EGM 950 games, and price and prize structures; as well as within-game elements, such as tokenisation, 951 features, multiline betting, near misses, and losses disguised as wins (Livingstone, 2017; J. 952 Parke & Griffiths, 2006). The variable ratio reinforcement schedules used in EGMs, where 953 behaviour is reinforced through random rewards after an unpredictable number of bets, is 954 known to encourage rapid uptake and persistent repetitive behaviour in the hope of being 955 rewarded (Ferster & Skinner, 1957). The high event frequency and continuous nature of EGM 956 games also facilitate persistence and loss chasing, which are defining characteristics of problem 957 gambling (Ferris & Wynne, 2001). EGM play assists avoidant-based coping because it 958 facilitates dissociation and trance-like absorption, a state that players describe as "the zone" 959 (Livingstone, 2005). The goal in "the zone" is to extend time-on-device, rather than to win 960 money, and money itself can lose any external value except as a means to sustain play and 961 time out from life's stresses and worries (Schüll, 2002, 2012). The behavioural conditioning and 962 dissociative effects of EGMs facilitate harmful patterns of play, particularly amongst emotionally 963 vulnerable individuals.

964 There are other electronic games, such as video poker, that do not have reels and typically 965 mimic features of other traditional games. These games are generally termed automated table games, or innovated games, when closely replicating the functionality of traditional casinogames.

968 6.2 Are EGMs generally more likely to have the potential to cause or contribute to 969 gambling related harms than other forms of gambling? If so, why?

970 In a Victorian population-representative sample, Rockloff et al. (2019) analysed the relationship 971 between the gambling harm people experience and the products that people use. Although 972 frequent gamblers often use multiple products, it is possible with regression analysis to infer the 973 relative harm attributable to each product. Playing EGMs, betting on eSports, playing Keno, and 974 informal betting (e.g., playing cards for money at home) were products most strongly associated 975 with gambling harm. These forms contributed more to harm than others, such as horse-race 976 betting or buying instant scratch tickets. Since EGM gambling is more common in Victoria than 977 any other forms, except horse race betting and lotteries, the overall contribution to harm by 978 EGMs is greater than any other product. Using dominance analysis, a type of regression, we

979 estimated that EGMs contribute to 37.7% of all gambling harm that occurs to Victorians. Thus,

- 980 EGMs are generally more harmful both because people who play them are more likely to suffer
- harm than when participating in some other forms, and many people in Victoria play the pokies.

Findings are similar in Western Australia. Our answer to question 3.2 reveals that use of EGMs
 contribute to the largest individual risk of having gambling problems. Despite the limited
 availability of EGMs in Western Australia, they also contribute to the largest proportion of total
 harm relative to other gambling products.

EGMs are characterised by structural features that make them likely to contribute to gambling 986 987 related harm. EGMs allow a high pace of betting, and results of bets are known within seconds. 988 This allows winning amounts to be quickly converted into new bets. Consequently, wins are 989 often recycled into losses within the same session (Browne et al., 2015). Even on low 990 denomination machines, betting at maximum lines will often produce high theoretical losses, or 991 cost-to-play, relative to other forms of entertainment. In Australia, for instance, EGMs that are 992 played at maximum intensity can produce a theoretical loss of \$1200 per hour (Productivity 993 Commission, 2010; see Table 11.2). Actual losses, if unlucky, may be substantially higher. 994 There are few other entertainment options that cost as much on a per-hour basis, making EGM

995 gambling prohibitively expensive for most people to play on a regular basis.

996 People who gamble on EGMs bet small amounts of money on each spin, and experience 997 frequent losses. Sometimes, depending on the jurisdiction, they may experience "losses 998 disguised as wins," where small winning amounts are less than the amount wagered. These 999 events give the impression of a positive outcome, with winning lights and sounds, when a small 1000 loss is the true result. Furthermore, small losses are frequent and easily forgotten, whereas wins 1001 are typically much larger and rarer, and thus better remembered. This results in a memory bias, 1002 capitalising on the so-called availability heuristic described by psychologists (Tversky & 1003 Kahneman, 1973), wherein wins loom large in people's recollection of their gambling. The 1004 results of this bias are that people often underestimate how much they spend on gambling and 1005 may incorrectly believe that they are in a net winning position despite having lost money over 1006 time.

1007 6.3 Having regard to the National Standard; the features of the Appendix and Policy

- 1008 (and particularly table WA4.2 of the Appendix); and the features of the appendices to
- 1009 the National Standard of the other States and Territories:

1010 (a) what are the features or characteristics of Australian EGMs, if any, that are likely or

1011 have the potential to cause or contribute to gambling related harm;

1012 Gambling harm is related to unsustainable amounts of time and money spent on betting.

- 1013 Features of EGMs that contribute to long or frequent gambling sessions and high gambling
- 1014 losses are inextricably linked to gambling related harm. There is no magic formula for a "safe"
- 1015 EGM, or any other gambling game, that does not reduce time spent on gambling and/or
- 1016 high/unsustainable gambling-losses.
- 1017 The most effective measure for a "saf<u>er</u>" EGM incorporates designs that reduce monetary
- 1018 extraction in the form of lower theoretical losses per hour of gambling. Another component is a
- 1019 design that reduces or restricts the volatility of returns on the game. Some games have high
- 1020 volatility, which means that a few gamblers win a lot at the expense of many gamblers who lose
- 1021 proportionally more when compared to a less volatile game. The net consequence of high
- volatility is that more gamblers will be in a losing position, and more will have large losses,
- 1023 compared to a low-volatility game played for a similar length of time (Turner, 2011). A game can
- use a high volatility of returns to successfully "hide" a higher house edge (ratio of theoretical
 losses to total amount bet) in that the high occasional win masks the stronger overall tendency
 towards losing (Turner, 2011).
- 1027 EGMs can also be designed to restrict or discourage the amount of time people spend on the 1028 machine. Jackpot expiry (Rockloff et al., 2015), as noted above, can be a mechanism for
- 1029 introducing a behavioural nudge that suggests a time when people might want to quit playing -
- 1030 and take their bankroll with them. Pop-up messages, such as those used in New Zealand
- 1031 (Palmer du Preez et al., 2016), can provide breaks-in-play that can similarly suggest moments
- 1032 where people can consider a halt to their gambling and thereby stem their losses.
- (b) to what extent are those features and/or characteristics shared by Crown PerthEGMs;
- 1035 The extent to which Crown Perth EGMs are different to other EGMs is best evaluated not by the 1036 game features, but rather by behavioural outcomes and attendant losses. Spending less in each 1037 session and/or gambling for a shorter period would tend to demonstrate that the games offered 1038 are likely less risky. Similarly, any extent to which the games are slower and have lower bet 1039 sizes (maxi-max and typical mini-max strategies), they will have lower extraction and be less 1040 likely to add to gambling related harm. Lastly, as noted above, lower volatility is also associated 1041 with fewer people losing and losing smaller amounts even for a fixed rate of extraction. As noted 1042 in our data analyses, above, the gambling-problems attributed to EGMs in WA are explainable 1043 by the level of participation. Therefore, there is no good evidence of which we are aware that 1044 Crown Perth EGMs are demonstrably safer relative to those elsewhere in Australia.
- Some but not all features of EGMs outlined in Table WA4.2 within DLG.8001.0045.6478 have
 implications for consumer protection. We have no reason to believe that the "appearance" of

- 1047 machines, inclusive of prohibiting spinning reels, has a meaningful impact. In contrast, the
- 1048 speed of play, limited to 5 seconds, will reduce the cost of play where other factors are held
- 1049 constant. Cost of play, in terms of theoretical losses per hour both at typical and maximum
- 1050 rates of play is a critical issue for player protection. Low cost-of-play will limit losses. Similarly,
- 1051 restricting the return-to-player to a minimum of 90% is well advised, and for the same reason.
- 1052 High rates of return to player limit losses irrespective of other game features. The independence
- 1053 of outcomes is an important feature as well since dependent outcomes might encourage a
- 1054 player to engage in additional games to capitalise on a perceived investment into the machine.
- 1055 However, other features listed are primarily concerned with maintaining the apparent fairness of 1056 the games. In our opinion, these other features have little function in terms of consumer
- 1057 protection.
- 1058 The harm minimisation measures listed in the National Standards
- 1059 (GWC.0001.0007.0185_0001) primarily relate to ensuring that the games are perceived to be
- 1060 fair. The standards endorse the Informed Choice model of responsible gambling provision,
- 1061 specifically by requiring that games "provide information to facilitate informed consent" (see item
- 1062 3.3 on pg. 12). There do not appear to be consumer-protection standards aimed at limiting the
- 1063 cost-of-play, which is arguably the most important target for protecting gamblers.
- 1064 (c) what are the features or characteristics of Australian EGMs, if any, that are likely or1065 have the potential to mitigate or minimise gambling related harm;
- 1066 EGMs are inherently risky. This riskiness is a design feature and not a bug. Winning amounts for a few need to be financed by losses of the many. In addition, losses must cover the costs of 1067 1068 operations, the profit of the provider, and the tax revenues demanded by government (Adams, 1069 2007). Tax revenue is the largest amount by far, constituting about 30% of the losses on EGMs 1070 (Queensland Government Statistician's Office, Queensland Treasury, 2021). Part of the harm 1071 from gambling is caused by the extraction from these three factors. However, even in a perfectly 1072 fair game, with no house edge, there will be winners and losers. Consequently, some harm in 1073 gambling is caused simply by redistribution of funds from losing parties to winning parties. Minor 1074 interventions, such as preventing machine celebrations of losses disguised as wins may have 1075 some marginal benefits (see PUB.0018.0002.0043 pg. 6) but cannot resolve the problems
- 1076 inherent in a risky product.

1077 The most protective factor for EGMs is to limit rates of extraction (operation, profit, taxes, wins) 1078 that cause the product to be expensive. One simple, although blunt, method is to have low betsize limits, as recommended by the Productivity Commission Report (2010). This approach was 1079 1080 taken by the UK government in April 2019, where the maximum bet on the most common form 1081 of EGM was reduced from £100 to £2, a move attributed with reducing gambling expenditure on 1082 this product by just under half (Witherow, 2020). Although this intervention was on the surface 1083 successful, it is not known how much of that reduction in gambling expenditure simply migrated 1084 to other forms of gambling, such as the mobile casino games which are also available in that 1085 jurisdiction, and which do not have corresponding bet-size limits. Therefore, arguably a better 1086 alternative is to insist on games that limit typical and maximum losses over a fixed period, and 1087 likewise provide opportunities for gamblers to guit before expending all their funds. Jackpot
expiry, pop-up messages, and pre-commitment limits all provide opportunities to quit early andlimit losses, as a part of a silver buckshot approach.

- (d) to what extent are those features and/or characteristics shared by Crown PerthEGMs;
- 1092 With reference to the WA appendix to the National Standard (DLG.8001.0001.5353 pg. 4),
- 1093 maximum bet sizes are considered on a game-by-game basis by the Gaming and Wagering
- 1094 Commission. Therefore, it does not appear that the one simple blunt method of limiting overall
- 1095 bet sizes is employed in WA. We have no knowledge of whether a more sophisticated, and
- 1096 better, alternative is employed by the Commission, such as limiting theoretical losses.
- (e) are there any unique features or characteristics of Crown Perth EGMs that are likelyor have the potential to cause or contribute to gambling related harm; and
- 1099 Although somewhat typical in the industry, there appears to be celebrations, including winning
- sounds and animations, associated with "wins disguised as losses" (see CRW.700.062.1031).
- 1101 That is, on at least some games, a win can occur that returns less than the amount bet.
- 1102 Arguably, it is deceptive to celebrate such wins, since they are not net-wins, but in fact monetary
- 1103 losses. Most regular bettors will be aware of wins disguised as losses, but their behaviour may
- 1104 nevertheless be influenced by these secondary reinforcements.
- (f) are there any unique features or characteristics of Crown Perth EGMs that are likely
- 1106 to have the potential to mitigate or minimise gambling related harm?
- 1107 There are no clear features of Crown Perth EGMs that make them safer than EGMs available in 1108 other jurisdictions. In fact, our analyses above suggest that people who play EGMs in WA are 1109 just as likely to have gambling problems as people who play EGMs elsewhere. The main 1110 distinguishing characteristic of WA EGMs seems to be the lack of spinning reels. We are not 1111 aware of any evidence that this distinction is important or should have an effect on player 1112 behaviour. The progressive revelation of rotating disks (more generally referred to as "symbols" 1113 on EGMs) mimics the appearance of reels in most respects, such as shown in the game Stacks 1114 of Magic Quick Strike Triple (see CRW.700.062.1031). The falling symbols on Cats, Hats and 1115 More Bats (CRW.700.062.1036) are even more like traditional EGMs, since the symbols fall in 1116 the vertical direction. The intention of this limitation may have been to reduce the appearance of 1117 near misses, although this perceptual phenomenon is less important on multi-line EGMs. Most 1118 people play "all lines," and therefore are not keenly aware of near misses. We know of no 1119 evidence that other games without paylines, such as Fireball Bingo (see CRW.700.062.1030).
- 1120 are demonstrably safer.

1121 7 Question: EGM usage

- 1122 7.1 Are you aware of any research as to limits or thresholds for EGM usage which, if
- 1123 exceeded, indicate an elevated risk to the EGM user of gambling related harm? If so,
- 1124 please explain what that research reveals and provide any commentary of your own in
- 1125 respect of that research and its application in practice that you consider appropriate.

1126 Canadian research (Young, M. M., Hodgins, D. C., Brunelle, N., Currie, S., Dufour, M. Flores-1127 Pajot, M-C., Paradis, C., & Nadeau, L., 2021) suggests that gambling expenditures should be 1128 limited to no more than 1% of household income before tax, and betting should be limited to no 1129 more than 4 days per month. This research is likely applicable to Australia, given similar incomes and tax rates between the two countries, as well as EGMs that operate similarly. These 1130 1131 research-backed limits are likely to keep harm to minimal levels by minimising both time and 1132 monetary investments into gambling. More recent research using population representative data 1133 from Tasmania suggests that risk for gambling problems increases linearly with consumption of 1134 gambling products (Greenwood et al., 2021). This research suggests that there may be no 1135 precise "safe" level of gambling, but rather a judgment must be made to identify where a level of 1136 risk is tolerable and justified given the recreational benefits of gambling. The point at which such 1137 risk might be determined to be tolerable was identified by the authors as a topic for future

1138 research.

1139 8 Question: The evolution of poker machines

1140 8.1 What are the features or characteristics of a 'poker machine' in Australia, and have

1141 those characteristics changed from the time that poker machines were first introduced

1142 *into Australia until today? If you consider that the features or characteristics of poker*

1143 machines differ in different parts of Australia, then please explain those differences.

- 1144New South Wales became the first jurisdiction to permit the use of poker machines in clubs in11451956. However, poker machines have been imported and used from around 1900, appearing
- shortly after their 1894 invention in the United States. Spinning reel games using
- 1147 microprocessor technology were first produced in Australia in 1978 and have since evolved into
- 1148 fully computerised forms that most mostly lack the original mechanical reels. These new games
- 1149 have virtual reels that simulate the mechanical systems. Western Australian poker machines
- substitute disks for reels. Randomisation is now controlled by microprocessors rather than a
- 1151 physical gear-based system that was previously used to generate randomised outcomes. The
- 1152 virtual reels of a computerised poker machine spin, and the musical properties of the games
- recycles the nostalgia of the physical sounds of gears that were previously necessary for machine operation.
- 1155 There have been several innovations in poker machines since fully computerised forms
- emerged in the 1980s and 1990s, many of which originated with Australian manufacturers. The
- 1157 most important innovations are frequent inclusion of free spins, where a special combination of
- 1158 winning symbols allows for a number of free "games." These games allow additional wins on the
- game without further bets, temporarily avoiding potential losses, and are highly valued by
- 1160 gamblers. Other special features, termed mini-games, are embedded as other special outcomes

1161 on poker machines. These mini-games are too numerous to describe here, but as an example,

- include the ability to make a fair bet on the flip of a virtual card (i.e., choosing which of two
- 1163 hidden cards has the highest value for a double-your-money bet). Both free-spins and other
- 1164 special features unlock a special mode on the machine where subsequent net wins are more
- 1165 likely to occur. This makes the payouts of the game particularly lumpy over time, where a
- 1166 sequence of wins is concentrated in discrete periods of time. Often, gamblers will be reluctant to
- 1167 leave a machine before winning a feature, which can maintain persistence in gambling in the
- 1168 face of mounting losses.
- 1169 Jackpot wins are another feature of poker machines that can motivate persistence and thereby
- 1170 contribute to losses. Jackpots can be for fixed amounts or can accumulate over time as
- 1171 individual bets feed the pot. Jurisdictions in Australia have maximum jackpot sizes that, by
- regulation, vary by state or territory. Our research sponsored by Gambling Research Australia
- showed that gamblers at risk for gambling problems both preferentially select jackpot-oriented
- 1174 machines (e.g., machines with large jackpot prizes) and play more intensively on them (Browne 1175 et al., 2015).
- 1176 8.2 In answering this question, please explain the:
- (a) mechanisms pursuant to which poker machines were and are operated; and
- (b) process of playing on a poker machine (or playing a game on a poker machine).
- 1179 The outcomes on Australian poker machines must be randomly determined and not depend on
- skill. Minor exceptions to this rule, termed skill-based gambling, are being introduced into
- 1181 Australia more recently, although these currently represent a small fraction of the market.
- 1182 Most commonly, gamblers choose a bet size and several "lines" on which to bet. The "lines" 1183 multiply the value of the bet size to determine the total dollars at risk. These paylines are 1184 opportunities for a bet to pay off, assuming winning symbols align along a chosen payline. If 1185 gamblers fail to bet "all lines", there is a possibility that a winning combination of symbols on the 1186 machine will be missed. That is, a single spin of the game can produce several winning 1187 outcomes that are realised across a number of lines. However, only the selected lines produce 1188 winning outcomes. Since many gamblers have the fear-of-missing-out, they bet on the 1189 maximum number of lines, but to limit their expenditures they also choose the minimum bet size 1190 (Livingstone et al., 2008). This selection typically reduces the volatility of their returns. They are more likely to win on any one spin, but since their investment on the winning line is necessarily 1191 1192 reduced, their winning amount will be curtailed. In contrast, the bet with the maximum likely 1193 payout, in most games, is to bet one line with the maximum bet size. This combination is 1194 seldom chosen in practice, however, since wins would be very rare - although compensating 1195 large when they do occur.
- 1196 Other variations on the general mechanics, outlined above, create an almost indescribably large 1197 universe of games. Nevertheless, the apparent complexity of these games masks an underlying
- 1198 common maths represented by a discrete number of outcomes from each game with
- 1199 probabilities that add to 1. These outcomes are detailed in a payout table that describes the
- 1200 associated probabilities for each payoff. Apart from skill-based games, the only modifiable

aspect of play is bet size and number of lines played, where the player can select their risk oneach bet.

8.3 To the extent you consider there is any distinction between poker machines and
games played on poker machines please explain how poker machines games have
changed from the time that they were introduced into Australia until today.

- Per the discussion above, poker machines have evolved to include virtual reels that visually 1206 1207 represent the outcomes described in a payout table. Most modern poker machines include a 1208 special feature, often free spins, that create lumpy payout structures in time. The machines are 1209 much more likely to pay out wins during the operation of the special feature, which appear only 1210 sporadically during a gambling session. Many gamblers continue to play in hopes of winning a 1211 special feature that can generate large winning outcomes or recapture losses from an extended 1212 period of regular operation. Special features generally increase the volatility of returns on a 1213 machine, and thus produce large wins for some bettors in a session at the expense of more 1214 losses for those who leave without winning a feature.
- Moreover, the symbols on the reels are often weighted such that the frequency of symbols that appear on reels as they spin (or flip on the screen, per WA EGMs) does not correspond to the likelihood that the symbols will appear in the resting configuration. Consequently, people can misapprehend the likelihood of achieving winning outcomes from special or valuable symbols, such as wildcards, that seem to appear frequently during a spin but rarely appear in the resting configuration.
- 1221 The other feature of modern poker machines that make them distinct from mechanical one-1222 armed bandits is the ability to bet on multiple lines, which has the effect of allowing bettors to 1223 choose the volatility of the game. People who bet on multiple lines are more likely to win, but if 1224 they bet small amounts on each line, their wins will also be correspondingly small (i.e., low 1225 volatility).
- 8.4 Please also explain whether you consider there to be a distinction between poker
 machines and any other types of EGM and, if so, list and explain those differences.
- EGMs are generally considered to be synonymous with poker machines in Australia, with the former term uniting gambling machines known under different names globally, including slots in the United States and Canada, video lottery terminals or VLTs in some US and Canadian states (which pull prize outcomes from a central server), and fruit machines in the UK. EGMs generally have reels with symbols indicating prizes, although EGMs in WA substitute disks for reels.
- 1233 The primary "other" games that nevertheless have a similar form-factor, including a standalone 1234 console design, are skill-based EGMs and innovated games. Skill-based games include some 1235 element of real or perceived skill that alters gambling outcomes. They often mimic features of 1236 video games to draw players of these games into gambling. Although these games come in a 1237 variety of forms, a common example is a first-person shooter type game where each "hit" scored 1238 on a virtual opponent counts as a "bet" placed. Ironically, high skill in these games can translate 1239 into faster betting and consequently greater losses over a fixed amount of time.

- 1240 Innovated games are traditional games, such as bingo, roulette, or big wheel, that are
- 1241 automated using digital technology (Rockloff et al., 2016). These games most often replace the
- 1242 croupier from the gambling game and have the advantage for the casino of occupying less floor
- 1243 space.

