Response to
The Productivity Commission's
Draft Report into Gambling

for
ClubsNSW

Property of:
Harvestdata
21/133 Rowntree St
Birchgrove NSW 2041
Ph: 0411 123 455

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Harvestdata Overview

Harvestdata was founded to provide specialized research services. Our services are especially suited for issues management and agenda setting in the public arena. We abide by the guidelines set by the Australian Market & Social Research Society and the Institute of Management Consultants.

Harvestdata's services include:

- Optimising Research Design – making sure you ask the right questions
- Qualitative Research (e.g. focus groups, in-depth interviews)
- Quantitative Research (e.g. Online, Face to Face, Telephone, Mail)
- Analysis to suit the research problem (Qualitative and Quantitative)
- Desk Research (Monitoring trends in publicly available information)
- Literature reviews and issues monitoring (e.g. banking trends, alcohol)
- Able to regularly collect, collate and analyse data for reports
- Presenting data so it is meaningful to stakeholders

Gaming & Hospitality Experience

Harvestdata offers a unique blend of credentials, capabilities and gambling specific expertise. Our industry specific knowledge is drawn from working with a range of industry leaders including:

Australian Hotels Association

Aristocrat Technologies

Brisbane Turf Club

Carlton & United Breweries (Managed Hotels)

Easts Leagues Club (and associated clubs)

Gaming Technologies Association

Greyhound Racing Authority (Qld)

Interactive Gaming Council

Office of Liquor, Gaming and Racing

Panthers Group

Sheraton Mirage: Gold Coast and Port Douglas

Guest speaker at various industry forums: e.g. the G2E in Las Vegas.

Submissions for various public inquiries

In addition, we proactively contribute to knowledge in the area by publishing papers on issues related to Alcohol, Gambling, Racing, Smoking Bans, Issues and Crisis management and Commercial and Rumour management.

Core Personnel

Dr Rohan Miller (MBA, MAcc, PhD)

Rohan has over 20 years experience in market and business research and has completed a range of business and consumer studies. Rohan has completed major investigations combining economics, market research and business analysis for a range of government and private sector organisations. Dr Rohan Miller's expertise includes strategic and business planning based on empirical evidence and the implementation of research and business intelligence programs.

His areas of expertise include: banking and finance, money and emotions, gaming, advertising and promotion, problem consumption, public policy and ways to improve the performance of social and commercial organizations. Rohan is experienced in quantitative and qualitative research design, implementation and analysis.

Dr Gwyneth Howell (MBA, MBus, PhD)

Gwyneth has fifteen years experience in corporate marketing and management roles. She has held senior management roles in the services and hospitality sector and has been consulting for more than ten years. Gwyneth has successfully managed research projects for private and public sector organisations.

She has extensive experience in the development, implementation and analysis of a range of traditional and non traditional research projects. Her breadth of experience covers all campaign aspects from early development design, through creative direction, recruitment and hands-on operations, to complete account reconciliation and maintenance.

Our Professional Affiliations

American Marketing Association
Association for Consumer Research
Australian and New Zealand Communication Association
Australian Marketing Institute
Australian Market & Social Research Society
Public Relations Institute of Australia

Executive Summary

The Productivity Commission's 2009 Draft Report focuses on EGMs and totally disregards the potential impact of other gambling products. This implies EGMs are to blame for all gambling problems and blatantly ignores substantive bodies of evidence that demonstrate gamblers consume multiple forms of gambling. For example, 75% of problem gamblers in Victoria consume lottery products and there is extensive literature arguing lotteries result in gambling problems and harm.

The Commission understates literature that there are multiple paths for gambling problems and other explanatory theories towards problem gambling. In our opinion this approach over-simplifies a very complex and sophisticated issue.

The Commission provides no objective or empirical evidence problem gambling is *caused* by EGMs. We know of no instance of causality being shown between problem gambling prevalence and individual gambling products.