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Appendix I: Regression Models

Analysis

Our goal was to model the contribution of different forms to the aggregate amount of gambling problems in Western Australia and other states (jurisdiction). All analyses and calculations were population weighted with respect to estimates by the Australian Bureau of Statistics, 2019. Since gambling participation is a necessary causal element for the development of gambling problems, our first step was to construct a linear regression model of PGSI scores based on frequency of participation in each form. The model intercept was excluded on theoretical grounds since gambling problems are assumed to be zero in the case of non-participation. Both PGSI and frequency (times per year) were transformed using log(x + 1) in order to stabilise variance. We re-ran analyses on non-transformed PGSI scores (not reported), to determine sensitivity to transformations, but found no substantive differences. We calculated the variance inflation factor (VIF) to test for multicollinearity. The largest VIF was for race betting (1.7), which was well below conventional thresholds of concern (~5). A nested model comparison was made with a moderation model (all forms by jurisdiction) in order to check for non-homogenous effects of form. The estimated beta coefficients were then treated as independent per-person contributions of each form on gambling problems, conditional on participation. These were then multiplied by the aggregate (transformed) frequency of participation in each jurisdiction, to yield total population contributions of each form to gambling problems.

Results

Table 2 summarises two regression models predicting gambling problems from frequency of participation in each gambling form. Model (1) assumes a homogenous effect across states conditional on participation, whilst model (2) provides for a baseline difference between states not explained by participation, as well as differential effects of forms for Western Australia versus other jurisdictions. Model (2) did provide a significantly better fit overall than Model (1), F(10) = 1.306, p = .2206 and no effects beyond main effects for form were significant. Accordingly, we concluded that there that risk of gambling problems conditional on participation was approximately identical across jurisdictions. The riskiest form of gambling was EGMs, B = 0.168^* (0.154, 0.182), p < 0.001.

The total quantity of gambling problems in each jurisdiction is driven not only by expected risk conditional on participation frequency, but also the rates of participation in each jurisdiction. These vary markedly between Western Australia and other states. Assuming, as per the linear regression in Model (1), that gambling problems are a linear composite of each of the available forms, then the relative difference between jurisdictions should be explained by multiplying the product of participation rates and conditional risk, and summing over forms. Table 3 shows these calculations. As shown, the observed relative difference in gambling problems observed directly in the dataset (Western Australia being 65.44% of other states) corresponds closely to that calculated from this model (66.85%).

	DV: log(PGSI+1)	
	(1)	(2)
Jurisdiction: Other States (1) Western Australia (0)		0.041 (-0.006, 0.088)
Scratchies	0.062* (0.047, 0.076)	0.064* (0.049, 0.080)
Sports	0.067* (0.049, 0.085)	0.066* (0.047, 0.085)
Race	0.050* (0.035, 0.065)	0.048* (0.032, 0.064)
Novelty	0.161* (0.101, 0.221)	0.183* (0.117, 0.249)
Bingo	0.004 (-0.030, 0.038)	0.010 (-0.025, 0.044)
Keno	0.056* (0.036, 0.076)	0.055* (0.034, 0.076)
Poker	0.102* (0.073, 0.131)	0.104* (0.073, 0.135)
Casino	0.149* (0.117, 0.180)	0.151* (0.117, 0.185)
EGMs	0.168* (0.154, 0.182)	0.169* (0.154, 0.183)
Scratchies x Jurisdiction		-0.029 (-0.079, 0.021)
Sports x Jurisdiction		-0.004 (-0.064, 0.056)
Race x Jurisdiction		0.014 (-0.036, 0.065)
Novelty x Jurisdiction		-0.117 (-0.278, 0.043)
Bingo x Jurisdiction		-0.174 (-0.370, 0.022)
Keno x Jurisdiction		0.019 (-0.143, 0.182)
Poker x Jurisdiction		-0.023 (-0.122, 0.077)
Casino x Jurisdiction		0.003 (-0.092, 0.098)
EGMs x Jurisdiction		-0.045 (-0.122, 0.031)
Observations	5,221	5,221
R2	0.379	0.381
Adjusted R2	0.378	0.379
Residual Std. Error	0.478 (df = 5212)	0.478 (df = 5202)
F Statistic	353.766* (df = 9; 5212)	168.359* (df = 19; 5202)

Table 2. Regression coefficients for models predicting gambling problems conditional on frequency of participation on each form

Notes: All form IVs transformed via log(PGSI+1), * p < 0.01.

	Prevalence (1)		Risk (2)	(1) * (2)		WA prop. Other states	
	Other	WA	В	Other	WA	Other	WA
Scratchies	0.452	0.408	0.062	0.028	0.025	11.54%	11.54%
Sports	0.317	0.298	0.067	0.021	0.020	9.17%	9.17%
Race	0.483	0.429	0.050	0.024	0.021	9.84%	9.84%
Novelty	0.027	0.038	0.161	0.004	0.006	2.83%	2.83%
Bingo	0.066	0.033	0.004	0.000	0.000	0.06%	0.06%
Keno	0.263	0.042	0.056	0.015	0.002	1.08%	1.08%
Poker	0.098	0.092	0.102	0.010	0.009	4.30%	4.30%
Casino	0.123	0.188	0.149	0.018	0.028	12.85%	12.85%
EGMs	0.579	0.197	0.168	0.097	0.033	15.18%	15.18%
			Calculated:	0.218	0.145	100.00%	66.85%
			Observed:	0.246	0.161	100.00%	65.44%

Table 3. Summary of data used to estimate contribution of forms to problems in Western Australia and other states

Appendix II. Curriculum vitae

Matthew Rockloff

m.rockloff@cqu.edu.au			
PROFESSIONAL EXPERIENCE			
Central Queensland University	2001-present : Prof. Psychology		
School of Human, Health and Social Sciences			
	2009 – 2014 : <i>Deputy Director</i> Institute for Health and Social Science Research (IHSSR)		
University of Nevada, Reno			
	1999-2001: Post-Doctoral Fellow		
First American Bank, SSB	1004 1005 · Senior Einancial Analyst		
World Savings and Loan Association, FSB			
	1989-1991 : Financial Analyst II		
EDUCATION			
Ph.D. Psychology	1995-1999 : Florida Atlantic University Specialization: <i>Social Psychology</i>		
M.S. Economics	1002 1004 · Toxoo A&M University		
	Specialization: <i>Applied Microeconomics</i>		
BA Economics (Honors)	1985-1989 : University of California, SC		

17 Miller St., Bargara, QLD 4670 Ph. (07) 4159 2942 m.rockloff@cqu.edu.au

LEADERSHIP

Head, Population Research Laboratory (2009 – 2017) The lab uses advanced Computer Assisted Telephone Interviewing (CATI) software and 40+ staff members to manage large population surveys. It has a reputation for delivering high quality data collection and research outputs in the public sphere; including university, state and local clients.

AWARDS AND DISTINCTIONS (last 5 years)

- 2017 Ig Noble Prize in Economics, Matthew Rockloff and Nancy Greer for their experiments to see how contact with a live crocodile affects a person's wiliness to gamble.
- 2014 Top 15 UniJobs Lecturers of the Year (#6 in Australia from 4,000+ nominees)
- 2014 CQUniversity Australia, Student Voice Commendation, , Distance Educator of the Year
- 2013 Top 15 UniJobs Lecturers of the Year (#4 in Australia from 4,000+ nominees)

- 2012 Top 15 UniJobs Lecturers of the Year (#10 in Australia from 4,000+ nominees)
- 2012 CQUniversity Bundaberg Prize for Excellence in Research Established Researchers,
 M. Rockloff, A. Bridges, P. Donaldson (\$500)
- 2011 Top 15 UniJobs Lecturers of the Year (#11 in Australia from 4,000+ nominees)
- 2011 Bundaberg Campus Award for Excellence in Research Established Researcher (\$500)
- 2010 Faculty Award for Excellence in Learning and Teaching (\$1000)

GRANTS (last 5 years)

- Browne, M., Rockloff, M., Hing, N., Russell, A., New South Wales Office of Liquor & Gaming. The 2018 New South Wales Gambling Survey. \$946,542.
- Victorian Responsible Gambling Foundation. Rockloff, M., Hing, N., Browne, M., Russell, A.M.T., Greer, N., Sproston, K., Hughes, P., Delfabbro, P., & O'Neil, M. 'Victorian Population Gambling and Health Study'. Total funding \$999,976.
- Alberta Gambling Research Institute. Hodgins, D., Mutti-Packer, S., Kim, H., McGrath. D., Rockloff M., and Wohl, M. (2018). Pop-up messages for Internet gambling: An experimental study examining the efficacy of fear appeals. (CA \$103,333)
- CQUniversity Research Infrastructure Block Grant. Russell, A.M.T., Hing, N., Rockloff, M., Browne, M., Stuart, G., Li, E., Lole, L., & Langham, E. (2017-2018). Development of an internal gambling research participant panel. \$49,986.04
- Tasmanian Department of Treasury and Finance. Fahrer, J., Gould, M., Muth, P., Hulonce, J.,Dowling, N., Merkouris, S., Youssef, G., Browne, M. & Rockloff, M., Pennay, D., Myers, P., Ward,A., Vickers, N. Fourth Social and Economic Impact Study of Gambling in Tasmania. \$894,118
- Alberta Gambling Research Institute. Hodgins, D., Kim, H., Rockloff M., and Wohl, M. (Jan 2017 Dec 2018). Do Social Casino Games Encourage Gambling? An Experimental Approach (CA\$141,490)
- Alberta Gambling Research Institute. Smith, G., Hing, N., Rockloff, M., Browne, M., Russell, A., & Nicoll, F. (Feb 2017 Jan 2019). Gambling responsibly: Measuring and validating responsible gambling behaviours amongst regular gamblers in Alberta. (CA\$86,426)
- First Nations Foundation. Evaluation of the My Moola Indigenous Money Management Program as a gambling harm minimisation tool. Hing, N., Rockloff, M., Browne, M., Russell, A. 2016 (\$94,182)
- Victorian Responsible Gambling Foundation. The social cost of gambling in Victoria. Grants for Gambling Research Program. Browne, M., Doran, C., Rockloff, M. & Langham, E. 2016 (\$107,000)
- Victorian Responsible Gambling Foundation. A brief population screen for gambling harms. Browne, M., Rockloff, M. & Goodwin, B. 2016 (\$22,410)
- Victorian Responsible Gambling Foundation Tender. "Effects of wagering marketing on vulnerable adults" Hing, N., Rockloff, M., Browne, M., Li, E., Langham, E., Russell, A., Lole, L., Thomas, A., Jenkinson, R., 2016 (\$327,000)
- CQUniversity Research Infrastructure Grants Scheme. "Mobile Pokie Software Enhancements to Support Funding Opportunities" Rockloff, M., Browne, M. 2015 (\$22,500)
- Victorian Responsible Gambling Foundation Grant. "Mobile Pokie Apps: The Perfect Substitute or the Perfect Storm?" Rockloff, M., Browne, M., Goodwin, B., Rose, J., Langham, E., Li, E., Thorne, H. and Armstrong, T., June 2015 (\$190,000)

- CQU School of HH&SS, Internal Grant. "A Survey to Investigate a Cluster of Non-orthodox Health Behaviours", Browne, M., Rockloff, M., & Stuart, G., 2014 (\$8,000)
- Fostering Collaborative Research Projects Scheme (FCRP), CQU Population Research Laboratory. "Psychosocial Factors Determining Non-conforming Health Beliefs", Browne, M., Rockloff, M., & Stuart, G. 2014 (\$12,500)
- New Zealand Ministry of Health Tender. "Preventing and Minimising Gambling-Related Harm", Browne, M., Rockloff, M., Langham, E., April 2014 (\$300,000)
- Victorian Responsible Gambling Foundation Grant. "Conceptualising Gambling-Related Harm", Browne, M., Rockloff, M., Langham, E., Best, T., Donaldson, P., April 2014 (\$320,000)
- Gambling Research Australia Tender. "Innovation to Traditional Gambling Products." Rockloff, M., Browne, M., Donaldson, P. and Li, E. 2013 (\$410,000)
- CQUniversity Research Infrastructure Grants Scheme. "A mobile gambling platform to enhance funded research", Rockloff, M., Donaldson, P., Browne, M., Langham, E., Li, E. & Teo, W. 2013 (\$39,817).
- CQUniversity Learning and Teaching Grant. "Use of the programming language 'Scratch' to facilitate student learning and enthusiasm in online courses", Rockloff, M., McHenry, M., Donaldson, P., Browne, M., Langham, E. & Stuart, G. Sept 2013 (\$5,000)
- Victorian Responsible Gambling Foundation Grant. "Gambling online and offline: EGM environments that contribute to excess consumption and harm", Rockloff, M., Browne, M., Donaldson, P., Li, E., Langham, E. June 2013 (\$132,000)
- FaHCSIA Tender. "The design of six optimum pre-commitment features- preparatory work to inform the ACT trial" Rockloff, M., Donaldson, P., Browne, M., Li, E., Langham, E. June 2013 (\$143,000)

PUBLICATIONS (last 5 years)

- Browne, M., Rawat, V., Tulloch, C., Murray-Boyle, C., & Rockloff, M. (2021). The Evolution of Gambling-Related Harm Measurement: Lessons from the Last Decade. *International Journal of Environmental Research and Public Health*, *18*(9). https://doi.org/10.3390/ijerph18094395
- Bryden, G. M., Rockloff, M., Browne, M., & Unsworth, C. (2021). Effect of contamination and purity priming on attitudes to vaccination and other health interventions: A randomised controlled experiment. *Vaccine*. https://doi.org/10.1016/j.vaccine.2021.09.063
- Dowling, N. A., Greenwood, C. J., Merkouris, S. S., Youssef, G. J., Browne, M., Rockloff, M., & Myers, P. (2021). The identification of Australian low-risk gambling limits: A comparison of gambling-related harm measures. *Journal of Behavioral Addictions*, 10(1), 21–34. https://doi.org/10.1556/2006.2021.00012
- Greer, N., Rockloff, M. J., Russell, A. M. T., & Lole, L. (2021). Are esports bettors a new generation of harmed gamblers? A comparison with sports bettors on gambling involvement, problems, and harm. *Journal of Behavioral Addictions*. https://doi.org/10.1556/2006.2021.00039
- Hollingshead, S. J., Kim, H. S., Rockloff, M., McGrath, D. S., Hodgins, D. C., & Wohl, M. J.
 A. (2021). Motives for playing social casino games and the transition from gaming to gambling (or vice versa): social casino game play as harm reduction? *Journal of Gambling Issues*, *46*. https://doi.org/10.4309/jgi.2021.46.4

- Latvala, T. A., Lintonen, T. P., Browne, M., Rockloff, M., & Salonen, A. H. (2021). Social disadvantage and gambling severity: a population-based study with register-linkage. *European Journal of Public Health*. https://doi.org/10.1093/eurpub/ckab162
- Murray Boyle, C., Browne, M., & Rockloff, M. (2021). Opportunity costs or not? Validating the short gambling harm screen against a set of "unimpeachable" negative impacts. *Journal of Clinical Medicine*. https://www.mdpi.com/983860
- Williams, B. M., Browne, M., Rockloff, M., Stuart, G., & Smith, B. P. (2021). Protective Action and Risky Beliefs: The Relationship Between Religion and Gambling Fallacies. *Journal of Gambling Studies*, https://doi.org/10.1007/s10899-021-10028-z
- Rockloff, M., Russell, A. M. T., Greer, N., Lole, L., Hing, N., & Browne, M. (2021). Young people who purchase loot boxes are more likely to have gambling problems: An online survey of adolescents and young adults living in NSW Australia. *Journal of Behavioral Addictions*, *10*(1), 35–41. https://doi.org/10.1556/2006.2021.00007
- Thorne, H. B., Rockloff, M. J., Ferguson, S. A., Vincent, G. E., & Browne, M. (2021). Gambling Problems Are Associated with Alcohol Misuse and Insomnia: Results from a Representative National Telephone Survey. *International Journal of Environmental Research and Public Health*, *18*(13). https://doi.org/10.3390/ijerph18136683
- Newall, P. W. S., & Rockloff, M. J. (2021). Promoting safer gambling via the removal of harmful sludge: A view on how behavioral science's "nudge" concept relates to online gambling. *Addiction*. https://doi.org/10.1111/add.15700
- Armstrong, T., Rockloff, M., & Browne, M. (2020). Gamble with Your Head and Not Your Heart: A Conceptual Model for How Thinking-Style Promotes Irrational Gambling Beliefs. *Journal of Gambling Studies*, 36(1), 183–206. https://doi.org/10.1007/s10899-019-09927-z
- Armstrong, T., Rockloff, M., Browne, M., & Blaszczynski, A. (2020). Beliefs About Gambling Mediate the Effect of Cognitive Style on Gambling Problems. *Journal of Gambling Studies*, 36(3), 871–886. https://doi.org/10.1007/s10899-020-09942-5
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EDUCATION		
Doctor of Philosophy (Ph.D.),	2002	
Griffith University, Mt Gravatt, Brisbane, Australia Psychophysics & Signal Processing		
Supervisor: Dr. Tim Cutmore		
Bachelor of Behavioural Science (B.Beh.Sc), with 1 st class honours Griffith University, Mt Gravatt, Brisbane, Australia	1996	
Honours Major: Organisational Psychology (Leadership Style)		
EMPLOYMENT		
Associate Professor	2017– current	
School of Health, Human, & Social Sciences		
Central Queensland University		
Senior Lecturer	2013 — 2016	
School of Health, Human, & Social Sciences		
Central Queensland University		
Lecturer	2011 – 2013	
School of Health, Human, & Social Sciences		
Central Queensland University		
Director and Lead Developer	2008 – 2011	
Architectural Informatics		
Arden Architectural		
Principle Research Fellow (contract, PT)	2009 – 2010	
Queensland Smart State Funded Project CoastalCOMS / Griffith University		
Research Scientist	2006 2008	
Division of Mathematical and Information Sciences	2000 – 2008	
CSIRO		
Research Fellow	2004 – 2006	
Centre for Coastal Management		
Griffith University		

Research Fellow	2003 – 2004
Gesellschaft fur Mathematik und Datenverarbeitung – Japan	
Fraunhofer Gesselschaft / Kyushu Prefecture Government	
External SELECT FUNDING	
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•	Dwyer, T., Flenady, T., Signal, T., Browne, M ., Le Legadec, D. & Kahl, J. The effectiveness of the Queensland Adult Deterioration Detection system (Q-ADDS). Queensland Government Department of Health.	\$367,356 2017
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•	Fahrer, J., Gould, M., Dowling, N., Merkouris, S., Youssef, G., Browne,	\$894,118
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•	Smith, G., Hing, N., Rockloff, M., Browne, M., Russell, A., & Nicoll,	\$86,436
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•	Hing, N., Rockloff, M., Browne, M . & Russell, A. My Moola Indigenous	\$96,181
	Money Management Program Evaluation. Victorian Responsible Gambling Foundation / First Nations Foundation	2016
•	Hing, N., Rockloff, M., Browne, M., Li, E., Langham, E., Russell, A. & Lole, L. Effects of wagering marketing on vulnerable adults. <i>Grants for</i> <i>Gambling Research Program</i> . Victorian Responsible Gambling Foundation.	\$330,707 2016
•	Browne, M ., Doran, C., Rockloff, M. & Langham, E. The social cost of gambling in Victoria. <i>Grants for Gambling Research Program</i> . Victorian Responsible Gambling Foundation	\$107,000 2016
•	Browne, M., Rockloff, M. & Goodwin, B. A brief population screen for	\$22,410
	gambling harms. Victorian Responsible Gambling Foundation.	2016
•	Li, E., Langham, E., & Browne, M . Implicit associations between gambling and sport: The influence of advertising on young spectators.	\$49,500 2015
	Grants for Gambling Research Program. Victorian Responsible Gambling Foundation.	
•	Rockloff, M., Browne, M., Goodwin, B., Rose, J., Langham, E., Li, E.,	\$190,000
	Thorne, H. & Armstrong, T. Mobile pokie apps: The perfect substitute or the perfect storm? <i>Grants for Gambling Research Program</i> .	2015
	Victorian Responsible Gambling Foundation.	

•	Browne, M., Langham, E. & Rockloff, M. The New Zealand burden of	\$286,000
	gambling harm study. <i>Health Research Council Grants Scheme</i> . New Zealand Ministry of Health.	2014
•	Browne, M., Rockloff, M., Langham, E., Best, T. & Donaldson, P. A	\$300,000
	framework for conceptualising and measuring the burden of gambling related harm. <i>Grants for Gambling Research Program.</i> Victorian	2014
	Responsible Gambling Foundation.	
•	Rockloff, M., Browne, M., Donaldson, P., Li, E. & Langham, E.	\$410,000
	Innovations in traditional gambling products. Gambling Research Australia.	2014
•	Rockloff, M., Browne, M., Donaldson, P., Li, E. & Langham, E. Gambling	\$132,000
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	Services and Indigenous Affairs.	
•	Browne, M. & Blumenstein, M. Development of an automated modelling	\$93,000
	system with application to the construction / architectural industry.	2010
	Researchers in Business Grant Scheme. Department of Innovation,	
	Industry, Science and Research	_

RECENT PUBLICATIONS _____

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Article	Accepted	Bryden, G., Browne, M., Rockloff, M. & Unsworth, C. The privilege
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Book Chapter	In Press	Browne, M. & Rockloff, M.J. Measuring harm from gambling and estimating its distribution in the population. In Harm Reduction for Problem Gambling: A Public Health Approach. Bowden-Jones, H.,
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Article	2019	Unsworth, C.A., Russell, K., Lovell, R., Woodward, M., & Browne, M. Effect of navigation problems, assessment location and a practice test on driving assessment performance for people with Alzheimer's disease.
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		Occupational Therapy – Driver Off Road Assessment Battery, <i>Disability and Rehabilitation</i> , DOI:10.1080/09638288.2018.1445784
Article	2018	Li, E., Langham, E., Browne, M. , Rockloff, M. & Thorne, H. (2018).
		Gambling and Sport: Implicit Association and Explicit Intention Among Underage Youth. <i>Journal of Gambling Studies, 34</i> (3), 739-756
Article	2018	Rawat, V., Browne, M. , Bellringer, M., Greer, N., Kolandai-Matchett, K., Rockloff, M., Langham, E., Hanley, C., Du Preez, K., & Abbott, M. (2018). A tale of two countries: Comparing disability weights for gambling problems in New Zealand and Australia. <i>Quality of Life Research</i>
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		Behavioral Addictions, 7(2), 410-422. doi:10.1556/2006.7.2018.41
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Report	2018	Hing, N., Russell, A., Rockloff, M., Browne, M. , Langham, E., Li, E., Lole, L., Greer, N., Thomas, A., Jenkinson, R., Rawat, V. & Thorne, H. Effects of wagering marketing on vulnerable adults. Melbourne: Victorian Responsible Gambling Foundation
Article	2018	Russell, A.M.T., Hing, N., Browne, M ., Li, E., & Vitartas, P. (2018). Who bets on micro events (microbets) in sports? <i>Journal of Gambling Studies</i> .
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Article	2017	Russell, K.J., Unsworth, C., Lovell, R., Woodward, M. & Browne, M. (2017). A randomised controlled trial to determine the effect of assessment location and number of assessments on driving performance of people with dementia. <i>Alzheimer's & Dementia, 13(7), P899.</i>
		doi:10.1016/j.jalz.2017.07.311
Article	2017	Browne, M. & Rockloff, M.J. (2017). The dangers of conflating gambling harm with disordered gambling. Journal of Behavioural Addictions, 6(3), 317-320.

Article	2017	Hilton, G., Unsworth, C.A., Murphy, G.C., Browne, M. & Oliver, J. (2017). Longitudinal employment outcomes of an early-intervention vocational
		rehabilitation service for people admitted to rehabilitation with a traumatic spinal cord injury. <i>Spinal Cord.</i>
Report	2017	Browne, M., Greer, N., Armstrong, T., Doran, C., Kinchin, I., Langham, E. & Rockloff, M. (2017). The Social Cost of Gambling to Victoria. Victorian Responsible Gambling Foundation, Melbourne
		responsible Cambring Foundation, Molbourne.
Article	2017	Goodwin, B., Browne, M. , Russell, A. & Hing, N. (2017) Applying a revised two-factor model of impulsivity to predict health behaviour and well-being. <i>Personality and Individual Differences 111,</i> 250-255. doi:10.1016/j.paid.2017.02.029
Article	2017	Proving M. Dowet V/ Crook N. Longhom F. Dookloff M.D. 9
Anticle	2017	Hanley, C. (2017). What is the harm? Applying a public health
		methodology to measure the impact of gambling problems and harm on quality of life. <i>Journal of Gambling Issues</i>
Article	2017	Browne, M., Greer, N., Rawat, V. & Rockloff, M.J. (2017). A population- level metric for gambling-related harm. <i>International Gambling Studies</i> .
Article	2017	Rockloff, M., Moskovsky, N., Thorne, H., Browne, M., Bryden, G. (2017).
		Electronic Gaming Machine (EGM) Environments: Market Segments and Risk. <i>Journal of Gambling Studies.</i>
Article	2017	Browne, M., Goodwin, B.C. & Rockloff, M.J. (2017) Validation of a short screen for gambling related harm. <i>Journal of Gambling Studies</i>
Article	2017	Goodwin, B, C., Browne, M. , & Rockloff, M. (2017) A typical problem gambler affects six others. <i>International Gambling Studies.</i>
Article	2017	Hayman, M., Reaburn, P., Browne, M. , Vandelanotte, C., Alley, S. & Short, C. Feasibility, acceptability and efficacy of a web-based computer-
		tailored physical activity intervention for pregnant women - the Fit4Two randomised controlled trial. <i>BMC Pregancy</i> & <i>Childbirth</i> , 17:96.
Article	2017	Hing, N., Russell, A.M.T. & Browne M. Risk factors for gambling
		problems on online electronic gaming machines, race betting and sports betting. <i>Frontiers in Psychology: Psychopathology</i> .
Article	2017	Rockloff, M.J. & Browne, M. (2017) The Gambling Question. <i>Bulletin of the National Association for Gambling Studies,</i> July 2017, 6-7.
Article	2017	Browne, M. & Todd, D. (2017) Then and now: Consumption and dependence in e-cigarette users who formerly smoked cigarettes.
		Addictive Behaviours.
Article	2017	Langham, E., Rockloff, M.J., Browne, M. & Best, T. (in review) Could EGM player-tracking systems help link gamblers to treatment services in
		Australia: A thematic analysis of counsellor and community educators'

perspectives. International Gambling Studies.

Article	2017	Armstrong, T., Langham, E., Rockloff, M., Donaldson, P., Browne, M. & Li, E. Exploring the effectiveness of an 'Intelligent Messages Framework' for developing warning messages to reduce gambling intensity. <i>Journal</i>
		of Gambling Issues
Report	2017	Browne, M. , Bellringer, M., Greer, N., Kolandai-Matchett, K., Rawat, V., Langham, E., Rockloff, M., Palmer Du Preez, K., & Abbott, M. (2017).
		Measuring the Burden of Gambling Harm in New Zealand. Wellington: Ministry of Health.
Report	2017	Li, E., Browne, M. , Langham, E., Thorne, E. & Rockloff, M. Implicit associations between gambling and sport. Melbourne: Victorian
		Responsible Gambling Foundation.

Nerilee Hing

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Employment	From year	To year
Research Professor (Gambling Studies), Experimental Gambling Research Laboratory, CQUniversity	Feb 2016	current
Director, Centre for Gambling Education and Research, Southern Cross University	2003	Feb 2016
Professor, School of Tourism and Hospitality Management, Southern Cross University	2009	2015
Associate Professor, School of Tourism and Hospitality Management, Southern Cross University	2005	2008
Senior Lecturer, School of Tourism and Hospitality Management, Southern Cross University	1999	2004
Lecturer, School of Tourism and Hospitality Management, Southern Cross University	1994	1998
Associate Lecturer, School of Tourism and Hospitality Management, Southern Cross University	1993	1993

Degrees	University	Field	Year
PhD	University of Western Sydney	Gambling Studies	2000
Master of Applied Science	Southern Cross University	Marketing	1994
B.Bus Tourism	University of New England	Tourism Management	1992

Research Awards	Year
Winner, Southern Cross University Vice Chancellor's Award for Research Excellence	2013
Southern Cross University Vice Chancellor's Research Fellowship for 5 years	2007

Summary of Research Activities

Professor Nerilee Hing joined CQUniversity as Research Professor (Gambling Studies) in 2016. She was the Founding Director of Southern Cross University's Centre for Gambling Education and Research from 2003-16. Nerilee has been researching gambling for over 20 years. Her research aims to generate knowledge to inform policies and practices to prevent, and minimise gambling-related harm for individuals, families, and communities, and to increase the responsible provision, consumption, and regulation of gambling. Her research focuses mainly on online gambling, sports and race betting, wagering advertising and inducements, venue and policy interventions to prevent and reduce gambling harm, gambling amongst vulnerable populations, and gambling problems and help-seeking.

Nerilee has published ~200 refereed manuscripts on gambling, including 35 commissioned peer reviewed research reports. She has given over 50 keynote/invited presentations in gambling-related forums. She has editorial roles for several international gambling journals.

Nerilee has been awarded over \$9.4 million in competitive external research grants, most as Lead Investigator. Funding bodies include the Australian Research Council, Gambling Research Australia, Victorian Responsible Gambling Foundation, Australia's National Research Organisation for Women's Safety, Alberta Gaming Research Institute, and the New South Wales, Queensland, Victorian and South Australian Governments.

Nerilee conducts numerous professional activities to inform gambling policy and practice, both in Australia and internationally. She was appointed to the Australian Government's Ministerial Expert Advisory Group on Gambling. She has provided invited advice to inform the Review of Illegal Offshore Wagering, the National Consumer Protection Framework for Online Wagering, and the Review of the Interactive Gambling Act. She has also provided submissions to inform inquiries into gambling, interactive gambling, wagering advertising, and sports betting.

Date	Title	Funding Body	\$ ex GST	Research Team	Organisations
2018-19	The 2018 NSW Gambling Survey	NSW Liquor & Gaming	\$946,542	Browne, M., Rockloff, M., Hing, N. , Russell, A.	CQUniversity ORC International
2018-19	Victorian Population Gambling and Health Study	Victorian Responsible Gambling Foundation	\$999,976	Rockloff, M., Hing, N., Browne, M., Russell, A., Greer, N.	CQUniversity ORC International P. Delfabbro, M. O'Neil
2017-19	The relationship between gambling and domestic violence against women	Australia's National Research Organisation for Women's Safety	\$230,848	Hing, N., Langham, E., Taylor, A., O,Mullan, C., Mainey, L., Nuske, E., Greer, N., Jackson, A., Thomas, A., Jenkinson, R., Rintoul, A.	CQUniversity Relationships Australia Qld, NSW, SA & ACT; WHIN Vic; Crossroads Family Violence Service; Cairns Regional Domestic Violence Service

SELECTED EXTERNALLY FUNDED RESEARCH GRANTS

2017-19	Developing indicators of at risk gambling behaviour for wagering industry data	Victorian Responsible Gambling Foundation	\$299,442	Hing, N. Browne, M., Rockloff, M., Verma, B., Russell, A.	CQUniversity
2017	Secondary analysis of data from the 2014 Interactive	Australian Communication s & Media Authority	\$9,000	Gainsbury, S., Russell, A., Hing, N. , Blaszczynski, A.	University of Sydney CQUniversity
2017	Social network analysis of low and moderate risk gamblers	Victorian Responsible Gambling Foundation	\$49,976	Russell, A., Langham, E., Hing, N. (Mentor)	CQUniversity
2017-18	Responsible gambling behaviours amongst regular gamblers in	Alberta Gambling Research Institute	\$86,436	Smith, G., Hing, N. , Rockloff, M., Browne, M., & Russell, A.	University of Alberta CQUniversity
2016-17	Alberta Evaluation of the My Moola financial literacy program for gambling harm minimisation	First Nations Foundation	\$92,182	N. Hing (CI) , M. Rockloff, M. Browne, A. Russell	CQUniversity
2016-18	Effect of wagering marketing on vulnerable adults. Direct messages received from wagering operators	Victorian Responsible Gambling Foundation	\$327,207	N. Hing (CI), M. Rockloff, M. Browne, E. Li, A. Russell, L. Lole, E. Langham, A. Thomas, R. Jenkinson	CQUniversity Australian Institute for Family Studies
2015	Review and analysis of sports and race betting inducements	Victorian Responsible Gambling Foundation	\$77,882	N. Hing (CI) , K. Sproston, R. Brading, K. Brook	Southern Cross University ORC International
2015	The convergence of gambling and gaming in digital media	Victorian Responsible Gambling Foundation	\$68,932	S. Gainsbury (CI), D. King, N. Hing , P. Delfabbro	Southern Cross University University of Adelaide
2015	Behavioural Indicators of Responsible Gambling Scale	National Association for Gambling Studies	\$9,088	A. Russell (CI), N. Hing (Mentor)	Southern Cross University

2014-16	Behavioural indicators of responsible gambling consumption	Victorian Responsible Gambling Foundation	\$74,998	N. Hing (CI) , A. Russell	Southern Cross University)
2013-15	The stigma of problem gambling	Victorian Responsible Gambling Foundation	\$180,000	N. Hing (CI) , E Nuske A. Russell, S Gainsbury	Southern Cross University
2013-15	The use of social media in gambling	Gambling Research Australia 028/12-13	\$414,897	S. Gainsbury (CI), N. Hing (CI), A.	Southern Cross University University of Adelaide
				Blaszczynski, A. Russell, P. Delbabbro, D. King, J. Derevensky	McGill University
2013-15	Gambler self-belp	Gambling	\$393 966	D Lubman D	Turning Point Drug
2010 10	strategies	Research Australia 048/11-1	φ000,000	Best, S. Rodda,	& Alcohol Services
				N. Hing , E. Nuske, D.	University
				Hodgins, J. Cunningham	University of Calgary
2013-15	Marketing of sports betting and	Gambling Research	\$280,674	K. Sproston, C. Hanley, K.	ORC International
	racing	046/12-13		Brook, N. Hing ,	
				S. Gainsbury	
2012-14	The effectiveness of self-exclusion programs in Queensland	QLD Department of Justice & Attorney General	\$263,625	N. Hing (CI), E. Nuske, B. Tolchard, A. Russell	Southern Cross University University of New England
2012-14	Impact of advertising of live	QLD	\$225,825	N. Hing (CI) , P. Vitartas, M	Southern Cross
	betting odds during televised sporting events on gambling and problem gambling	Department of Justice & Attorney General		Lamont	University
2012-14	A comparative study of men and women gamblers in Victoria	Victorian Department of Justice	\$109,985	N. Hing (CI) , B. Tolchard, E. Nuske, L. Nower, A. Russell	Southern Cross University University of New England Rutgers University

2012-13	Significant life events and gambling	Victorian Department of Justice Rd 4	\$27,495	L. Holdsworth (CI), E. Nuske (CI), N. Hing (Mentor)	Southern Cross University
2011-13	The role of EGM jackpots in gambling behavior	Gambling Research Australia Tender No. 066/10-11	\$250,000	M. Rockloff (CI), N. Hing , J. Choudhury, A. Bridges, P. Donaldson	Central QLD University Southern Cross University
2011-12	Prevalence of gambling and problem gambling in NSW	NSW Office of Liquor, Gaming & Racing RTF 10/02	\$233,937	K. Sproston (CI), N. Hing	Ogilvy Research International Southern Cross University
2011-14	Interactive gambling	Gambling Research Australia Tender No. 107/10	\$933,578	N. Hing (Cl) , S. Gainsbury, A. Blaszczynski, R. Wood, D. Lubman	Southern Cross University Univ. Sydney Univ. Lethbridge Monash Univ.
2010-14	Gambling problems, risks & consequences in Indigenous Australian communities	ARC Discovery DP1096595	\$365,000	N. Hing (CI) , J. Buultjens (CI), H. Breen (APD)	Southern Cross University
2009-12	Gambling and co- morbid disorders	Gambling Research Australia 101/08	\$361,473	N. Hing (CI) , J. Haw, L. Holdsworth	Southern Cross University
2009-10	Gamblers at risk and their help- seeking behaviour	Gambling Research Australia 064/08	\$286,479	N. Hing (CI) , J. Haw, E. Nuske, S. Gainsbury	Southern Cross University
2008-10	Exploring Indigenous gambling	Gambling Research Australia	\$138,984	N. Hing (CI) , H. Breen, A. Gordon, J. Atkinson	Southern Cross University
2008-10	Assisting problem gamblers in QLD gaming venues	QLD Treasury RGRGP2007	\$73,054	N. Hing (CI) , L. Bizo, E. Nuske	Southern Cross University
2008-10	Assisting problem gamblers in SA gaming venues	Independent Gambling Authority	\$50,000	N. Hing (CI) , S. Nisbet	Southern Cross University

2008-10	Influence of venue characteristics on a player's decision to attend a gambling venue	Gambling Research Australia 118/06	\$130,607	N. Hing (CI) , J. Haw	Southern Cross University
2008-10	Pseudo underage gambling project	NSW Office of Liquor, Gaming and Racing	\$149,935	N. Hing (CI) , J. Madden	Southern Cross University Community Solutions
2007-08	Indigenous gambling in the Yarrabah community	QLD Office of Gaming Regulation RG RGRGP2006	\$253,106	N. Hing (CI) , H. Breen, A. Gordon	Southern Cross University
2007	The link between accessibility and gambling problems	Victorian Office of Gaming and Racing 077/06	\$99,930	N. Hing (CI) , S. Nisbet	Southern Cross University
2006-07	Workplace influences on gambling amongst gaming venue employees	QLD Office of Gaming Regulation RGRGP2005	\$78,805	N. Hing (CI)	Southern Cross University
2005-06	Gambling by employees of QLD gaming venues	QLD Office of Gaming Regulation RGRGP2004	\$70,000	N. Hing (CI) , H. Breen	Southern Cross University
2002-03	Responsible gambling strategies in Sydney clubs	NSW Department of Gaming and Racing	\$137,000	N. Hing (CI)	Southern Cross University
2002-03	Efficacy of the QLD responsible gambling code of practice in hotels, clubs and casinos	QLD Office of Gaming Regulation RGRGP2002	\$107,800	H. Breen (CI), N. Hing , J. Buultjens	Southern Cross University
1996-97	Poker machine playing behaviour in Sydney registered clubs	NSW Department of Gaming and Racing	\$127,000	G. Prosser (CI), N. Hing , H. Breen, P. Weeks,	Southern Cross University

GAMBLING-RELATED REFEREED JOURNAL ARTICLES (SINCE 2010 ONLY)

- 1. Browne, M., **Hing, N.**, Rockloff, M., Russell, A. M. T., Nicoll, F., & Smith, G. (in press). A multivariate evaluation of 25 proximal and distal risk-factors for gambling-related harm. *Journal of Clinical Medicine*.
- 2. Russell, A.M.T., **Hing, N.**, & Browne, M. (in press). Risk factors for gambling problems specifically associated with sports betting. *Journal of Gambling Studies*.
- 3. Browne, M., Hing, N., Russell, A.M.T., Thomas, A., & Jenkinson, R. (in press). The impact of exposure to

wagering advertisements and inducements on intended and actual betting expenditure: An ecological momentary assessment study. *Journal of Behavioral Addictions*.

- 4. **Hing, N.**, Russell, A. M. T., Thomas, A., & Jenkinson, R. (in press). Wagering advertisements and inducements: Exposure and perceived influence on betting behaviour. *Journal of Gambling Studies*.
- 5. Lamont, M.,& **Hing, N.** (in press). Sports betting motivations among young men: An adaptive theory analysis. *Leisure Sciences*.
- 6. Russell, A.M.T., **Hing, N.**, Browne, M., Li, E., & Vitartas, P. (2019). Who bets on micro events (microbets) in sports? *Journal of Gambling Studies*, *35*(1), 205-223.
- 7. Russell, A.M.T., **Hing, N.**, Li, E, & Vitartas, P. (2019). Gambling risk groups are not all the same: Risk factors amongst sports bettors. *Journal of Gambling Studies, 35*(1), 225-246.
- Hing, N., Browne, M., Russell, A.M.T., Greer, N., Thomas, A., Jenkinson, R., & Rockloff, M.J. (2019). Where's the bonus in bonus bets? Assessing sports bettors' comprehension of their true cost. *Journalof Gambling Studies*. DOI: 10.1007/s10899-018-9800-0
- 9. Lamont, M.,& **Hing, N.** (2019). Intimations of masculinity among young male sports bettors. *Leisure Studies*, 38(2), 245-259
- Rodda, S. N., Bagot, K. L., Cheetham, A., Hodgins, D. C., Hing, N., & Lubman, D. I. (2018). Types of change strategies for limiting or reducing gambling behaviours and their perceived helpfulness: A factor analysis. *Psychology of Addictive Behaviors*, 32(6), 679-688.
- 11. Russell, A.M.T., Langham, E., & **Hing, N.** (2018). Social influences normalize gambling-related harm amongst higher risk gamblers. *Journal of Behavioral Addictions,* 7(4), pp. 1100–1111.
- Russell, A.M.T., Hing, N., Browne, M., & Rawat, V. (2018). Are direct messages (texts and emails) from wagering operators associated with betting intention and behaviour? An ecological momentary assessment study. *Journal of Behavioral Addictions*, 7(4), pp. 1079–1090.
- Rodda, S., Hing, N., Hodgins, D., Cheetham, A., Dickens, M., & Lubman, D. (2018). Behaviour change strategies for problem gambling: An analysis of online posts. *International Gambling Studies*, 18(3), 420-438.
- 14. **Hing, N.**, Russell, A.M.T., & Hronis, A. (2018). A definition and set of principles for responsible consumption of gambling. *International Gambling Studies, 18*(3), 359-382.
- 15. Gainsbury, S.M., Russell, A.M., **Hing, N.**, & Blaszczynski, A. (2018). Consumer engagement with and perceptions of offshore online gambling sites. *New Media and Society*, *20*(8), 2990-3010.
- 16. **Hing, N.**, Russell, A.M.T., Li, E., & Vitartas, P. (2018). Does the uptake of wagering inducements predict impulse betting on sport?. *Journal of Behavioural Addictions,* 7(1):146-157.
- 17. Hing, N., Li, E., Vitartas, P., Russell, A.M.T. (2018). On the spur of the moment: Intrinsic predictors of impulse sports betting. *Journal of Gambling Studies*, 34(2), 413–428.
- 18. **Hing, N.**, Vitartas, P., & Lamont, M. (2017). Understanding persuasive attributes of sports betting advertisements: A conjoint analysis of selected elements. *Journal of Behavioral Addictions, 6*(4), 658-668.
- 19. **Hing, N.**, & Russell, A.M.T. (2017). Psychological factors, sociodemographic characteristics and coping mechanisms associated with the self-stigma of problem gambling. *Journal of Behavioral Addictions*, *6*(3), 416-424.
- 20. **Hing, N.**, Russell, A.M.T., & Hronis, A. (2017). What behaviours and cognitions support responsible consumption of gambling? Results from an expert survey. *International Journal of Mental Health and Addiction*, 15, 1320-1341.
- Rodda, S., Hing, N., Hodgins, D.C., Cheetham, A., Dickens, M., & Lubman, D.L. (2017). Change strategies and associated implementation issues: An analysis of online counseling sessions. *Journal of Gambling Studies*, 33(3), 955-973.
- 22. Markwell, K., Firth, T., & **Hing, N.** (2017). Blood on the race-track: An analysis of ethical concerns regarding animal-based gambling. *Annals of Leisure Research*, *20*(5), 594-609.
- 23. **Hing, N.**, Russell, A.M.T., Lamont, M., & Vitartas, P. (2017). Bet anywhere, anytime: An analysis of Internet sports bettors' responses to gambling promotions during sports broadcasts by problem gambling severity. *Journal of Gambling Studies*, *33*, 1051-1065.