In 1999, The Commission found that[1] "it is still true that a majority of heavy gamblers are not problem gamblers" (using the SOGS5+ criteria). It would seem intuitive (ceteris paribus) that if that a majority of heavy gamblers (and most gamblers) are not problem gamblers, then the share of expenditure attributed to non-problem gamblers would be higher than for problem gamblers. It should be noted that the logic and evidence of this claim undermines the theory that higher expenditure is associated with higher levels of problem gambling. This finding has generally been overlooked by The Commission and by other research.

EGMs have been widely available in most states for over fifteen years or more and their consumption is characterised by high levels of repeat purchase. Repeat purchasers are typically experienced in the consumption of a product category and therefore they cannot be regarded as "vulnerable". That is, through repeat consumption they have grown aware of many of the nuances of the products they consume.

However, an EGM consumer is not a "rational economic man" and they do not have perfect knowledge: very few consumers have perfect knowledge of any product they consume.

The Commission comment that "the debate about the numbers of problem gamblers is testimony to both the imprecision of psychological screens used to identify them (Box 4.2) and the population surveys that implement these." This comment supports our opinion that much of the research relied on by The Commission is very poor quality and can only lead to erroneous policy recommendations.

To this end, The Commission utilise data from Caraniche as "evidence" despite acknowledging in 1999 that "medians would be an inappropriate basis

[1] Productivity Commission (1999) Gambling Report, Appendix P.6

for calculating the total expenditure" (p.13). This example demonstrates the need for The Commission to read, evaluate and heed the limitations of other studies, and be more rigorous in its approach.

Wherever data have been denied for reanalysis when substantive grounds exist to doubt the veracity of these data and claims based on these data; these reports and findings should be excluded from the 2009 Productivity Commission's reporting.

Many aspects of Commission's 1998 research and 1999 Report have not stood the test of time. In our opinion, three critical components render the 1999 Report unfit as the bases for the 2009 Draft report, social cost calculations and policy recommendations:

1) There is still no proven link between accessibility to EGMs and levels of problem gambling: in contrast, there is substantive evidence over time that reveals independence.

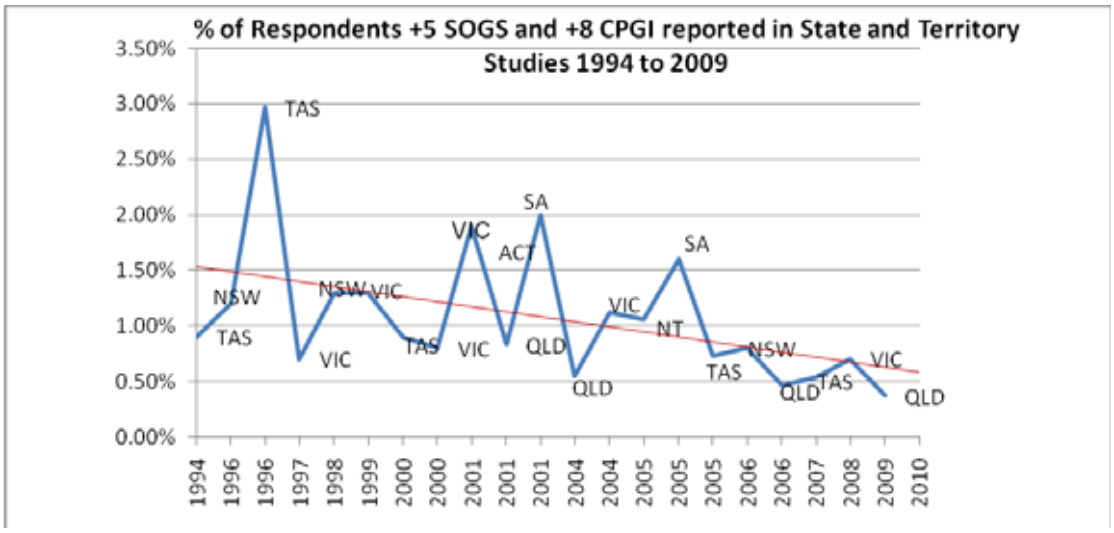
2) The baseline statistic for problem gambling in 1999 (generated by SOGS) is known to be erroneous, volatile and with poor validity.