- 24. Abarbanel, B., Gainsbury, S., King, D., **Hing, N.**, & Delfabbro, P. (2017). Gambling games on social platforms: How do advertisements for social casino games target young adults?. *Policy and Internet*, 9(2), 184-209.
- 25. **Hing, N.**, Sproston, K., Brook, K., & Brading, R. (2017). The structural features of sports and race betting inducements: Issues for harm minimisation and consumer protection. *Journal of Gambling Studies*, *33*(2), 685-704.
- Goodwin, B. C., Browne, M., Hing, N., & Russell, A. M. (2017). Applying a revised two-factor model of impulsivity to predict health behaviour and well-being. *Personality and Individual Differences*, 111, 250-255.
- 27. **Hing, N.**, & Russell, A.M.T (2017). How anticipated and experienced stigma can contribute to selfstigma: The case of problem gambling. *Frontiers in Psychology*, *8*, 235.
- 28. **Hing, N.**, Russell, A.M.T., & Browne, M. (2017). Risk factors for gambling problems on online electronic gaming machines, race betting and sports betting. *Frontiers in Psychology, 8,* 779.
- 29. Gainsbury, S., King, D., Russell, A., Delfabbro, P., & **Hing, N.** (2017). Virtual addictions: An examination of problematic social casino game use among at-risk gamblers. *Addictive Behaviors*, *64*, 334-339.
- 30. Langham, E., Russell, A.M.T., **Hing, N.**, & Gainsbury, S.M. (2017). Sense of coherence and gambling: Exploring the relationship between sense of coherence, gambling behaviour and gambling-related harm. *Journal of Gambling Studies, 33*(2), 1-24.
- Backer, E., & Hing, N. (2017). Whole tourism systems and tourism industries: An academic portrait of Neil Leiper. Anatolia, 28(2), 320-325.
- King, D., Russell, A.M.T., Gainsbury, S.M., Delfabbro, P.H., & Hing, N. (2017). The cost of virtual wins: An examination of gambling risks in youth who spend money on social casino games. *Journal of Behavioral Addictions*, 5(3), 401-409.
- 33. **Hing, N**., Sproston, K., Tran, K., & Russell, A.M.T. (2017). Gambling responsibly: Who does it and to what end? *Journal of Gambling Studies*, 33, 149-165.
- 34. **Hing, N.**, Russell, A.M.T., and Gainsbury, S.M. (2016). Unpacking the public stigma of problem gambling: The process of stigma creation and contributors to social distancing. *Journal of Behavioral Addictions, 5*(3),448-456.
- 35. **Hing, N.**, Nuske, E., Gainsbury, S., Russell, A., & Breen, H. (2016). How does the stigma of problem gambling influence help-seeking, treatment and recovery? A view from the counselling sector. *International Gambling Studies, 16*(2), 263-280.
- 36. Gainsbury, S.M., Russell, M.T., King, D.L., Delfabbro, P., & **Hing, N.** (2016). Migration from social casino games to gambling: Motivations and characteristics of gamers who gamble. *Computers in Human Behavior*, 63, 59-67.
- 37. **Hing, N.**, Russell, A.M.T., Gainsbury, S.M., & Nuske, E. (2016). The public stigma of problem gambling: Its nature and relative intensity compared to other health conditions. *Journal of Gambling Studies, 32,* 847-864.
- 38. Gainsbury, S.M., King, D., Russell, A., Delfabbro, P., Derevensky, J., & **Hing, N.** (2016). Exposure to and engagement with gambling marketing in social media: Reported impacts on moderate risk and problem gamblers. *Psychology of Addictive Behaviors*, 30(2), 270-276.
- 39. King, D., Gainsbury, S.M., Delfabbro, P.H., **Hing, N.**, & Abarbanel, B. (2016). Distinguishing between gaming and gambling activities in addiction research. *Journal of Behavioral Addictions*, 4(4), 215-220.
- 40. **Hing, N.**, Nuske, E., Gainsbury, S.M., & Russell, A.M.T. (2016). Perceived stigma and self-stigma of problem gambling: Perspectives of people with gambling problems. *International Gambling Studies*, *16*(1), 31-48.
- 41. Gainsbury, S., King, D., **Hing, N.,** & Delfabbro, P. (2016). Social media marketing and gambling: An interview study of gambling operators in Australia. *International Gambling Studies*, 15(3), 377-393.
- Hing, N., Russell, A.M.T, Gainsbury, S., & Blaszczynski, A. (2016). A case of mistaken identity? A comparison of professional and amateur problem gamblers. *Journal of Gambling Studies*, 32, 277-289.
- 43. Lamont, M., Hing, N., & Vitartas, P. (2016). Affective responses to gambling promotions during

televised sport: A qualitative analysis. Sport Management Review, 19(3), 319-331.

- 44. **Hing, N.**, Russell, A., Tolchard, B., & Nower, L. (2016). Risk factors for gambling problems: An analysis by gender. *Journal of Gambling Studies, 32*, 511-534.
- 45. **Hing, N.**, Russell, A.M.T., Vitartas, P., & Lamont, M. (2016). Demographic, behavioural and normative risk factors for gambling problems amongst sports bettors. *Journal of Gambling Studies*, 32, 625-641.
- 46. Blaszczynski, A., Russell, A., Gainsbury, S., & **Hing, N.** (2016). Mental health and online, land-based and mixed gamblers. *Journal of Gambling Studies*, 32, 261-271.
- 47. Gainsbury, S.M, Delfabbro, P., King, D.L., & **Hing, N.** (2016). An exploratory study of gambling operators' use of social media and the latent messages conveyed. *Journal of Gambling Studies*, 32, 125-141.
- 48. **Hing, N.**, Russell, A., Blaszczynski, A., & Gainsbury, S. (2015). What's in a name? Assessing the accuracy of self-identifying as a professional or semi-professional gambler. *Journal of Gambling Studies*, 31(4), 1799-1818.
- Gainsbury, S., Russell, A., Blaszczynski, A., & Hing, N. (2015). Greater involvement and diversity of Internet gambling as a risk factor for problem gambling. *European Journal of Public Health*, 25 (4), 723-728.
- 50. **Hing, N.,** Lamont, M., Vitartas, P., & Fink, E. (2015). How sports bettors respond to sports-embedded gambling promotions: Implications for compulsive consumption. *Journal of Business Research*, *68*, 2057-2066.
- Hing, N., Cherney, L., Gainsbury, S., Lubman, D., Wood, R., & Blaszczynski, A. (2015). Maintaining and losing control during Internet gambling: A qualitative study of gamblers' experiences. *New Media and Society*, *17*(7) 1075–1095.
- Hing, N., Russell, A., Tolchard, B., & Nuske, E. (2015). Are there distinctive outcomes from selfexclusion? An exploratory study comparing gamblers who have self-excluded, received counselling, or both. *International Journal of Mental Health and Addiction*, *13*(4), 481-496.
- 53. **Hing, N.**, Russell, A.M.T, Gainsbury, S.M., & Blaszczynski, A. (2015). Characteristics and help-seeking behaviors of Internet gamblers based on most problematic mode of gambling. *Journal of Medical Internet Research*, *17*(1), E13.
- 54. Gainsbury, S., Russell, A., Wood, R., **Hing, N.**, & Blaszczynski, A. (2015). How risky is Internet gambling? A comparison of subgroups of Internet gamblers based on problem gambling status. *New Media & Society*, 17(6), 861-879.
- 55. Holdsworth, L., Nuske, E., & **Hing, N.** (2015). A grounded theory of the influence of significant live events, psychological co-morbidities and related social factors on gambling involvement. *International Journal of Mental Health & Addiction*, 13(2), 257-273.
- 56. **Hing, N.**, Nuske, E., Tolchard, B., & Russell, A. (2015). What influences the types of help that problem gamblers choose? A preliminary grounded theory model. *International Journal of Mental Health & Addiction*, *13*(2), 241-256
- Gainsbury, S, Russell, A., Hing, N., Wood, R., Lubman, D., & Blaszczynski, A. (2015). How the Internetis changing gambling: Findings from an Australian prevalence survey. *Journal of Gambling Studies*, *31*(1), 1-15.
- 58. **Hing, N.**, Lamont, M., Vitartas, P., & Fink, E. (2015). Sports-embedded gambling promotions: A study of exposure, sports betting intention and problem gambling amongst adults. *International Journal of*

Mental Health and Addiction, 13(1), 115-135.

- 59. Gainsbury, S., **Hing, N.**, Delfabbro, P., Dewar, G., & King, D. (2015). An exploratory study of interrelationships between social casino gaming, gambling, and problem gambling. *International Journal of Mental Health & Addiction*, 13(1), 136-153.
- 60. Gainsbury, S., Russell, A., Blaszczynski, A., & **Hing, N.** (2014). The interaction between gambling activities and modes of access: A comparison of Internet-only, land-based only, and mixed-mode gamblers and related gambling problems. *Addictive Behaviours*, 41, 34-40.
- 61. Rodda, S., **Hing, N.**, & Lubman, D., (2014). Improved outcomes following contact with a gambling helpline: The importance of gender on barriers and facilitators. *International Gambling Studies*, 14(2),

318-329

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- 63. **Hing, N.**, Cherney, L., Blaszczynski, A., Gainsbury, S., & Lubman, D. (2014). Do advertising and promotions for online gambling increase gambling consumption? An exploratory study. *International Gambling Studies*, *14*(3), 394-409.
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- 77. **Hing, N.**, Breen, H., Gordon, A., & Russell, A. (2014). Risk factors for problem gambling among Indigenous Australians: An empirical study *Journal of Gambling Studies*, *30*(2), 387-402.
- 78. **Hing, N.**, Holdsworth, L., Tiyce, M., & Breen, H. (2014). Stigma and problem gambling: Current knowledge and future research directions. *International Gambling Studies*, *14*(1), 64-81.
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- 82. Hing, N., Tiyce, M., Holdsworth, L., & Nuske, E., (2013). All in the family: Help-seeking by concerned

significant others of problem gamblers. *International Journal of Mental Health and Addiction*, 11(3), 396-408.

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- 87. Nuske, E., & **Hing, N.** (2013). A narrative analysis of help-seeking behaviour and critical change points for recovering problem gamblers: The power of storytelling. *Australian Social Work*, *66*(1), 39-55.
- 88. Rockloff, M. & **Hing, N**. (2013). The impact of jackpots on EGM gambling behavior: A review. *Journal of Gambling Studies*, 29(4), 775-790.
- 89. Tiyce, M., **Hing, N.**, Cairncross, G., & Breen, H. (2013). Employee stress and stressors in gambling and hospitality workplaces. *Journal of Human Resources in Hospitality & Tourism, 12*(2), 126-154.
- 90. Breen, H., **Hing, N.**, Gordon, A., & Buultjens, J. (2012). Meanings of Aboriginal gambling across New South Wales. *International Gambling Studies, 12*(2), pp. 243-256.
- Gainsbury, S., Wood, R., Russell, A., Hing, N., & Blaszczynski, A. (2012). A digital revolution: Comparison of demographic profiles, attitudes and gambling behaviour of Internet and non-Internet gamblers. *Computers in Human Behaviour.* 28(12), 1388-1398.
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- 94. **Hing, N.**, Breen, H., & Gordon, A. (2012). A case study of gambling involvement and its consequences. *Leisure Sciences*, *34*(3), pp. 217-235.
- 95. **Hing, N.**, Breen, H., Buultjens, J., & Gordon, A. (2012). A profile of gambling behaviour and impacts amongst Indigenous Australians attending a cultural event in New South Wales Australia. *Australian Aboriginal Studies*, 2, 1-20.
- 96. Holdsworth, L., Haw, J., & **Hing, N.** (2012) The temporal sequencing of problem gambling and comorbid disorders. *International Journal of Mental Health and Addiction*, *10*(2), 197-209.
- 97. Holdsworth, L., **Hing, N.,** & Breen, H. (2012). Exploring women's problem gambling: A review of the literature. *International Gambling Studies, 12*(2), 199-213.
- 98. Breen, H., **Hing, N.,** & Gordon, A. (2011). Indigenous gambling motivations, behaviour and consequences in Northern New South Wales. Australia. *International Journal of Mental Health and Addiction, 9*(6), 723-729.
- 99. Haw, J., & **Hing, N.** (2011). Servicescape features and preferred gambling venue. *Gambling Research*, 23(2), 53-65.
- 100. Hing, N., & E. Nuske (2011). Assisting problem gamblers in the gaming venue: A counsellor perspective. *International Journal of Mental Health and Addiction, 9*(6), 696-708.
- 101. **Hing, N.,** & E. Nuske (2011). Assisting problem gamblers in the gaming venue: An assessment of practices and procedures followed by frontline hospitality staff. *International Journal of Hospitality Management, 30*(2), 459-467.
- 102. **Hing, N.,** & Gainsbury, S. (2011). Risky business: Gambling problems amongst gaming venue employees in Queensland, Australia. *Journal of Gambling Issues, 25*, 4-23.
- 103. Holdsworth, L., Tiyce, M., & Hing, N. (2011). Exploring the relationship between problem gambling and

homelessness: Becoming and being homeless. Gambling Research, 23(2), 39-54.

- 104. Lamont, M., **Hing, N.,** & Gainsbury, S. (2011). Gambling on sport sponsorship: A conceptual framework for research and regulatory review. *Sport Management Review, 14*(3), 246-257.
- 105. **Hing, N.**, Breen, H., & Gordon, A. (2010). Respecting cultural values: Conducting a gambling survey inan Australian Indigenous community. *Australian and New Zealand Journal of Public Health, 34*(6), 547-553.
- 106. **Hing, N.** (2010). The evolution of responsible gambling policy and practice: Insights for Asia from Australia. *Asian Journal of Gambling Issues & Public Health, 1*(1), 19-33.
- 107. Hing, N., & Nisbet, S. (2010). A qualitative perspective on physical, social & cognitive accessibility to gambling. *Journal of Gambling Issues, 24*, 101-120.

RESEARCH REPORTS FOR EXTERNAL FUNDING AGENCIES (SINCE 2010 ONLY)

- Hing, N., Russell, A.M.T., Rockloff, M.J., Browne, M., Langham, E., Li, E., Lole, L., Greer, N., Thomas, A., Jenkinson, R., Rawat, V., & Thorne, H. (2018). *Effects of wagering marketing on vulnerable adults.* Melbourne: Victorian Responsible Gambling Foundation.
- 3. **Hing, N.**, Russell, A.M.T., & Rawat, V. (2018). *Direct messages received from wagering operators*. Melbourne: Victorian Responsible Gambling Foundation.
- Hing, N., Russell, A.M.T., Rawat, V., Rockloff, M.J. & Browne, M. (2018). Evaluation of the My Moola Indigenous money management program as a gambling harm minimisation tool. Melbourne: First Nations Foundation.
- 5. **Hing, N.**, Russell, A.M.T., & Hronis, A. (2016). *Behavioural indicators of responsible gambling consumption*. Melbourne: Victorian Responsible Gambling Foundation.
- 6. Russell, A.M.T., Langham, E., **Hing, N.**, & Rawat, V. (2018). *Social influences on gamblers by risk group: An egocentric social network analysis.* Melbourne: Victorian Responsible Gambling Foundation.
- 7. Gainsbury, S., King, D., Abarbanel, B., Delfabbro, P., & **Hing, N.** (2015). *Convergence of gambling and gaming in digital media*. Melbourne: Victorian Responsible Gambling Foundation.
- 8. **Hing, N.**, Sproston, K., Brading, R., & Brook, K. (2015). *Review and analysis of sports and race betting inducements*. Melbourne: Victorian Responsible Gambling Foundation.
- 9. Lubman, D., Rodda, S., Hing, N., Cheetham, A., Cartmill, T., Nuske, E., Hodgins, D., & Cunningham,

J. (2015). Gambler self-help strategies: A comprehensive assessment of self-help strategies and actions used by gamblers. Melbourne: Gambling Research Australia.

- 10. **Hing, N.**, Russell, A., Nuske, E., & Gainsbury (2015). *The stigma of problem gambling: Causes, characteristics and consequences*. Melbourne: Victorian Responsible Gambling Foundation.
- 11. Gainsbury, S., King, D., Delfabbro, P., **Hing, N.,** Russell, A., Blaszczynski, A., Derevensky, J. (2015). *The use of social media in gambling*. Gambling Research Australia.
- 12. Sproston, K., Hanley, C., Brook, K., **Hing, N.**, & Gainsbury (2015). *Marketing of sports betting and racing*. Melbourne: Gambling Research Australia.
- 13. **Hing, N.**, Russell, A., Tolchard, B., & Nower, L. (2014). *A comparative study of men and women gamblers in Victoria*. Melbourne: Victorian Responsible Gambling Foundation.
- Hing, N., Vitartas, P., & Lamont, M. (2014). Promotion of gambling and live betting odds during televised sport: Influences on gambling participation and problem gambling. Report prepared for the Queensland Department of Justice and Attorney-General, Brisbane.
- Hing, N., Tolchard, B., Nuske, E., & Russell, A. (2014). The effectiveness of self-exclusion programs in Queensland. Report prepared for the Queensland Department of Justice and Attorney-General, Brisbane.
- 16. **Hing, N.**, Gainsbury, S., Blaszczynski, A., Wood, R., Lubman, D., & Russell, A. (2014). *Interactive gambling*. Melbourne: Gambling Research Australia.
- 17. Rockloff, M., **Hing, N.**, Donaldson, P., Li, E., Browne, M., & Langham, E. (2013). *The impact of EGM jackpots on gambling behavior*. Melbourne: Gambling Research Australia.
- 18. Holdsworth, L., Nuske, E., & Hing, N. (2013). The relationship between gambling, significant life events,

co-morbidity and associated social factors. Melbourne: Victorian Responsible Gambling Foundation.

- 19. Sproston, K., **Hing, N.,** & Palankay, C. (2012). *Prevalence of gambling and problem gambling in New South Wales.* Sydney: NSW Office of Liquor, Gaming and Racing.
- 20. **Hing, N.**, Nuske, E. & Gainsbury, S. (2012). *Gamblers at risk and their help-seeking behaviour*. Melbourne: Gambling Research Australia.
- 21. Gainsbury, S., **Hing, N.**, Blaszczynski, A., & Wood, R. (2011). *An investigation of internet gambling in Australia*. Lismore: CGER, Southern Cross University.
- Breen, H., Hing, N., & Gordon, A. (2010). Exploring Indigenous gambling: Understanding Indigenous gambling behaviour, consequences, risk factors and potential interventions. Melbourne: Gambling Research Australia.
- 23. **Hing, N.**, & Haw, J. (2010). *The influence of venue characteristics on a players decision to attend a gambling venue*. Melbourne: Gambling Research Australia
- 24. **Hing, N.**, Nisbet, S., & Nuske, E. (2010). *Assisting problem gamblers in South Australian gaming venues*. Adelaide: Independent Gambling Authority.

CONFERENCE PRESENTATIONS

Professor Nerilee Hing has presented 56 keynote/invited presentations on gambling, and another 80 gambling-related conference presentations at Australian and international conferences.

Alex Russell

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Education

2014: Doctor of Philosophy, University of Sydney.

2007: Graduate Diploma in Science (Psychology, with Merit), University of Sydney.

2004: Bachelor of Science (Psychology), University of Sydney.

Competitive Research Grants (AU\$4,218,344 external and AU\$211,282 internal, incl GST)

Category 2 grants (13 grants for \$4,009,311)

- 2018 2019: Browne, M., Rockloff, M.J., Hing, N., Greer, N., & Russell, A.M.T. The 2018 New South Wales Gambling Survey. NSW Office of Liquor & Gaming, \$946,542.34.
- 2018 2019: Greer, N., Rockloff, M., & **Russell, A.M.T.** eSports and gambling. Victorian Responsible Gambling Foundation Early Career Researcher Grant, Round 9, \$54,949.05.
- 2018 2019: Rockloff, M., Hing, N., Browne, M., **Russell, A.M.T.**, Greer, N., Sproston, K., Hughes, P., Delfabbro, P., & O'Neil, M. Victorian Population Gambling and Health Study. Victorian Responsible Gambling Foundation, \$999,976.
- 2017 2019: Hing, N., Browne, M., Rockloff, M., Verma, B., & Russell, A.M.T. Developing validated indicators of at risk gambling behaviour for wagering industry data. Victorian Responsible Gambling Foundation. \$329,386.
- 2017: Russell, A.M.T., Langham, E., & Hing, N. Social network analysis of low- and moderate-risk gamblers.

Victorian Responsible Gambling Foundation Early Career Researcher Grant, Round 8, \$54,973.90. 2017: Gainsbury, S., **Russell, A.M.T.**, Hing, N., & Blaszczynski, A. Secondary analysis of interactive

gambling data. Australian Communications and Media Authority, \$9,900.

- 2016 2017: Hing, N., Rockloff, M., Browne, M. & Russell, A.M.T. My Moola Indigenous Money Management Program. First Nations Foundation and the Victorian Responsible Gambling Foundation, \$105,799.10.
- 2016 2018: Hing, N., Rockloff, M., Browne, M., Li, E., Langham, E., Russell, A.M.T., Lole, L., Thomas, A., & Jenkinson, R. Effects of wagering marketing on vulnerable adults. Victorian Responsible Gambling Foundation, AU\$359,927.70.
- 2014 2015: Hing, N., & **Russell, A.** Behavioural indicators of responsible gambling consumption. Victorian Responsible Gambling Foundation Substantive Grant, AU\$82,498.
- 2013 2015: Hing, N., **Russell, A.**, Nuske, E., & Gainsbury, S. The stigma of problem gambling: Causes characteristics and consequences. Victorian Responsible Gambling Foundation, AU\$198,000.
- 2013 2015: Gainsbury, S., Hing, N., Blaszczynski, A., Russell, A., Delfabbro, P., King, D., & Derevensky,

J. The use of social media and gambling. Funding from Gambling Research Australia, AU\$456,387. 2012 – 2014: Hing, N., Nuske, E., Tolchard, B., & **Russell, A.** The effectiveness of self-exclusion programs

in Queensland. Queensland Department of Justice and Attorney General, AU\$289,988.

2012 – 2014: Hing, N., Tolchard, B., Nuske, E., Nower, L., & **Russell, A.** A comparative study of men and women gamblers in Victoria: Product preference, styles of play and risk and protective factors. Funding from Victorian Responsible Gambling Foundation, AU\$120,984.

Category 3 grants (5 grants for \$209,033)

- 2017 2018: Smith, G., Hing, N., Rockloff, M., Browne, M., Russell, A.M.T., & Nicoll, F. Gambling responsibly: Measuring and validating responsible gambling behaviours amongst regular gamblers in Alberta. Alberta Gambling Research Institute, C\$86,426 (AU\$89,572).
- 2016: Hing, N., & **Russell, A.** Gambling by employees of Star Entertainment Casinos. Star Entertainment Group, AU\$40,656.
- 2015: Hing, N., Gainsbury, S., & **Russell, A.** Gambling by employees of Echo Entertainment Casinos. Echo Entertainment, AU\$38,808.
- 2014 2015: **Russell, A.**, & Hing, N. Development and validation of the Behavioural Indicators of Responsible Gambling Scale (BIRGS). National Association for Gambling Studies Annual Research Grant, AU\$9,997.
- 2014: Hing, N., Gainsbury, S., & **Russell, A.** Gambling by employees of Echo Entertainment Casinos. Echo Entertainment, AU\$30,000

Internal grants (5 grants for \$211,282)

- 2018 2019: Phan-Thien, K-Y., Possell, M., Bradbury, M., Fajardo, M., **Russell, A.**, Lu, S., Hallikainen, P., & Lange, M. Digital transformation of food sensory quality. Sydney Institute of Agriculture. \$75,555.
- 2017 2018: Russell, A.M.T., Hing, N., Rockloff, M., Browne, M., Stuart, G., Li, E., Lole, L., & Langham, E. Development of an internal gambling research participant panel. CQUniversity Research Infrastructure Block Grant. \$49,986.04
- 2017: Hing, N., Judd, J., Smallwood, G., Li, E., **Russell, A.**, Langham, E., Andrews, R., Andrews, S., Lively, A., Gordon, A., & Breen, H. Community based participatory action research to address gambling harms in the Yarrabah Aboriginal community. CQUniversity Interdisciplinary and Social Innovation Research Grants, \$49,650.
- 2017: **Russell, A.M.T.**, Browne, M., Langham, E., & Begg, S.J. Gambling and problem gambling from a life course perspective. CQUniversity Internal Merit Grants, \$24,676.43.
- 2015: Hing, N., & **Russell, A.M.T.** Development and validation of the Behavioural Indicators of Responsible Gambling Scale (BIRGS) for Sports Bettors. Southern Cross University Research Seed Grant, \$11,415.

Publications

Summary

I have published 68 articles, two book chapters and nine commissioned reports, all peer-reviewed. I have published in high impact journals: Journal of Clinical Medicine (IF 5.583), Journal of Medical Internet Research (IF 5.175), New Media and Society (IF 4.180) and Journal of Behavioral Addictions (IF 4.134).

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Accepted or published online ahead of print

- 68 Rockloff, M., Browne, M., **Russell, A.M.T.**, Merkouris, S., & Dowling, N. (Published online 2019). A quantification of net consumer-surplus from gambling participation. *Journal of Gambling Studies*.
- ⁶⁷ Russell, A.M.T., Hing, N., & Browne, M. (Published online 2019). Risk factors for gambling problems

specifically associated with sports betting. Journal of Gambling Studies.

66 Hing, N., Russell, A.M.T., Thomas, A., & Jenkinson, R. (Published online 2019). Wagering

advertisements and inducements: exposure and perceived influence on betting behavior. *Journal of Gambling Studies*. doi: 10.1007/s10899-018-09823-y

⁶⁵ Hing, N., Browne, M., Russell, A.M.T., Greer, N., Thomas, A., Jenkinson, R., & Rockloff, M.J. (Published

online 2018). Where's the bonus in bonus bets? Assessing sports bettors' comprehension of their true cost. *Journal of Gambling Studies.* doi: 10.1007/s10899-018-9800-0

Published

- 64 Russell, A.M.T., Hing, N., Li, E, & Vitartas, P. (2019). Gambling risk groups are not all the same: risk factors amongst sports bettors. *Journal of Gambling Studies*, 35(1), 225-246. doi: 10.1007/s10899-018-9765-z
- 63 Russell, A.M.T., Hing, N., Browne, M., Li, E., & Vitartas, P. (2019). Who bets on micro events (microbets) in sports? *Journal of Gambling Studies*, *35*(1), 205-223. doi: 10.1007/s10899-018-9810-y
- 62 Browne, M., Hing, N., Russell, A.M.T., Thomas, A., & Jenkinson, R. (2019). The impact of exposure to wagering advertisements and inducements on intended an246d actual betting expenditure: An ecological momentary assessment study. *Journal of Behavioral Addictions, 8*(1), 146-156. doi: 10.1556/2006.8.2019.10
- 61 Browne, M., Hing, N., Rockloff, M., Russell, A.M.T., Greer, N., Nicoll, F., & Smith, G. (2019). A

multivariate evaluation of 25 proximal and distal risk factors for gambling-related harm. *Journal of Clinical Medicine*, *8*(4), 509. doi: 10.3390/jcm8040509.

- 60 Kinchin, I., Russell, A.M.T., Tsey, K., Jago, J., Wintzloff, T., Doran, C., & Meurk, C. (2019). Psychiatric inpatient cost of care before and after admission at a residential subacute step-up/step-down mental health facility. *Journal of Medical Economics*, 22(5), 491-498.
- 59 O'Neill, R., & Russell, A.M.T. (2019). Stop! Grammar time: University students' perceptions of the automated feedback program Grammarly. *Australasian Journal of Educational Technology*, 35(1), 42-56. doi: 10.14742/ajet.3795
- 58 Russell, A.M.T., Langham, E., & Hing, N. (2018). Social influences normalize gambling-related harm amongst higher risk gamblers. *Journal of Behavioral Addictions*, 7(4), 1100-1111. doi: 10.1556/2006.7.2018.139
- 57 Russell, A.M.T., Hing, N., Browne, M., & Rawat, V. (2018). Are direct messages (texts and emails) from wagering operators associated with betting intention and behaviour? An ecological momentary assessment study. *Journal of Behavioral Addictions*, 7(4), 1079-1090. doi: 10.1556/2006.7.2018.99
- 56 Hing, N., Russell, A.M.T., & Hronis, A. (2018). A definition and principles for responsible consumption of

gambling. International Gambling Studies, 18(3), 359-382. doi: 10.1080/14459795.2017.1390591

55 Hing, N., Russell, A.M.T., Li, E., & Vitartas, P. (2018). Does the uptake of wagering inducements predict impulse betting on sport? *Journal of Behavioral Addictions*, 1:7(1), 146-157. doi: 10.1556/2006.7.2018.17

- 54 Gainsbury, S.M., Russell, A.M.T., Hing, N., & Blaszczynski, A. (2018). Consumer engagement with and perceptions of offshore online gambling sites. *New Media and Society*, *20*(8), 2990-3010. doi: 10.1177/1461444817738783
- 53 Hing, N., Li, E., Vitartas, P., & **Russell, A.M.T.** (2018). On the spur of the moment: Intrinsic predictors of impulse sports betting. *Journal of Gambling Studies, 34*(2), 413-428. doi: 10.1007/s10899-017-9719-x
- 52 Hing, N., Russell, A.M.T., & Hronis, A. (2017). What behaviours support responsible consumption of gambling? Results from an expert survey. *International Journal of Mental Health and Addiction, 15*(6), 1320-1341. doi: 10.1007/s11469-017-9793-4
- 51 Hing, N., & **Russell, A.M.T.** (2017). Psychological factors, sociodemographic characteristics and coping mechanisms associated with the self-stigma of problem gambling. *Journal of Behavioral Addictions, 1;*6(3), 416-424. doi: 10.1556/2006.6.2017.056
- 50 Fritz, K., **Russell, A.M.T.**, Allwang, C., Kuiper, S., Lampe, L., & Malhi, G.S. (2017). Is a delay in the diagnosis of bipolar disorder inevitable? *Bipolar Disorders 19*(5), 396-400. doi: 10.1111/bdi.12499
- 49 Hing, N., Russell, A.M.T., Lamont, M., & Vitartas, P. (2017). Bet anywhere, anytime: An analysis of Internet sports bettors' responses to gambling promotions during sports broadcasts by problem gambling severity. *Journal of Gambling Studies, 33*(4), 1051-1065. doi: 10.1007/s10899-017-9671-9
- 48 Langham, E., Russell, A.M.T., Hing, N., & Gainsbury, S.M. (2017). Sense of Coherence and Gambling: Exploring the relationship between individual and environmental determinants of gambling behavior and experiences of harm. *Journal of Gambling Studies, 33*(2), 661-684. doi: 10.1007/s10899-016-9640-8
- 47 Hing, N., Russell, A.M.T., & Browne, M. (2017). Risk factors for gambling problems on online electronic gaming machines, race betting and sports betting. *Frontiers in Psychology: 15;8*, 775. doi: 10.3389/fpsyg.2017.00779
- 46 Hing, N., Sproston, K., Tran, K., & **Russell, A.M.T.** (2017). Gambling responsibly: Who does it and to what end? *Journal of Gambling Studies, 33*(1), 149-165. doi: 10.1007/s10899-016-9615-9
- 45 Hing, N., & **Russell, A.M.T.** (2017). How anticipated and experienced stigma can contribute to selfstigma: The case of problem gambling. *Frontiers in Psychology*, *8*:235, doi: 10.3389/fpsyg.2017.00235
- 44 Goodwin, B.C., Browne, M., Hing, N., & Russell, A.M.T. (2017). Applying a revised two-factor model of impulsivity to predict health behavior and wellbeing. *Personality and Individual Differences, 111*, 250-255. doi: 10.1016/j.paid.2017.02.029
- 43 Gainsbury, S.M., King, D.L., Russell, A.M.T., Delfabbro, P., & Hing, N. (2017). Virtual addictions: An examination of problematic social casino game use amongst at-risk gamblers. *Addictive Behaviors,* 64, 334-339. doi: 10.1016/j.addbeh.2015.12.007
- 42 King, D.L., Russell, A.M.T., Gainsbury, S.M., Delfabbro, P., & Hing, N. (2016). The cost of virtual wins: An examination of gambling risks in youth who spend money on social casino games. *Journal of Behavioral Addictions*, *5*(3), 401-409. doi: 10.1556/2006.5.2016.067.
- 41 Hing, N., Russell, A.M.T., & Gainsbury, S.M. (2016). Unpacking the public stigma of problem gambling: The process of stigma creation and contributors to social distancing. *Journal of Behavioral Addictions*, 5(3), 448-456. doi: 10.1556/2006.5.2016.057

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- 6 Gainsbury, S.M., Russell, A., & Blaszczynski, A. (2014). Are Psychology University student gamblers representative of general student and adult gamblers? A comparative analysis. *Journal of Gambling Studies, 30*(1), 11-25. doi: 10.1007/s10899-012-9334-9
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- 4 Gainsbury, S.M., **Russell, A.**, Hing, N., Wood, R., & Blaszczynski, A. (2013). The impact of Internet gambling on gambling problems: A comparison of moderate-risk and problem Internet and non-Internet gamblers. *Psychology of Addictive Behaviors, 27*(4), 1092-1101. doi: 10.1037/a0031475
- Gainsbury, S., Wood, R., Russell, A., Hing, N., & Blaszczynski, A. (2012). A digital revolution:
 Comparison of demographic profiles, attitudes and gambling behavior of Internet and non-Internet gamblers. *Computers in Human Behavior, 28*(4), 1388–1398. doi: 10.1016/j.chb.2012.02.024
- 2 Stevenson, R.J., Rich, A., & Russell, A. (2012). The nature and origin of cross-modal associations to odours. *Perception*, 41(5), 606–619. doi: 10.1068/p7223
- Russell, A.M.T., & Boakes, R.A. (2011). Identification of confusable odours including wines: Appropriate labels enhance performance. *Food Quality and Preference*, 22(3), 296–303. doi: 10.1016/j.foodqual.2010.11.007

Peer-reviewed Book Chapters (2 published)

2 Hing, N., Breen, H., Gordon, A., & Russell, A. (2015). Gambling Motivations of Indigenous Australians. In

G. Martinotti & H. Bowden-Jones (Eds.), *Gambling: Cultural Attitudes, Motivations and Impact on Quality of Life,* Huappage, NY: Nova Science Publishers. doi: 10.13140/2.1.2096.4169

¹ Lynch, J., McGoldrick, A., & Russell, A. (2012). Asylum Seekers as Political Spectacle. In D. Freedman and D.K. Thussu (Eds.), *Media and Terrorism: Global Perspectives*. London, SAGE Publications. doi: 10.4135/9781446288429.n16

Commissioned Reports (9 peer-reviewed, 1 non-peer-reviewed, 2 confidential)

Peer-reviewed

- 9 Russell, A.M.T., Langham, E., Hing, N., & Rawat, V. (2018). Social influences on gamblers by risk group: An egocentric social network analysis. Melbourne: Victorian Responsible Gambling Foundation.
- ⁸ Hing, N., Russell, A.M.T., & Rawat, V. (2018). *Direct messages received from wagering operators.* Melbourne: Victorian Responsible Gambling Foundation.
- Hing, N., Russell, A.M.T., Rockloff, M., Browne, M., Langham, E., Li, E., Lole, L., Greer, N., Thomas, A., Jenkinson, R., Rawat, V., & Thorne, H. (2018). *Effects of wagering marketing on vulnerable adults*. Melbourne: Victorian Responsible Gambling Foundation.
- Hing, N., Russell, A., & Hronis, A. (2016). Behavioural indicators of responsible gambling consumption.
 Melbourne: Victorian Responsible Gambling Foundation.
- 5 Hing, N., Nuske, E., **Russell, A.**, & Gainsbury, S. (2015). *The stigma of problem gambling: Causes characteristics and consequences.* Melbourne: Victorian Responsible Gambling Foundation.
- ⁴ Gainsbury, S., King, D., Delfabbro, P., Hing, N., Russell, A., Blaszczynski, A., & Derevensky, J. (2015). *The use of social media in gambling.* Melbourne: Gambling Research Australia. doi: 10.13140/RG.2.2.17903.23209
- Hing, N., Russell, A., Tolchard, B., & Nower, L. (2014). A comparative study of men and women gamblers in Victoria. Melbourne: Victorian Responsible Gambling Foundation. doi: 10.13140/2.1.2430.2402
- 2 Hing, N., Gainsbury, S., Blaszczynski, A., Wood, R., Lubman, D., & **Russell, A.** (2014). *Interactive gambling*. Melbourne: Gambling Research Australia.
- 1 Hing, N., Tolchard, B., Nuske, E., & **Russell, A.** (2014). *The effectiveness of gambling exclusion programs in Queensland*. Brisbane: Department of Justice and Attorney-General.

Non-peer-reviewed

 Hing, N., Russell, A.M.T., Rawat, V., Rockloff, M.J., & Browne, M. (2018). Evaluation of the My Moola Indigenous money management program as a gambling harm minimisation tool. Consultancy report. Melbourne: Victorian Responsible Gambling Foundation.

Confidential

- 2 Gainsbury, S., Hing, N., Hronis, A., & **Russell, A.** (2016). *Gambling and problem gambling amongst employees of Echo Entertainment casinos.* Confidential report for Echo Entertainment.
- ¹ Gainsbury, S., Hing, N., Willman, A., & Russell, A. (2015). Gambling and problem gambling amongst employees of Echo Entertainment casinos. Confidential report for Echo Entertainment.

Conference Presentations

Presenting author(s) underlined

Presented by me

Keynote/Invited Presentations

- **Russell, A.M.T.** & Greer, N. (2019). The convergence of gaming and gambling. 26th May. Invited presentation for the Alannah & Madeline Foundation and the Victorian Responsible Gambling Foundation, Melbourne.
- **Russell, A.M.T.** (2019). Social networks of gamblers. 15th February, Invited presentation for the Victorian Responsible Gambling Foundation, Lunchtime Learning session, Melbourne.
- **Russell, A.M.T.** (2018). Online gambling and related issues. 29th October, Invited presentation for PsychMed, Adelaide.
- **Russell, A.M.T.** (2017). The psychology of flavour perception, expertise and preference. The First Meeting of the Nutrition Society of Australia. 12 May, University of Newcastle.
- **Russell, A.M.T.** (2015). The Psychology of Wine Tasting. Invited lecture for the School of Psychology, 2 November, University of Sydney.
- Russell, A.M.T. (2015). The Psychology of Odour Perception. Invited lecture for the Australian Institute of Food Science Technology, 9 June, Sydney.
- **Russell, A.M.T.** (2015). Smell, Taste, Flavour, Wine. Invited lecture for the Department of Plant and Food Sciences, 15 May, University of Sydney.
- <u>Hing, N.</u>, Breen, H., <u>Gordon, A.</u>, & <u>Russell, A.M.T.</u> (2014). Indigenous Australians: Gambling-related harms and help-seeking. Invited presentation for the Problem Gambling Seminar: Problem Gambling Interventions for Indigenous Communities, 30 October, University of Sydney.
- **Russell, A.M.T.**, Hing, N., Breen, H., & Gordon, A. (2014). The gambling behaviour of Indigenous Australians. Invited presentation for the Problem Gambling Seminar: Problem Gambling Interventions for Indigenous Communities, 30 October, University of Sydney.

Russell, A.M.T. (2014). Taste and Smell Perception. Invited lecture for New York University, Sydney.

- <u>Russell, A.M.T.</u> (2012). Taste and Smell Perception. Invited lecture for the University of Sydney Psychology Society (PSYCHE).
- **Russell, A.M.T.** (2011). The Psychology of Wine Perception. Invited lecture for the University of Sydney Psychology Society (PSYCHE).

Conference Presentations

- **Russell, A.M.T.**, Hing, N., Browne, M., Vitartas, P., & Li, E. (2018). Who bets on micro events (microbets) in sports? 28th National Association for Gambling Studies Conference, Brisbane.
- Rawat, V., Hing, N., **Russell, A.M.T.**, & Browne, M. (2018). What's the message? Examining the content, and influences on behaviour, of direct messages received from wagering operators. 28th National Association for Gambling Studies Conference, Brisbane.
- **Russell, A.M.T.**, Langham, E., Hing, N., & Rawat, V. (2018). Social influences on gamblers by risk group: An egocentric social network analysis. 28th National Association for Gambling Studies Conference, Brisbane.
- **Russell, A.M.T.**, Langham, E., Rawat, V., & Hing, N. (2018). The social networks of gamblers. International Gambling Conference, Auckland.
- <u>Hing, N., Rockloff, M.</u>, <u>Russell, A.M.T.</u>, <u>Li, E.</u>, Browne, M. (2017). Effects of wagering marketing on vulnerable adults (symposium). 27th Annual National Association for Gambling Studies Conference, Melbourne.
- **Russell, A.M.T.**, Hing, N., Li, E., & Vitartas, P. (2017). Gambling risk groups are not all the same: Risk factors amongst sports bettors. 27th Annual National Association for Gambling Studies Conference, Melbourne.
- **Russell, A.M.T.**, Gainsbury, S.M., Hing, N., & King, D.L. (2015). How does the use of social media by gambling operators relate to gambling behaviour and problem gambling? Symposium at the 25th Annual

National Association for Gambling Studies Conference, Adelaide.