3) The 1999 Report is ten years old and the landscape has changed considerably (see the following trends in prevalence studies). This is not adequately reflected in The Commission's 2009 Draft Report.

The Sustained Decline in Levels of Problem Gambling.

The trends from gambling prevalence studies reveal a long term decline in rates of problem gambling prevalence in Australia that are consistent with trends in other parts of the world. The downward trend suggests any further restrictions on EGM operating environment are not justified, will be a cost burden, and will merely be "unnecessary regulation".

Any modelling or evaluation of future impacts or social costs alleged to be associated with EGM gambling by The Commission must incorporate a sustained downward trend in problem gambling prevalence rates.



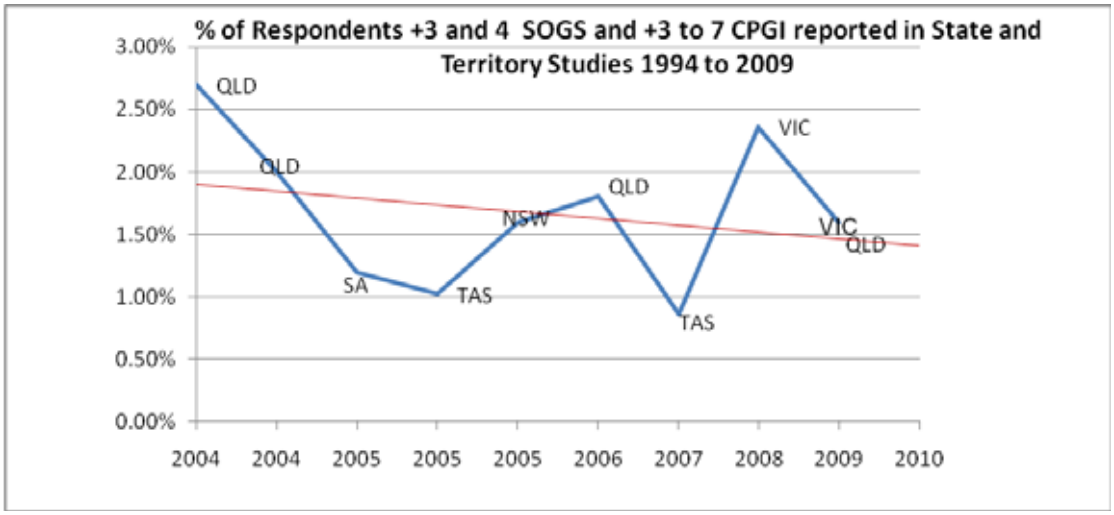
Evidence of Sustained Decline Levels of "At Risk".

The Commission decided, devoid of empirical evidence or theory, that a group of persons who may be "at risk" of becoming a problem gambler somehow suffer harm at the same levels as problem gamblers. We believe this is misusing the Canadian Problem Gambling Index classifications.

This is a profound and unjustified departure from the 1998 modelling that were based on SOGS 5+ and did not consider any "at risk" category less than SOGS 5+. The inclusion of the "at risk" group artificially inflates claimed levels of social cost. It is our opinion that The Commission fails to justify this extreme methodological change.

The data reveal a sustained downward trend for the "at risk" group (see p.7). This suggests any policy intervention based on "at risk" is not justified, will be a cost burden, and will merely be "unnecessary regulation".

There is no evidence to suggest The Commission's proposed policy changes will have any additional impact on the downward trends for alleged problem gamblers and those supposed to be "at risk".



Harm

The Commission's modelling provides insufficient insight into their calculations for social costs and harm (being less than 1 page in length). We doubt this methods section represents best practice or is sufficient for fair and balanced public policy recommendations.

It is noted the accuracy of claims of the "harm" argument put forward by The Commission is subject to the flaws implicit with self reporting, attribution bias (it is easier to blame gambling than personal shortcomings), the problems associated with self diagnosis, and other measurement effects, and thus is likely to be erroneous.