- **Russell, A.M.T.**, & Hing, N. (2015). Development and validation of the Behavioral Indicators of Responsible Gambling Scale, 25th Annual National Association for Gambling Studies Conference, Adelaide.
- Russell, A., Hing, N., Gainsbury, S., & Nuske, E. (2014). The nature of stigma against problem gamblers.
- 24th Annual National Association for Gambling Studies Conference, Gold Coast.
- **Russell, A.**, Gainsbury, S., Hing, N., Wood, R., Lubman, D., & Blaszczynski, A. (2013). Sampling issues with telephone and online surveys in gambling research. 23rd Annual National Association for Gambling Studies Conference.
- <u>Breen, H.</u>, Hing, N., Gordon, A., & <u>Russell, A.</u> (2013). Card gambling amongst Australian Aboriginal people: a quantitative study. 23rd Annual National Association for Gambling Studies Conference.
- **Russell, A.**, Stevenson, R.J., & Rich, A. (2013). Odour-colour synaesthesia and its conceptual basis. Sixth Annual Sydney Postgraduate Psychology Conference.
- <u>Hing, N., Breen, H., Gordon, A., & **Russell, A.** (2012). Risk factors for problem gambling amongst Australian Aboriginal groups. 22nd National Association for Gambling Studies Conference, Launceston, Australia.</u>
- **Russell, A.**, Gainsbury, S., & Blaszczynski, A. (2012). A look inside the database of an online gambling agency. 22nd National Association for Gambling Studies Conference, Launceston, Australia.
- **Russell, A.**, & Boakes, R.A. (2010). Training novices to identify odour elements in wine. Australasian Association for Chemosensory Science, Yarra Valley, Victoria, Australia.
- Russell, A., Rich, A., & Stevenson, R.J. (2010). Explorations into odour-colour synaesthesia what the

nose sees. Australasian Association for Chemosensory Science, Yarra Valley, Victoria, Australia.

- **Russell, A.**, & Boakes, R.A. (2010). Training novices to identify odour elements in wine. Sydney Postgraduate Psychology Conference, Sydney, Australia.
- **Russell, A.**, Rich, A., & Stevenson, R.J. (2010). Explorations into odour-colour synaesthesia. Sydney Postgraduate Psychology Conference, Sydney, Australia.
- **Russell, A.**, & Boakes, R.A. (2008). Taste and smell perceptual learning and wine expertise. Sydney Postgraduate Psychology Conference, Sydney, Australia.
- **Russell, A.**, & Boakes, R.A. (2008). Taste and smell perception and wine expertise. Australasian Association for Chemosensory Science, Brisbane, Australia. Runner-up for Best Student Presentation.
- **Russell, A.**, & Boakes, R.A. (2007). Odour and wine perception. University of Sydney Postgraduate Psychology Conference, Sydney, Australia.
- **Russell, A.**, & Boakes, R.A. (2006). Describing a wine can affect later recognition. Australasian Experimental Psychology Conference, Brisbane, Australia.

Presented by colleagues

Keynote/Invited Presentations

- <u>Hing, N.</u>, Russell, A.M.T., Nuske, E., Gainsbury, S.M., & Breen H. (2018). The stigma of problem gambling: Causes, characteristics and consequences. Keynote address at the Canadian Partnerships for Responsible Gambling Symposium: Breaking though: Shame, silence and stigma, 9-10 April Toronto.
- <u>Hing, N.</u>, **Russell, A.**, Nuske, E., & Gainsbury (2016). *The stigma of problem gambling: Causes, characteristics and consequences*. Invited presentation at the Victorian Responsible Gambling Foundation Industry Engagement Forum, 21 March, VRGF.
- <u>Hing, N.</u>, **Russell, A.**, Nuske, E., & Gainsbury (2016). *The stigma of problem gambling: Causes, characteristics and consequences*. Invited presentation at the Victorian Responsible Gambling Foundation Industry Engagement Forum, 17 March, VRGF.
- <u>Hing, N.</u>, **Russell, A.**, Nuske, E., & Gainsbury (2015). *The stigma of problem gambling: Causes, characteristics and consequences*. Invited presentation at the Victorian Responsible Gambling Foundation Lunchtime Learning, 7 December, VRGF.
- <u>Hing, N.</u>, **Russell, A.**, Nuske, E., & Gainsbury, S. (2015). *The stigma of problem gambling: Causes, characteristics and consequences.* Invited presentation at the Victorian Responsible Gambling Foundation Lunchtime Learning, 7 December, VRGF.

- <u>Hing, N.</u>, Breen, H., **Russell, A.**, & Gordon, A. (2014). Gambling problems and related risk factors amongst Aboriginal Australians. Invited presentation for the Problem Gambling Seminar: Problem Gambling Interventions for Indigenous Communities, 30 October, University of Sydney.
- <u>Hing, N.</u>, Gainsbury, S., **Russell, A.**, Blaszczynski, A., Wood R., & Lubman, D. (2014). Interactive gambling: The first nationally representative study in Australia. Invited presentation to the Queensland Responsible Gambling Advisory Committee, 31 July, Brisbane.
- <u>Hing, N.</u>, Tolchard, B., Nuske, E., & **Russell, A.** (2014). The effectiveness of self-exclusion programs in Queensland. Invited presentation at the Sunshine Coast Responsible Gambling Network, 16 April, Caloundra.
- <u>Gainsbury, S.</u>, Hing, N., **Russell, A.**, Blaszczynski, A., Wood, R., & Lubman, D. (2013). Interactive gambling in Australia. Keynote presentation at Responsible Gambling Awareness Week Opening Event,

Melbourne, Australia.

Published Abstracts

- <u>Li, E.</u>, Hing, N., **Russell, A.M.T.**, Vitartas, P. (2018). Impulsive betting behaviour: The impacts of food and substance consumption. *Australian & New Zealand Academy of Management Conference, Auckland, New Zealand*.
- Lole, L, Russell, A.M., Wolfram, R., Dean, A., & Hing, N. (2016). Assessment of smartphone technology to measure electrodermal activity: A validation study. *Frontiers in Human Neuroscience, ASP2016, the 26th Annual Meeting of the Australasian Society for Psychophysiology, Adelaide, Australia.* doi: 10.3389/conf.fnhum.2016.221.00007

Conference Presentations

- <u>Hing, N.</u>, Russell, A.M.T., Browne, M., Thomas, A., Jenkinson, R., Greer, N., & Rawat, V. (2018). Does advertising work? An ecological momentary assessment study of wagering advertisements and inducements. 28th National Association for Gambling Studies Conference, Brisbane.
- Lole, L., **Russell, A. M.**, Li, E., Greer, N., Thorne, H., & Hing, N. (2018, November). *Who's looking at responsible gambling messages? An eye-tracking study on wagering advertisements.* Paper presented at the 28th annual conference for the Australasian Society for Psychophysiology, Geelong, Australia, 19-20 November 2018.
- <u>Hing, N.</u>, **Russell, A.**, Browne, M., Thomas, A., Jenkinson, R., Greer, N., & Rawat, V. (2018). *Effects of wagering advertisements and inducements on betting behaviour.* 12th European Conference on Gambling Studies and Policy Issues, 11-14 September, Malta.
- <u>Jenkinson, R.</u>, **Russell, A.**, Hing, N., Thomas, A., Greer, N., & Rawat, V. (2018). *How exposure to wagering marketing interacts with contextual factors to influence impulsive betting among sports and race bettors.* Gambling Harm Conference, 13-15 August, Geelong.
- <u>Hing, N.</u>, Li, E., Vitartas, P., & **Russell, A.M.T.** (2016). "In the heat of the moment": Impulse betting amongst Australian sports bettors. 26th Annual National Association for Gambling Studies Conference, Cairns.
- Hing, N. & Russell, A.M.T. (2016). Responsible consumption of gambling: Results from a survey of experts.

16th International Conference on Gambling and Risk Taking, Las Vegas, Nevada.

- <u>Hing, N.</u>, Russell, A.M.T., Vitartas, P., & Lamont, M. (2015). Demographic, behavioural and normative risk factors for gambling problems amongst sports bettors. 25th Annual National Association for Gambling Studies Conference, Adelaide.
- Hing, N., Nuske, E., Gainsbury, S., **Russell, A.**, & <u>Breen, H.</u> (2015). Stigma: Counsellors' perspectives. 25th Annual National Association for Gambling Studies Conference, Adelaide.
- <u>King, D.</u>, Gainsbury, S., & **Russell, A.** (2015). Virtually broke? Problematic social casino game use among at-risk gamblers. Symposium at the 25th Annual National Association for Gambling Studies Conference, Adelaide.
- <u>Hing, N.</u>, Nuske, E., Breen, H., **Russell, A.**, & Gainsbury, S. (2015). How is problem gambling stigmatised? Insights from a mixed-method study of public and self-stigma associated with problem gambling. Lisbon

Addictions Conference 2015, 23-25 September, Lisbon.

- <u>Hing, N.</u>, **Russell, A.**, Gainsbury, S., & Blaszczynski, A. (2015). Characteristics and help-seeking behaviors of Internet gamblers based on most problematic mode of gambling. Third Asia Pacific Conference on Gambling and Commercial Gaming Research and Summit on Lottery Development, 12-14 April, Beijing.
- Hing, N., Nuske, E., Gainsbury, S., **Russell, A.**, & <u>Breen, H.</u> (2015). Stigma: Counsellors' perspectives. 4th Asian Pacific Problem Gambling and Addiction Conference, Hong Kong, SAR, China.
- <u>Hing, N.</u>, Russell, A., Nuske, E., & Tolchard, B. (2014). How effective is self-exclusion? A longitudinal study of excluders and non-excluders. 24th Annual National Association for Gambling Studies Conference, Gold Coast.
- <u>Nuske, E.</u>, Hing, N., Gainsbury, S., & **Russell, A.** (2014). 'It's a filthy habit: How I feel about how others see me'. Problem Gamblers' Experiences of Stigma. 24th Annual National Association for Gambling Studies Conference, Gold Coast.
- Rich, A., Russell, A., & Stevenson, R. (2013). Visually perceiving odour: insights into olfactory synaesthesia.

Australasian Cognitive Neuroscience Society Conference.

- <u>Gainsbury, S.</u>, Hing, N., **Russell, A.**, Blaszczynski, A., Wood, R., & Lubman, D. (2013). How the virtual chips stack up: The first nationally representative snapshot of Australian Interactive gamblers. 23rd Annual National Association for Gambling Studies Conference.
- <u>Gainsbury, S.</u>, Hing, N., **Russell, A.**, Blaszczynski, A., Wood, R., & Lubman, D. (2013). The impact of partial liberalisation of Internet gambling: A comparison of Internet and non-Internet gamblers. 15th International Conference on Gambling & Risk Taking, Las Vegas, NV, USA.

Peer-Reviews

I have peer-reviewed articles for the following publications and agencies: Acta Psychologica; Addictive Behaviors Reports; Addiction Research and Theory; Australian Journal of Grape and Wine Research; BMC Public Health; BMC Research Notes; Expert Review of Pharmaeconomics and Outcomes Research; Food Quality and Preference; Health Psychology and Behavioral Medicine; Industrial Health; International Gambling Studies; International Journal of Methods in Psychiatric Research; Journal of Addictive Behaviors Therapy & Rehabilitation; Journal of Affective Disorders; Journal of Gambling Studies; Expert Review of Pharmaeconomics and Outcomes Research; Victorian Responsible Gambling Foundation.

Membership of Professional Societies

- 2015 Present: Australian Psychological Society (Member)
- 2012 Present: National Association for Gambling Studies
- 2008 Present: Australasian Association for Chemosensory Science

Employment History

Research

My research work has mostly been in the area of gambling research. I am currently a Senior Postdoctoral Fellow at CQUniversity and was previously the Chief Statistical Analyst at the Centre for Gambling Education and Research (CGER) at Southern Cross University. I was recognised as a noteworthy Early Career Researcher at both CQUniversity and Southern Cross University through my selection in Early Career Researcher Development Program in 2015 and 2018, entry into both of which was extremely competitive.

2016-09 – Present: Senior Postdoctoral Fellow (FT), Health, Medical and Applied Sciences, CQUniversity 2014 – 2016: Postdoctoral Research Fellow (FT), CGER, Southern Cross University

2012 – 2014: Postdoctoral Research Fellow (PT), CGER, Southern Cross University 2009 – 2012: Research Assistant, School of Psychology, University of Sydney.

Teaching

My teaching positions have mostly involved statistics and research methods tutoring and lecturing, including course coordination of courses with over 500 students, curriculum development, setting assessments and supervising their marking, developing new lectures and tutorials and supervising and mentoring tutors. I delivered statistics material to Psychology students of all levels, from first year to Honours and was noted for having excellent evaluations from students. I was the first Senior Tutor in the School of Psychology for many years and also provided statistical consulting to postgraduates and staff.

I was recruited to teach statistics to Business and Marketing Honours students in the Business School at the University of Sydney, including developing their curriculum and all teaching materials.

I have also delivered lectures on taste and smell perception and wine expertise. My teaching of these topics was particularly popular and I was asked to deliver guest lectures by the University of Sydney Psychology Society (PSYCHE).

Statistics/research methods

2019: Lecturer, Psychology, CQUniversity (2nd year research methods)

2013: Associate Lecturer (PT), School of Psychology, University of Sydney (2nd year)

2010 – 2013: Casual Lecturer and Tutor, Business School, University of Sydney (2nd year, Hons) 2009 – 2013: Casual Lecturer, School of Psychology, University of Sydney (2nd year, 3rd year) 2009 – 2013: Senior Tutor, School of Psychology, University of Sydney (2nd year, 3rd year)

2007 – 2014: Tutor, School of Psychology, University of Sydney (2nd year, 3rd year, Hons) 2008 – 2013: Summer School Lecturer, School of Psychology, University of Sydney (1st year)

Taste and smell perception and first year Psychology

2015 – Present: Casual Lecturer, Department of Plant and Food Sciences, University of Sydney 2014: Guest Lecturer, Psychology, New York University (Sydney Campus)

2011 – 2012: Guest Lecturer, Psychology Society (PSYCHE), University of Sydney

2009 – 2013: Casual Lecturer, School of Psychology, University of Sydney (2nd year)

2007 – 2014: Tutor, School of Psychology, University of Sydney (1st year)

Other Academic

I served as the Postgraduate Student Representative for Psychology Postgraduate Students in the School of Psychology, University of Sydney in 2008 and 2009. This role involved representing students at weekly School meetings and conveying information from these meetings back to my fellow students.

In this role, I also created the annual Sydney Postgraduate Psychology Conference in 2008. Theaim of the conference was to foster relationships with students in other universities, as well as to share knowledge and provide a safe place to present research and gain insights into participants' fields of interest, as well as in other areas. I convened this conference in 2008 and 2009, with 50 presenters and around 180 registered attendees. The conference has continued to this day with attendees from the University of Sydney, the University of NSW, Macquarie University, The University of Western Sydney and international visitors. I was awarded a prize for Contribution to Postgraduate Student Community and Activity in 2009 for this work.

Other non-Academic

I worked in a number of casual, part-time and full-time positions during my studies.

2003 - 2012: Wine and Spirit Consultant, Rose Bay Drive In Liquor Store, Sydney, Australia

Previous: Hoyts Cinemas (Eastgardens, Fox Studios, Cinema Paris), Projectionist and Manager; Movies 4U, Area Manager; Randwick Ritz, Floor Manager; SMART Research; Direction First.

Professional Development

- 2019: CQUniversity Accelerate Supervision Development Program
- 2017: CQUniversity Early Career Researcher Development Program

2017: R Advanced. Research Bazaar, UTS.

- 2017: R Software Carpentry (Basics). Research Bazaar, UTS.
- 2017: Early Career Researcher Development Program. CQUniversity.
- 2016: Structural Equation and Multilevel Modeling in MPlus. University of Melbourne. 2015: HDR Supervisor Workshop. Southern Cross University.
- 2015: Rising Star Early Career Researcher Development Program. Southern Cross University. 2015: Applied Structural Equation Modelling course. ACSPRI Summer School.
- 2015: Learning R: Open Source (Free) Stats Package course. ACSPRI Summer School.

Prizes and Awards

Publication recognition awards

2017: CQUniversity Publication Recognition Award

2014: University of Sydney School of Psychology Postgraduate Publication Prize 2013: University of Sydney School of Psychology Postgraduate Publication Prize 2012: University of Sydney School of Psychology Postgraduate Publication Prize

All awarded for having an exceptional record of high quality peer-reviewed publications in a calendar year.

Speaking awards

2017: Third Place, 5 Minute Research Pitch, National Final (Group One – Science and Health) 2017: Winner, 5 Minute Research Pitch, CQUniversity Final (Group One – Science and Health) 2014: Finalist, 3 Minute Thesis, University of Sydney Internal finals.

Service

2009: University of Sydney School of Psychology Alumni Association Award for Contribution to Postgraduate Student Community and Activity

Awarded for founding and convening the Sydney Postgraduate Psychology Conference and for my work as Postgraduate Student Representative in 2008 and 2009.

Hannah Thorne

h.thorne@cqu.edu.au

EDUCATION

2015-present PhD Candidate

- Research area: gambling, alcohol consumption and sleep
- Awarded CQUniversity Australia's highly competitive Platinum Scholarship
- Winner: 2018 CQUniversity "3 Minute Thesis" competition

2015-2017 Graduate Certificate in Tertiary Education Central Queensland University

- Theory and practice of learning and teaching
- Focus on discipline-specific innovative education techniques

2008-2009 PGDip Environmental Management

- Awarded High Distinction
- Number one ranked university in New Zealand
- Ranked in the Top 100 Environmental Sciences Faculties in the QS World University Rankings by Subject

2002-2005 BA(Hons) Psychology

- Awarded First Class Honours
- Otago University's psychology department is an Internationally renowned research-based department, ranked 80th place internationally in the 2021 QS World University Rankings by Subject, and the highest ranked academic department in New Zealand
- Peer-elected student representative for the psychology department

APPOINTMENTS

Associate Lecturer in Psychology

School of Human, Health and Social Science

2015-current

Central Queensland University

University of Auckland

University of Otago

Central Queensland University, Adelaide, Australia	
Research Assistant	2014-current
Experimental Gambling Research Laboratory	
Central Queensland University, Adelaide, Australia	
Research Officer	
Gambling and Addictions Research Centre	
AUT University, Auckland, New Zealand	2009-2013
Analyst	
Survey Design and Development	
Statistics New Zealand, Wellington, New Zealand	2007-2008

TEACHING

Year	Course	Role
2021	Learning and Behaviour Modification (3 rd year psychology)	Coordinator
2021 associate	Applied Positive Psychology (Postgraduate)	Teaching
2020	Social Foundations of Psychology (1 st year psychology)	Coordinator
2018	Social Foundations of Psychology (1 st year psychology)	Coordinator
2018 associate	Social, Cultural and Critical Psychology (2^{nd} year psychology)	Teaching
2017	Biological Foundations of Psychology (1 st year psychology)	Coordinator
2016	Social Foundations of Psychology (1 st year psychology)	Coordinator
2015	Research Methods (2 nd year psychology)	Coordinator

COMPETITIVE RESEARCH FUNDING

Rockloff, M., Browne, M., Hing, N., Russell, A.M.T., Thorne, H., Newall, P., & Luan, R. J. (2021). Skill based gambling in Australia. Gambling Research Australia (\$379,816).

Rockloff, M., Browne, M., Goodwin, B., Rose, J., Langham, E., Li, E., Thorne, H., & Armstrong, T. (2015). Mobile Pokie Apps: The Perfect Substitute or the Perfect Storm? Victorian Responsible Gambling Foundation Grant (\$190,000).

Li, E. & Thorne, H. (2015). Population Research Grant Scheme (\$19,500 which equates to the inclusion of 10 standard questions in the National Social Survey).

Bellringer, M., Landon, J., Abbott, A. & Thorne, H. (2010). Brief literature review to summarise the social impacts of gaming machines and TAB gambling in Auckland. Auckland City Council (\$10,000).

PUBLICATIONS

Peer reviewed journal articles:

Thorne, H. B., Rockloff, M. J., Ferguson, S. A., Vincent, G. E., & Browne, M. (2021). Gambling problems are associated with alcohol misuse and insomnia: Results from a representative national telephone survey. *International Journal of Environmental Research and Public Health, 18*(13). doi: 10.3390/ijerph18136683

Lole, L., Russell, A. M. T., Li, E., **Thorne, H**., Greer, N., & Hing, N. (2020). Interest in inducements: A psychophysiological study on sports betting advertising. *International Journal of Psychophysiology, 147*, 100–106. doi: 10.1016/j.ijpsycho.2019.10.015

Lole, L., Li, E., Russell, A. M., Greer, N., **Thorne, H**., & Hing, N. (2019). Are sports bettors looking at responsible gambling messages? An eye-tracking study on wagering advertisements. *Journal of Behavioral Addictions, 8*(3), 499–507. doi: 10.1556/2006.8.2019.37

Thorne, H. B., Browne, M., & Rockloff, M. J. (2019). That's what you get for waking up in Vegas: Fatigue and alcohol consumption are associated with the duration of gambling sessions. *Journal of Gambling Issues, 42,* 146-162. http://dx.doi.org/10.4309/jgi.2019.42.8

Rockloff, M., Browne, M., Greer, N., Armstrong, T., **Thorne, H**. (2019). Mobile EGM Games: Evidence that simulated games encourage real-money gambling. *Journal of Gambling Studies*. doi: 10.1007/s10899-019-09869-6

Li, E., Langham, E., Browne, M., Rockloff, M., & **Thorne, H.** (2018). Gambling and sport: Implicit association and explicit intention among underage youth. *Journal of Gambling Studies*, *34*(3), 739–756. doi: 10.1007/s10899-018-9756-0

Goodwin, B., **Thorne, H. B**., Langham, E. & Moskovsky, N., (2017). Traditional and innovated gambling products: An exploration of player preferences. *International Gambling Studies*, *17*(2), 219-235. doi: 10.1080/14459795.2017.1321681

Rockloff, M., Moskovsky, N., Thorne, H., Browne, M., Bryden, G. (2017). Electronic Gaming Machine (EGM) environments: Market segments and risk. *Journal of Gambling Studies*, *33*(4), 1139-1152. doi: 10.1007/s10899-017-9681-7

Rockloff, M., Moskovsky, N., Thorne, H., Browne, M., Bryden, G. (2017). Environmental factors in the choice of EGMs: A discrete choice experiment. *Journal of Gambling Studies*, *33*(3), 719-734. doi: 10.1007/s10899-016-9622-x

Langham, E., Thorne, H., Browne, M., Donaldson, P., Rose, J. & Rockloff, M. (2016). Understanding gambling related harm: A proposed definition, conceptual framework and taxonomy of harms. *BMC Public Health*, *16*(80).

Thorne, H. B., Rockloff, M. J., Langham, E. & Li, E. (2016). Hierarchy of gambling choices: A framework for examining EGM gambling environment preferences. *Journal of Gambling Studies*, *32*(4), 1101-1113.

Thorne, H. B., Goodwin, B., Langham, E., Rockloff, M. J. & Rose, J. (2016). Preferred Electronic Gaming Machine environments of recreational versus problem gamblers: An in-venue mixed methods study. *Journal of Gambling Issues, 34*, 221-243.

Manuscripts under review:

Thorne, H. B., Rockloff, M. J., Vincent, G. E., Browne, M. & Ferguson, S. A. (2021). Tired of losing, or perhaps just losing while tired? A laboratory study of the impact of realistic levels of extended wakefulness on gambling. *PlosOne*.

Peer reviewed client reports:

Rockloff, M, Browne, M, Hing, N, Thorne, H, Russell, A, Greer, N, Tran, K, Brook, K, Sproston, & K. (2018). *Victorian population gambling and health study 2018–2019.* Research report for the Victorian Responsible Gambling Foundation, Melbourne, Victoria.

https://responsiblegambling.vic.gov.au/resources/publications/victorian-population-gambling-and-health-study-20182019-759/

Hing, N., Russell, A., Rockloff, M., Browne, M., Langham, E., Li, E., Lole, L., Greer, N., Thomas, A., Jenkinson, R., Rawat, V. & **Thorne, H**. (2018). *Effects of wagering marketing on vulnerable adults*. Research Report for the Victorian Responsible Gambling Foundation, Melbourne, Victoria.

Rockloff, M., Greer, N., Armstrong, T., **Thorne, H**., Langham, E., Browne, M., Moskovsky, N., Goodwin, B. & Li, E. (2018). *Mobile EGM apps: The perfect substitute or the perfect storm?* Research report for Gambling Research Australia, Melbourne, Victoria.

Rockloff, M., Donaldson, P., Browne, M., Greer, N., Moskovsky, N., Armstrong, T., **Thorne, H**., Goodwin, B. & Langham, E. (2016) *Innovation in traditional gambling products.* Research report for Gambling Research Australia, Melbourne, Victoria.

Rockloff, M., **Thorne, H**., Goodwin, B., Moskovsky, N. Langham, E., Browne, M., Donaldson, P., Li, E. & Rose, J. (2015). *Gambling online and offline: EGM environments that contribute to excess consumption and harm.* Research Report for the Victorian Responsible Gambling Foundation, Melbourne, Victoria.

Browne, M., Langham, E., Rawat, V., Greer, N., Li, E., Rose, J., Rockloff, M., Donaldson, P., **Thorne, H**., Goodwin, B., Bryden, G., & Best, T. (2015). *Assessing gambling related harm in Victoria*. Research Report for the Victorian Responsible Gambling Foundation, Melbourne, Victoria.

Thorne, H., Bellringer, M., Abbott, M., & Landon, J. (2012). *Brief literature review to summarise the social impacts of gaming machines and TAB gambling in Auckland*. Research Report for the Auckland City Council, Auckland, New Zealand.

Landon, J., **Thorne, H**., Palmer, K., Page, A., & Abbott, M. (2010). *Focused literature review for the problem gambling programme*. Research Report for the Health Sponsorship Council, Wellington, New Zealand.

Extension Materials:

Best, T., **Thorne, H**., Axtens, J., Gleeson, M., Hiti-Bandaralage, J., Hayward, A., Mohsin, M., Ng, E., Zull, A., Slaughter, G. & Mitter, N. (2021). *Tissue Culture for Australian Avocados: Project Information Pack*. Brisbane, Australia: Central Queensland University.

Presentations:

Thorne, H., Rockloff, M. J., Vincent, G. E., Browne, M. & Ferguson, S. A. (2021). Sleep and Gambling: Are they Related? Australasian Sleep Association South Australia Branch Meeting, Adelaide, SA.

Thorne, H., Rockloff, M., Browne, M., Vincent, G. & Ferguson, S. (2018). Good Night and Good Luck: Testing the Dangers of Gambling and Sleep Deprivation. National Associations for Gambling Studies Australia 28th Annual Conference, Brisbane, QLD.

Thorne, H., Rockloff, M., Browne, M., Vincent, G. & Ferguson, S. (2018). Betting on Sleep Restriction: Examining the Relationship between Sleep and Gambling Using Online Behaviour Reporting. Sleep DownUnder Annual Scientific Meeting, Brisbane, QLD.

Thorne, H., Rockloff, M., Browne, M. & Ferguson, S. (2018). Gambling, Alcohol and Sleep Restriction: A Losing Combination? 7th International Gambling Conference, Auckland, NZ.

Thorne, H., Rockloff, M., Browne, M. & Ferguson, S. (2017). Gambling, Alcohol and Sleep Restriction: A Losing Combination? National Associations for Gambling Studies Australia 27th Annual Conference, Melbourne, VIC.

Thorne, H., Rockloff, M., Browne, M. & Ferguson, S. (2017). Exploring Gambling, Alcohol and Sleep Restriction. Adelaide Sleep Retreat, Adelaide, SA.

Langham, E. & Thorne, H. (2016). The impact of gambling on children: Examining the findings from the Victorian gambling harm study in the context of lifecourse theory. National Associations for Gambling Studies Australia 26th Annual Conference, Cairns, QLD.

Langham, E. & Thorne, H. (2016). The impact of gambling on children: Examining the findings from the Victorian gambling harm study in the context of lifecourse theory. Australian Institute of Family Studies Conference, Melbourne, VIC.

Thorne, H. & Langham, E. (2015). Hierarchy of gambling choices: A framework for examining EGM gambling environment preferences. National Associations for Gambling Studies Australia 25th Annual Conference, Adelaide, SA.

Thorne, H. & Goodwin, B. (2014). Electronic Gaming Environment Preferences: An In- venue Interview Study. National Associations for Gambling Studies Australia 24th Annual Conference, Gold Coast, QLD.

Thorne, H., Coombes, R. & Abbott, M. (2012). Early identification of potential problem gamblers in a casino – Discussion of casino patron data. 4th International Gambling Conference, Auckland, New Zealand.

Thorne, H., Coombes, R., & Abbott, M. (2011). Early identification of casino potential problem gamblers: Phase Two – the interviews. National Associations for Gambling Studies 21st Annual Conference, Melbourne, VIC.

Thorne, H. (2010). Gambling Harm, risk factors and change- A review of current literature. National Associations for Gambling Studies Australia 20th Annual Conference, Gold Coast, QLD.

AWARDS AND SCHOLARSHIPS

Outstanding PhD/ECR Research Award	
Australasian Sleep Association South Australia Branch Meeting (\$100)	
Student Conference Scholarship	2018
National Association of Gambling Studies (\$815)	
Semi-Finalist: Three Minute Thesis (3MT) Asia-Pacific Semi-Finals 2018	
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Three Minute Thesis Competition	
University of Queensland	
Winner: Three Minute Thesis (3MT) University Winner (\$3000)	2018
Central Queensland University	
Winner: Three Minute Thesis (3MT) People's Choice (\$2000) 2018	
Central Queensland University	
Publication Recognition Award, Academic Level A	2017
Central Queensland University	
PhD Scholarship	2015
Platinum Scholarship (\$132,000)	
Central Queensland University	

Philip Newall

https://sites.google.com/site/philipnewallresearch/

p.newall@cqu.edu.au

Employment

• 2021 (May) - present, Board member

Advisory Board for Safer Gambling, Gambling Commission

• 2019 (October) – present, Postdoctoral researcher

Experimental Gambling Research Laboratory, Central Queensland University

• 2018 (March) – 2019 (October), Postdoctoral researcher

Applied Psychology, WMG, University of Warwick

• 2017 (March) – 2018 (February), Postdoctoral researcher

Chair of Marketing, Technical University of Munich

Education

• 2013 – 2016 PhD in Economics

Stirling Behavioural Science Centre, Stirling University Dissertation title: "Household financial decision making" Gordon D. A. Brown external examiner (no corrections)

2012 – 2013 MSc in Cognitive and Decision Sciences

University College London

2006 – 2009 BSc in Economics and Statistics

University College London

 Other: Chartered Financial Analyst Level 3 (CFA Institute); Investment Manager Certificate (CFA UK)

Publications

- Newall, P.W.S., & Rockloff, M.J. (2021). Promoting safer gambling via the removal of harmful sludge: A view on how behavioral science's "nudge" concept relates to online gambling. *Addiction*. doi: 10.1111/ADD.15700
- Newall, P.W.S., & Xiao, L.Y. (2021). Gambling marketing bans in professional sports neglect the risks posed by financial trading apps and cryptocurrencies. *Gaming Law Review*.

- Russell, A.M.T., Browne, M., Hing, N., Rockloff, M., & Newall, P. (2021). Are any samples representative or unbiased? Reply to Pickering and Blaszczynski. *International Gambling Studies*. doi: 10.1080/14459795.2021.1973535
- Mosenhauer, M., Newall, P.W.S., & Walasek, L. (2021). The stock market as a casino: Associations between stock market trading frequency and problem gambling. *Journal of Behavioral Addictions.* doi: 10.1556/2006.2021.00058
- Xiao, L.Y., Henderson, L.L., Yuhan, Y., & Newall, P.W.S. (2021). Gaming the system: sub-optimal compliance with loot box probability disclosure regulations in China. *Behavioural Public Policy*. doi: 10.1017/bpp.2021.23
- Weiss-Cohen, L., Newall, P.W.S., & Ayton, P. (2021). Persistence is futile: Chasing of past performance in repeated investment choices. *Journal of Experimental Psychology: Applied*. doi: 10.1037/xap0000358
- Hing, N., Russell, A.M.T., King, D., Rockloff, M., Browne, M., Greer, N., Newall, P., Sproston, K., Chen, L., & Coughlin, S. (2021). NSW Youth Gambling Study 2020. Sydney: NSW Responsible Gambling Fund.
- Newall, P.W.S., Russell, A.M.T., & Hing, N. (2021). Structural characteristics of fixed-odds sports betting products. *Journal of Behavioral Addictions*. doi: 10.1556/2006.2021.00008
- Muggleton, N., Parpart, P., Newall, P., Leake, D., Gathergood, J., & Stewart, N. (2021). The association between gambling and financial, social, and health outcomes in big financial data. *Nature Human Behaviour, 5*, 319-326. doi: 10.1038/s41562-020-01045-w
- Newall, P.W.S., & Cortis, D. (2021). Are sports bettors biased toward longshots, favorites, or both? A literature review. *Risks*. doi: 10.3390/risks9010022
- Newall, P.W.S., & Peacey, M.W. (2021). Pension behavior and policy. *Journal of Behavioral and Experimental Finance.* doi: 10.1016/j.jbef.2020.100449
- Newall, P.W.S., Walasek, L., Ludvig, E.A., & Rockloff, M.J. (2021). Nudge versus sludge in gambling warning labels. *Behavioral Science & Policy*.
- Browne, M., Rawat, V., Newall, P., Begg, S., Rockloff, M., & Hing, N. (2020). A framework for indirect elicitation of the public health impact of gambling problems. *BMC Public Health*. doi: 10.1186/s12889-020-09813-z
- Newall, P.W.S., Walasek, L., Hassanniakalager, A., Russell, A.M.T., Ludvig, E.A., & Browne, M. (2020). Statistical risk warnings in gambling. *Behavioural Public Policy*. doi:10.1017/bpp.2020.59
- Newall, P.W.S., Russell, A.M.T., Sharman, S., & Walasek, L. (2020). Recollected usage of legal youth gambling products: Comparisons between adult

gamblers and non-gamblers in the UK and Australia. *Addictive Behaviors*. doi: 10.1016/j.addbeh.2020.106685

- Newall, P.W.S., Walasek, L., & Ludvig, E.A. (2020). Risk communication improvements for gambling: House-edge information and volatility statements. *Psychology of Addictive Behaviors.* doi: 10.1037/adb0000695
- Newall, P.W.S., Walasek, L., Vázquez Kiesel, R., Ludvig, E.A., & Meyer, C. (2020). Request-a-bet sports betting products indicate patterns of bettor preference and bookmaker profits. *Journal of Behavioral Addictions*. doi: 10.1556/2006.2020.00054
- Newall, P.W.S., Walasek, L., Ludvig, E.A., & Rockloff, M.J. (2020). House-edge information yields lower subjective chances of winning than equivalent returnto-player percentages: New evidence from support forum participants. *Journal* of Gambling Issues. doi: 10.4309/jgi.2020.45.9
- Newall, P.W.S., Russell, A.M.T., Sharman, S., & Walasek, L. (2020). Associations between recalled use of legal UK youth gambling products and adult disordered gambling. *Journal of Behavioral Addictions.* doi: 10.1556/2006.2020.00048
- Newall, P.W.S., Cassidy, R., Walasek, L., Ludvig, E.A., & Meyer, C. (2020). Who uses custom sports betting products? *Addiction Research & Theory*. doi: 10.1080/16066359.2020.1792887
- Newall, P.W.S., Walasek, L., & Ludvig, E.A. (2020). Percentage and currency framing of house-edge gambling warning labels. *International Journal of Mental Health and Addiction*. doi:10.1007/s11469-020-00286-0
- Critchlow, N., Moodie, C., Stead, M., Morgan, A., Newall, P.W.S., & Dobbie, F. (2020). Visibility of age restriction warnings, consumer protection messages, and terms and conditions: A content analysis of paid-for gambling advertising in the United Kingdom. *Public Health.* doi: 10.1016/j.puhe.2020.04.004
- Newall, P.W.S., Walasek, L., & Ludvig, E.A. (2020). Equivalent gambling warning labels are perceived differently. *Addiction*, *111*(9), 1762-1767. doi: 10.1111/add.14954
- Sharman, S., Ferreira, C.A., & Newall, P.W.S. (2019). Exposure to gambling and alcohol marketing in soccer matchday programmes. *Journal of Gambling Studies.* doi: 10.1007/s10899-019-09912-6
- Newall, P.W.S., & Cortis, D. (2019). High-stakes hedges are misunderstood too. A commentary on: "Valuing bets and hedges: Implications for the construct of risk preference". *Judgment and Decision Making*, *14*(5), 605-607.

- Newall, P.W.S., Thobhani, A., Walasek, L., & Meyer, C. (2019). Live-odds gambling advertising and consumer protection. *PLOS One, 14*(6), e0216876. doi: 10.1371/journal.pone.0216876
- Hassanniakalager, A., & Newall, P.W.S. (2019). A machine learning perspective on responsible gambling. *Behavioural Public Policy*. doi: 10.1017/bpp.2019.9
- Newall, P.W.S., Moodie, C., Reith, G., Stead, M., Critchlow, N., Morgan, A., & Dobbie, F. (2019). Gambling marketing from 2014 to 2018: A literature review. *Current Addiction Reports, 6*(2), 49-56. doi: 10.1007/s40429-019-00239-1
- Newall, P.W.S. (2019). Dark nudges in gambling. *Addiction Research & Theory,* 27(2), 65-67. doi: 10.1080/16066359.2018.1474206
- Newall, P.W.S., & Parker, K. N. (2019). Improved mutual fund investment choice architecture. *Journal of Behavioral Finance*, 20(1), 96-106. doi: 10.1080/15427560.2018.1464455
- Newall, P.W.S. (2018). Comment: Heads-up limit hold'em poker is solved. *Frontiers in Psychology, 9*(210). doi: 10.3389/fpsyg.2018.00210
- Buhagiar, R., Cortis, D., & Newall, P.W.S. (2018). Why do some soccer bettors lose more money than others? *Journal of Behavioral and Experimental Finance*, *18*(2018), 85-93. doi: 10.1016/j.jbef.2018.01.010
- Newall, P.W.S. (2017). Behavioral complexity of British gambling advertising. *Addiction Research & Theory*, 25(6), 505-511. doi: 10.1080/16066359.2017.1287901
- Newall, P.W.S. (2016). Downside financial risk is misunderstood. *Judgment and Decision Making, 11*(5), 416-423.
- Newall, P.W.S. (2015). How bookies make your money. *Judgment and Decision Making*, *10*(3), 225-231.
- Newall, P.W.S., & Love, B.C. (2015). Nudging investors big and small toward better decisions. *Decision*, *2*(4), 319-326.
- Newall, P. (2013). *Further limit hold 'em: Exploring the model poker game*. Las Vegas, Nevada: Two Plus Two Publishing.
- Newall, P. (2011). *The intelligent poker player*. Las Vegas, Nevada: Two Plus Two Publishing.

Work in preparation

 Hing. N., Rockloff, M., Russell, A.M.T., Browne, M., Newall, P., Greer, N., King, D., & Thorne, H. (Submitted). Loot box purchasing is linked to problem gambling in adolescents when controlling for monetary gambling participation. *Journal* of Behavioral Addictions.

- Hing, N., Russell, A. M. T., Bryden, G., Newall, P., King, D., Rockloff, M., Browne, M., & Greer, N. (Submitted). Skin gambling amongst adolescents, and links with monetary gambling and problematic gambling. *Journal of Behavioral Addictions.*
- MacLeod, S., & Newall, P.W.S. (2021). Investigating implicit racial bias within Australian Rules Football commentary. *International Review for the Sociology* of Sport.
- Newall, P.W.S. (2021). The gamblification of investing: How a new generation of investors is being born to lose.
- Newall, P.W.S., Byrne, C.A., Russell, A.M.T., & Rockloff, M.J. (Revise & Resubmit). House-edge information and a volatility warning reduce gambling initiation and persistence: superior alternatives to return-to-player percentages. https://psyarxiv.com/c46jt
- Newall, P.W.S., & Peacey, M.W. It will be worth it, in the end: A theory of variable impatience in a changing world.
- Newall, P.W.S., Weiss-Cohen, L., Singmann, H., Boyce, W.P., Walasek, L., & Rockloff, M.J. (2021). A speed-of-play limit reduces gambling expenditure in an online roulette game. https://psyarxiv.com/cv3yj
- Newall, P.W.S., Weiss-Cohen, L., Singmann, H., Walasek, L., & Ludvig, E.A. (2021). No credible evidence that UK safer gambling messages reduce gambling. https://psyarxiv.com/hv6w9
- Russell, A.M.T., Hing, N., Newall, P., Greer, N., & Dittman, C. (2021). From adolescence to young adulthood: Associations between simulated and traditional gambling, and the role of parental factors. Melbourne: Victorian Responsible Gambling Foundation.
- Sharman, S., Ferreira, C.A., & Newall, P.W.S. Gambling advertising and incidental marketing exposure in soccer matchday programmes: A longitudinal study.
- Xiao, L.Y., Fraser, T.C., & Newall, P.W.S. (2021). Opening Pandora's loot box: Novel links with gambling, and player opinions on probability disclosures and pity-timers in China. https://psyarxiv.com/837dv/
- Xiao, L.Y., Henderson, L.L., & Newall, P.W.S. (2021). What are the odds? Lower compliance with Western loot box probability disclosure industry selfregulation than Chinese legal regulation.
- Xiao, L.Y., & Newall, P.W.S. (2021). Probability disclosures are not enough: Reducing loot box reward complexity as a part of ethical video game design. https://psyarxiv.com/nuksd

Zhu, J.-Q., Newall, P.W.S., Sundh, J., Chater, N., & Sanborn, A.N. (Major revise & resubmit). Clarifying the relationship between coherence and accuracy in probability judgment. *Cognition*.