Often the level of harms claimed to be associated with gambling are considerably lower than the prevailing national incidence of harm (e.g. rates of divorce). Prima-facie, if the levels of harm are less in problem gamblers than in general society, perhaps The Commission should show this as a social benefit in their model. The Commission and other researchers make no

consideration of the harms claimed to be associated with gambling relative to overall harms in the community. This is a major oversight as many gamblers are known to be escaping problems in their community and seek solace through gambling. The burden of proof is on The Commission to show that gambling causes any harm above and beyond lifetime rates of harm in society.

Recent research from Victoria shows “problem gamblers” have significantly higher incidence of lung conditions, diabetes and other miscellaneous physical or mental health conditions. This highlights the need to critically question causal allegations between gambling and harm.

The vast majority of problem gamblers seem to suffer from other co-existing problems and this is known as comorbidity (e.g. substance abuse, mental disorders etc). Harvard University researchers have found that in over 70% of cases, comorbidity precedes any gambling related problems. This finding needs to be explicitly incorporated into The Commission’s models: at present it is ignored.

Rational Addiction Theory and the empirically justified Motivations Theory considerably undermine The Commission’s assumptions of vulnerability and harm. That is, many problem gamblers know exactly what they are doing, and choose to gamble. Any “harm” they may encounter gambling is likely to be considerably less than other forms of comorbid consumption. Moreover, as EGM use is largely characterised by repeat purchase over many years (i.e. the habit model that is empirically proven to fit gambling products), then there is very little likelihood consumers don’t know about the product attributes of EGMs (and losing money). Assertions to the contrary may be attributable to poor research design or the question being misunderstood by respondents.

False Negatives

To our knowledge, False Negatives have never been reported in any gambling prevalence studies. The Commission should present strong empirical evidence of False Negatives before they assume the existence of False Negatives in the gambling research and guess that False Negatives will somehow balance out the known existence of False Positives in all prevalence screens (including SOGS and CPGI).

Sleight of Hand and ‘Back of Envelope’

In the light of declining levels of problem gambling and the continued evolution of the gambling debate, we question the veracity of The Commission’s use of the overly simplistic “back-of-the-envelope” calculations that are reliant on disputed ten-year old assumptions.

Ten years ago The Commission was of the opinion that “problem gamblers are a heterogeneous group. Some have moderate problems only, while others have severe difficulties…” (p.1).

However, seemingly based on comments from one Canadian paper, The Commission now advocates the inclusion of lower levels of “at risk” (CPGI 3-7) at the same level as “problem gamblers” (CPGI8+). These categories are typically only combined to make the size of the problem seem larger.

The 2009 Victorian gambling report reveals significant differences between GPGI 8+ and CPGI 3-7 at the p=.05 level[2] for EGM play. The case to combine "at-risk" with "problem gambling" is theoretically and practically deficient and is contrary to the CPGI's validation process and purpose.

It must be concluded that the "back-of- the-envelope" cost benefit analyses is really a comparison of apples and oranges that we believe is not justified by evidence or theory. The effect of including "at risk" in the 2009 calculations will artificially inflate the costs of gambling by approximately 70%.

There is substantial evidence that problem gamblers have other comorbid problems and this is not reflected in The Commission's model. Indeed, there is evidence to suggest that EGMs may provide a means for a large number of "problem gamblers" to self-medicate and escape from their other problems. This suggests benefits emanating from gambling that have been overlooked by The Commission.

Before assuming third party research is of a standard suitable for use in Australian policy recommendations, there is a reasonable expectation that the limitations stated and otherwise in those studies be considered and noted. A major concern Harvestdata has with The Commission's Draft Report is The Commission does not appear to have observed and heeded the stated and/or obvious limitations in the various Australian studies.

The Commission suggest "that a ten per cent reduction in the harm related to problem gambling could yield a gain of around $450 million annually, and an accumulated gain of billions of dollars." In our opinion, this estimate is erroneous, unjustified and considerably over-inflated.