Grants (Principal Investigator)

- 11/2020 \$20,007 Clean Up Gambling (Australian dollars)
- 10/2019 \$20,000 CQUniversity Commencement Grant (Australian dollars)
- 08/2019 £9,500 BA/Leverhulme Small Research Grants (CI: Leonardo Weiss-Cohen)
- 12/2018 €9,000 Think Forward Initiative Research Challenge (CI: Leonardo Weiss-Cohen)
- 10/2017 \$100 Young Scholars' Initiative travel award
- 12/2015 £5,000 Scottish Institute for Research in Economics
- 09/2013 Three year fully funded PhD studentship, ESRC/Scottish government

Grants (Co-Investigator)

- 08/2021 Rockloff, M., Browne, M., Hing, N., Russell, A.M.T., Thorne, H., Newall, P., & Luan, R. J. (2021). Skill based gambling in Australia. Gambling Research Australia. \$ 379,816 (Australian dollars).
- 01/2021 Hing, N., Rockloff, M., Browne, M., Russell, A., Lole, L., Newall, P., Greer, N., Thorne H., Dowling, N., Merkouris, S., & Stevens, M. Catalyst or circuitbreaker? A prospective cohort study to assess COVID-19's effects on gambling behaviour and harm. Victorian Responsible Gambling Foundation. \$146,638 (Australian dollars).
- 01/2020 Rockloff, M, Hing, N., Browne, M., Newall, P., Armstrong, T., & Russell, A. Behavioural trial for consistent gambling messaging under the National Consumer Protection Framework. Gambling Research Australia. \$281,034 (Australian dollars).
- 11/2019 Hing, N., King, D., Rockloff, M., Browne, M., Russell, A., Greer, N., & Newall, P. Youth gambling research. NSW Responsible Gambling Fund. PRN 19-327. \$328,492 (Australian dollars).
- 11/2019 Browne, M., Rockloff, M., Begg, S., Russell, A., Hing, N., Li, E., Rawat, V., Murray-Boyle, C., & Newall, P. The GH-6D: A multi-domain measure of harm to gamblers and CSOs that is benchmarked to health utility. Grants for Gambling Research Program. Victorian Responsible Gambling Foundation. \$178,818 (Australian dollars).
- 11/2019 Hing, N., Rockloff, M., Browne, M., Russell, A., Greer, N., Lole., L., & Newall, P. Smartphone betting on sports, esports and daily-fantasy-sports

amongst young people. NSW Responsible Gambling Fund. \$185,297 (Australian dollars).

- 10/2019 Russell, A.M.T., Hing, N, Newall, P., & Greer N. From adolescence to young adulthood: Risk factors in transitions from gaming to gambling-related harm. Victorian Responsible Gambling Foundation. \$49,929 (Australian dollars).
- 08/2019 £17,550 University of Warwick Research Development Fund (PI: Lukasz Walasek).
- 05/2019 £1,000 Warwick Psychology impact fund (PI: Lukasz Walasek).
- 02/2019 £1,300 Global Research Priorities, Behavioural Science (PI: Elliot Ludvig).
- 11/2018 £3,500 Impact award, Institute of Advanced Study, University of Warwick (PI: Lukasz Walasek).
- 11/2018 £325 University of East London internal funding (PI: Steven Sharman).
- 01/2018 £149,963 GambleAware project (PI: Fiona Dobbie).

Policy

- 03/2021 Xiao, L.Y., Henderson, L.L., & Newall, P.W.S. (2021, March 25). Written Response to the Spanish Ministry of Consumer Affairs on the future regulation of random reward mechanisms in video games (loot boxes).
- 03/2021 Newall, P., Ludvig, E., Singmann, H., Walasek, L., Weiss-Cohen, L.
 Written evidence: Submission to the DCMS Review of the Gambling Act 2005 Call for Evidence.
- 03/2021 Oral evidence given to Gambling Related Harm All Party Parliamentary Group on bank data and gambling.
- 11/2020 Walasek, L., Ludvig, E.A., Newall, P.W.S., Singmann, H. Written evidence: Submission for All Party Group on Reducing Harm Related to Gambling (Northern Ireland).
- 11/2020 Xiao, L.Y., Henderson, L.L., Nielsen, R.K.L., Grabarczyk, P., & Newall, P.W.S. Written evidence: Response to the UK Department for Digital, Culture, Media & Sport's Call for Evidence on loot boxes in video games.
- 10/2020 Oral evidence given to Gambling Related Harm All Party Parliamentary Group on children and gambling.
- 9/2020 Letter of support from Carolyn Harris MP for research on legal youth gambling
- 03/2020 06/2020 Academic advisor to the House of Lords Select Committee on the Social and Economic Impact of the Gambling Industry.

 09/2019 Newall, P.W.S., Walasek, L., Ludvig, E.A. Written evidence: Submission for House of Lords Select Committee on the Social and Economic Impact of the Gambling Industry.

Invited talks

- 04/2021 Victorian Responsible Gambling Foundation, Remote
- 03/2021 Alliance for Gambling Reform, Remote
- 12/2020 Institute of Alcohol Studies, Remote
- 10/2020 Public Health England, Remote
- 05/2020 Advisory Board for Safer Gambling, Remote
- 05/2020 Victorian Responsible Gambling Foundation, Remote
- 01/2020 Psychology colloquium, University of New South Wales, Sydney
- 07/2019 House of Lords Select Committee on the Social and Economic Impact of the Gambling Industry, London
- 05/2019 Spanish Federation of Rehabilitated Gamblers, Madrid
- 04/2019 The Gambling Commission, Birmingham
- 04/2019 Geary Institute for Public Policy, University College Dublin
- 03/2019 Psychology seminar, University of Sheffield
- 02/2019 Engineering and Social Informatics Research Group, Bournemouth
 University
- 12/2018 Psychology seminar, City University London
- 10/2018 Psychology seminar, University of Huddersfield
- 09/2018 Behavioural Insights Team, London
- 06/2018 Youth gambling forum, Goldsmiths University London
- 03/2018 Behavioural Science Centre, University of Stirling
- 10/2017 Cognitive Science Research Group, New College of the Humanities
 London
- 10/2017 Decision Research @ Warwick, University of Warwick
- 01/2017 Geary Institute for Public Policy, University College Dublin
- 09/2016 Department of Economics, University of Glasgow
- 10/2015 Laboratory for the Philosophy and Psychology of Rationality and Decision, St. Catherine's College Oxford
- 10/2015 The Cognitive Workshop, City University London
- 10/2015 London Judgment and Decision Making, University College London

National press coverage

 • 07/2021 "Research finds popular games skirt Chinese loot box disclosure laws" Gamesindustry.biz

- O7/2021 "Why Investors Can't Kick the 'Past Performance' Habit" Wall Street
 Journal
- 03/2021 "Former pro-poker player turns the tables on gambling" Sydney Morning Herald
- 02/2021 "Even low levels of gambling linked to financial hardship, study finds" The Guardian
- 02/2021 "Heavy gambling significantly increases your risk of dying regardless of your age or gender, study warns" Daily Mail
- 08/2020 "Teen lottery players risk gambling addiction" The Times
- 05/2020 Discussion of legal youth gambling. You & Yours, BBC Radio 4
- 12/2019 "Concern over gambling branding on children's pages in football programmes" The Guardian
- 08/2019 "Can you Beat the Bookies? review final proof gambling is a mug's game" The Guardian
- 08/2019 "Warning messages on betting adverts do little to deter gamblers because they just ignore them, new study finds" Daily Mail
- 08/2019 "Warning message on gambling ads does little to stop betting study" The Guardian
- 02/2019 "'Bet regret' TV ad has potential to increase self-blame, critics say" The Guardian
- O1/2019 "Bookmakers are sending gamblers into debt by advertising only their most addictive products, academics claim" Daily Mail
- 11/2018 "Listening to the gambling industry is terrible economics" The Guardian
- 10/2018 "Church of England backs ban on gambling adverts during live sporting events" Daily Telegraph
- 08/2018 "Gambling firms face probe over their World Cup TV adverts" Daily Mail
- 08/2018 "Meet the fanatics using Football Manager to beat the bookies" Wired.com
- 08/2018 "State should restrict gambling ads seen by children, industry says" The Guardian
- 08/2018 "Academics call for a ban on 'live odds' gambling ads" Daily Mail
- 10/2017 "All bets could be off" Cips.org
- 10/2017 "Working longer hours, spending more on luxuries: The dark side of Nobelwinner Richard Thaler's 'nudge theory'" Marketwatch.com
- 08/2016 "Can you tot up financial losses correctly?" Dailymail.co.uk
- 03/2016 "Are punters being taken for more than they intended?" Choice.com.au
- 06/2015 "In-game TV betting ads favour the bookies" The Times, Scotland
- 06/2015 "Win 'in-play' bet? I wouldn't gamble on it" The Metro

Media appearances

- 02/2021 "Research follows bank data in search of the true cost of gambling" Australian Broadcasting Corporation Radio National
- 08/2019 "Can you beat the bookies?" BBC3/BBC1
- 6/2019 Sky News live interview
- 12/2018 Sky News live interview
- 08/2018 "Gambling advertising" You and Yours, BBC Radio 4
- 10/2016 "Can a computer beat a human at poker?" Sky News

Conference presentations

- 08/2021 SPUDM, Amsterdam
- 04/2021Australasian Experimental Psychology Society, Brisbane
- 11/2020 Society for the Study of Addiction Conference, Remote
- 08/2019 SPUDM, Amsterdam
- 09/2019 IAREP, Dublin
- 07/2019 Current Advances in Gambling Research, London
- 06/2019 JDMx, Trento
 - 07/2018 IAREP, London
- 06/2018 Foundations of Utility and Risk, York
 - 06/2017 JDMx, Bonn
- 06/2016 Foundations of Utility and Risk, Warwick
- 04/2016 Network for Integrated Behavioural Science, Norwich
 - 09/2015 Behavioural Exchange, London
 - 08/2015 SPUDM, Budapest
- 04/2015 Network for Integrated Behavioural Science, Nottingham
 - 04/2015 International Meeting on Experimental and Behavioral Social Sciences, Toulouse
 - 09/2014 Decision Making, Bristol
- 07/2014 Foundations of Utility and Risk, Rotterdam

Posters

- 07/2015 Cognitive Science, Pasadena
- 06/2015 Summer Institute on Bounded Rationality, MPI Berlin

<u>Reviewing</u>

https://publons.com/researcher/1600786/philip-newall/peer-review/

05/2020 Editorial board member: Addiction Research & Theory

- Journals: Addiction Research & Theory, Applied Economics, Applied Psychology: An International Review, BMC Public Health, Cogent Psychology, Cognition, Communication and Sport, Current Sociology, Frontiers in Psychiatry, Frontiers in Psychology, International Gambling Studies, International Journal of Environmental Research and Public Health, International Journal of Mental Health and Addiction, Journal of Behavioral Addictions, Journal of Behavioral and Experimental Finance, Journal of Behavioral Decision Making, Journal of Behavioral Finance, Journal of Clinical Medicine, Journal of Experimental Psychology: Applied, Journal of Experimental Psychology: General, Journal of Gambling Issues, Journal of Quantitative Analysis in Sports, Lancet Public Health, PLOS One, Public Health, Risks.
- Funding bodies: Alberta Gambling Research Institute, Victorian Responsible Gambling Foundation.

Teaching experience

- Designed and delivered a 14-week MSc seminar (90 mins per-seminar)
 "Marketing Decisions" at Technical University of Munich. Received a teaching rating of "Excellent" (1.6 [1 = excellent, 5 = poor])
- Jointly delivered a 12-week MSc course (180 mins per-class)

"Consumer Behavior Research Methods" at Technical University of Munich

- Two one-off University of Warwick Behavioural and Economic Science MSc lectures
- One-off University of Huddersfield BSc lecture: "Gambling: Past, present, future"
- Four one-off 2 hour Stirling Behavioural Science MSc lectures
 - Stirling ECN111 Microeconomics, teaching assistant 10 weeks x 2 1-hour classroom sessions
 - Stirling ECN211 Intermediate Microeconomics, teaching assistant 10 weeks x 5 1hour classroom sessions

Supervision

- Supervised two Honours dissertations (CQUniversity)
- Supervised three Master's dissertations (Technical University of Munich)
- Supervised three undergraduate group dissertations (Technical University of Munich)

Tess Visintin

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Education				
Master of Clinical Psychology	2021 – ongoing			
University of South Australia, Adelaide, SA				
Doctor of Philosophy	2021			
Central Queensland University, Rockhampton, QLD				
Research area: Cognitive Psychology and Gambling				
Thesis title: "The protective influence of analytical thinking				
on altering gambling beliefs and behaviours."				
Graduate Certificate of Tertiary Education	2017			
Central Queensland University, Rockhampton, QLD				
Bachelor of Arts (Honours) Psychology	2013			
Central Queensland University, Adelaide, SA				
First Class Honours				
Research area: Cognitive Psychology				
Thesis title: "Expectation versus reality: The utility of subjective				
measures in assessing performance impairment in Australian				
volunteer fire fighters."				
Bachelor of Psychological Science	2012			
University of South Australia, Adelaide, SA				

Employment

Research Worker

Experimental Gambling Research Laboratory

2013 - ongoing

Central Queensland University

Projects include:

- Skill-based Gambling
- Emerging Gambling Technologies
- Legacy Gambling Harms
- Problem Gambling Prevalence in NSW
- Gambling and Problem Gambling from a Life Course Perspective
- Quantifying the Cost of Problem Gambling
- Mobile Electronic Gambling Machines
- Innovation to Traditional Gambling Products
- Preventing and Minimising Gambling Related-Harm
- Intelligent and Dynamic Warning Messages

Associate Lecturer/Teaching Assistant2014 - 2019School of Human, Medical and Applied Science

Central Queensland University

Research Assistant

Appleton Institute Sleep Laboratory

Central Queensland University

Projects Include:

- Should We Go Halves? The Impact of Split Work-Rest Schedule on Sleep and Cognitive Performance
- Sleep Strategy Study
- The Awake, Smoky and Hot Project (ASH)

Teaching

Role	Course	Year
Unit Coordinator	Foundations of Psychological Research	2018
Unit Coordinator	Foundations of Psychological Research	2016
Unit Coordinator	Foundations of Psychological Research	2015
Coordinator	Supported Distance Workshops	2015 – 2016
Marking Assistant	Individual Differences	2014

Registration

Provisional Psychologist

2021

2013 - 2015

Publications

Peer-Reviewed Articles

Armstrong, T., Rockloff, M., Browne, M., & Blaszczynski, A. (2020). Training gamblers to re-think

- their gambling choices: How contextual analytical thinking may be useful in promoting safer gambling. *Journal of Behavioural Addictions.*
- Armstrong, T., Rockloff, M., Browne, M., & Blaszczynski, A. (2020). Beliefs about gambling mediate the effect of cognitive style on gambling problems. *Journal of Gambling Studies, 36*, 871-886. doi:10.1007/s10899-020-09942-5
- Armstrong, T., Rockloff, M., & Browne, M. (2020). Gamble with your head and not your heart: A conceptual model for how thinking-style promotes irrational gambling beliefs. *Journal of Gambling* Studies, *36*, 183-206. doi: 10.1007/s10899-019-09927-z
- Armstrong, T., Rockloff, M., Browne, M., & Blaszczynski, A. (2019). Encouraging gamblers to think critically using generalised analytical priming is ineffective at reducing gambling biases. *Journal of Gambling Studies, 36*, 851-869. doi: 10.1007/s10899-019-09910-8
- Rockloff, M., Browne, M., Greer, N., **Armstrong, T.,** & Thorne, H. (2019). Mobile EGM Games: Evidence that simulated games encourage real-money gambling. *Journal of Gambling Studies.* doi: 10.1007/s10899-019-09869-6.
- Armstrong, T., Rockloff, M., Browne, M., & Blaszczynski, A. (2019). Development and Validation of the Protective Gambling Beliefs Scale. *International Gambling Studies*, 9(1), 36-53. doi: 10.1080/14459795.2018.1500624.
- Armstrong, T., Donaldson, P., Langham, E., Rockloff, M., & Browne, M. (2018). Exploring the effectiveness of an 'Intelligent Messages Framework' for developing warning messages to reduce gambling intensity. *Journal of Gambling Issues*, 38, 1-18.
- Armstrong, T., Rockloff, M., Browne, M., & Li, E. (2018). An exploration of how simulated gambling games may promote gambling with money. *Journal of Gambling Studies.* 34(4), 1165-1184. doi: 10.1007/s10899-018-9742-6.
- Armstrong, T., Rockloff, M., Greer, N., & Donaldson, P. (2016). Rise of the machines: A critical review on the behavioural effects of automating traditional gambling games. *Journal of Gambling Studies, 33*(3), 735-767. doi: 10.1007/s10899-016-9644-4.
- Armstrong, T. A. R., Rockloff, M. J., & Donaldson, P. (2016). Crimping the croupier: Electronic and mechanical automation of table, community and novelty games in Australia. *Journal of Gambling Issues, 33,* 103-123. doi: 10.4309/jgi.2016.33.7
- Smith, B., Browne, M., Armstrong, T. A., & Ferguson, S. (2016). The accuracy of subjective measures for assessing fatigue related decrements in multi-*stressor* environments. *Safety Science*, *86*, 238-244.
- Christoforou, T., Cvirn, M., Ferguson, S.A., Armstrong, T., & Smith, B. (2013). The effect of physical work and sleep restriction on the cognitive performance of volunteer fire-fighters during a simulated 3-day fire-ground tour. Published proceedings of the Australian Chronobiology Society The Clock Strikes Ten, September 13, 2013. Adelaide, Australia.
- Armstrong, T., Cvirn, M., Ferguson, S.A., Christoforou, T., & Smith, B. (2013). Can Australian bush fire fighters accurately self-monitor their cognitive performance during a 3-day fire-ground

campaign? Published proceedings of the Australian Chronobiology Society The Clock Strikes Ten, September 13, 2013. Adelaide, Australia.

Peer reviewed client reports

- Russell, A. M. T., Armstrong, T., Rockloff, M., Greer, N., Hing, N., & Browne, M. (2020). Exploring the changing landscape of gambling in childhood, adolescence and young adulthood. NSW
 Responsible Gambling Fund, Central Queensland University Australia.
 doi: 10.25946/5f2335f6d50d1
- Rockloff, M., Greer, N., Armstrong, T., Thorne, H., Langham, E., Browne, M., Moskovsky, N., Goodwin,
 B., & Li, E. (2017). *Mobile Pokie Apps: The Perfect Substitute or the Perfect Storm?* Victorian Gambling Foundation, Melbourne.
- Armstrong, T., Greer, N., Kinchin, I., Doran, C., Browne, M., Langham, E., & Rockloff, M. (2017). The social cost of gambling: A systematic review of impacts and a targeted review of costing studies.
 Victorian Responsible Gambling Foundation, Melbourne.
- Browne, M., Greer, N., **Armstrong, T.,** Doran, C., Kinchin, I., Langham, E., & Rockloff, M. (2017). *The social cost of gambling to Victoria*. Victorian Responsible Gambling Foundation, Melbourne.
- Rockloff, M., Donaldson, P., Browne, M., Greer, N., Moskovsky, N., **Armstrong, T**., Thorne, H., & Langham, E. (2016). *Innovation in traditional gambling products*. Gambling Research Australia.

Presentations

- Armstrong, T. (2019). Gamble with your head and not your heart. Presented at the Asia-Pacific Three Minute Thesis Semi-Finals, October, Brisbane, QLD.
- Armstrong, T. (2019). Gamble with your head and not your heart. Presented at the CQUniversity 3MT competition, September, Adelaide, SA.
- **Armstrong, T**. (2019). Gamble with your head and not your heart: How intuitive thinking contributes to gambling problems. Presented at the HMAS Research Seminar, August, Adelaide, SA.
- **Armstrong, T.,** Rockloff, M., Browne, M., & Blaszczynski, A. (2018). Development of a Protective Gambling Beliefs Scale. Presented at the National Association for Gambling Studies Australia 28th Annual Conference, Brisbane, QLD.
- Armstrong, T A., Rockloff, M., & Donaldson, P. (2018). The Australian environmental scan: An assessment of the features associated with automated and digitalised gambling products. Presented at the European Association for the Study of Gambling 12th European Conference on Gambling Studies and Policy Issues, Valetta, Malta.
- Armstrong, T A., Rockloff, M., & Donaldson, P. (2016). The Australian environmental scan: An assessment of the features associated with automated and digitalised gambling products. Presented at the National Association for Gambling Studies Australia 26th Annual Conference, Cairns, QLD.
- Armstrong, T. A. (2015). The protective influence of analytical thinking on gambling beliefs and behaviours. Presented at the CQUniversity RHD Symposium, Adelaide, SA.

Armstrong, T. A. (2013). The ability of Australian bush fire-fighters to self-monitor cognitive performance during a 3-day simulated fire-ground campaign. Presented at the Australasian Chronobiology Society 10th Annual Conference, Adelaide, SA.

Funding

- Rockloff, M, Hing, N., Browne, M., Newall, P., **Armstrong, T** and Russell, A.M. *Behavioural trial for consistent gambling messaging under the National Consumer Protection Framework*. Gambling Research Australia. 2020 (\$281,034).
- Russell, A.M.T, Rockloff, M., Greer, N., Hing, N., Browne, M., and **Armstrong, T**. *Exploring the changing landscape of gambling in adolescence*. NSW Responsible Gambling Fund. 2019-2020 (\$99,968 excl).
- Rockloff, M., Browne, M., Goodwin, B., Rose, J., Langham, E., Li, E., Thorne, H. and **Armstrong, T**. *Mobile Pokie Apps: The Perfect Substitute or the Perfect Storm?* Victorian Responsible Gambling Foundation Grant. June 2015 (\$190,000).

Awards and Scholarships

CQUniversity 3MT Finals Winner & People's Choice Awards		2019	
	Central Queensland University (\$3500)		
Studen	t Conference Scholarship	2018	
	National Association of Gambling Studies (\$500)		
	Central Queensland University		
Studen	t Presentation Award	2016	
	National Association of Gambling Studies (\$5000)		
	Central Queensland University		
	Awarded for the presentation: The Australian environmental		
	scan: An assessment of the features associated with		
	automated and digitalised gambling products.		
Student Conference Scholarship		2016	
	National Association of Gambling Studies (\$500)		
	Central Queensland University		
Studen	t Conference Scholarship	2015	
	National Association of Gambling Studies (\$500)		
	Central Queensland University		
PhD Scholarship			2015
	Platinum Scholarship (\$132,000)		
	Central Queensland University		