Dynamic and Broader Policy Model

Most gambling researchers and commentators including The Commission do not consider gambling trends in their models.

Real world dynamics and real world characteristics have been incorporated into a policy model (adapted from IPART) that reflects people can move back from each CPGI category without necessarily "progressing" to problem or risk status. To date, The Commission has only suggested one way movement, yet this claim is unsupported by evidence or theory.

Comorbidity should be explicitly incorporated into the policy model. There is a social imperative to do this so that comorbidity and gambling can be more appropriate addressed at policy and clinical levels.

The Commission comment "there must be a big enough problem to justify such costs and to motivate specialised measures targeted at gambling, rather than, as is usual with most other consumer services, standard consumer protection laws and resort to general mental health services".

It is our opinion that The Commission have failed to justify the costs of measures targeted specifically at gambling, and particularly EGMs.

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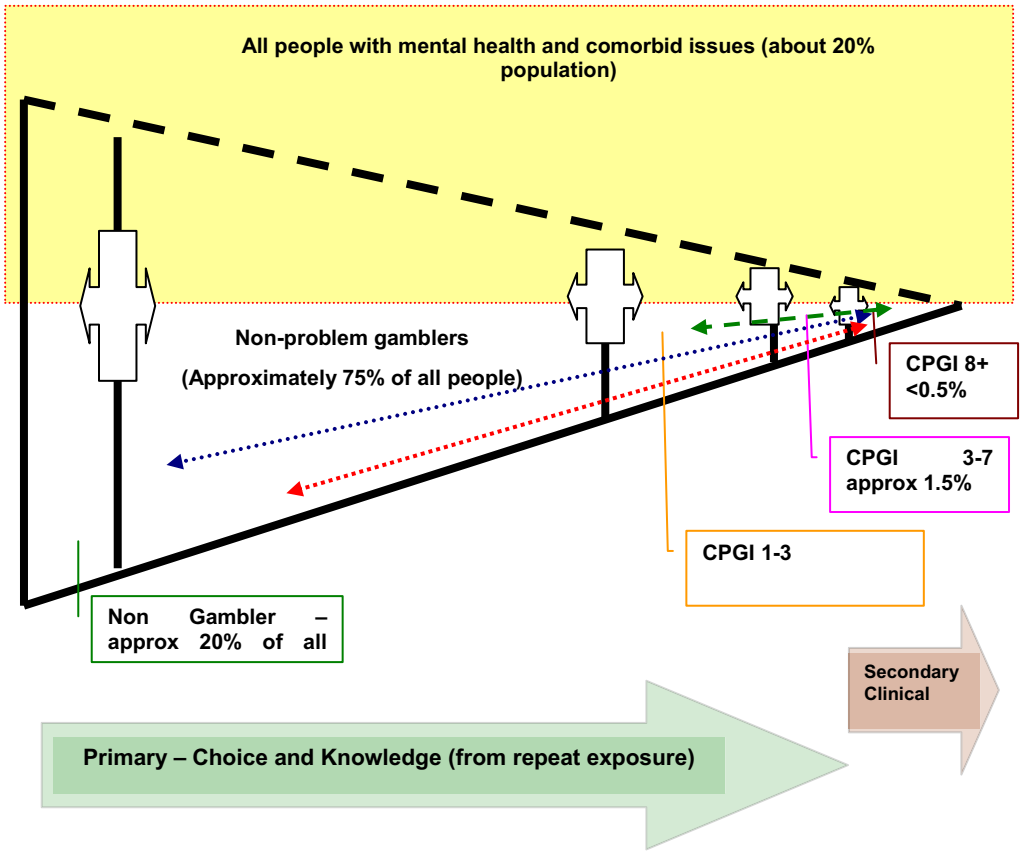
[2] "A Study of Gambling in Victoria - Problem Gambling from a Public Health Perspective", 2009, p. 61

Moreover, the ready availability of alternative products with few or no bet size or frequency limitations (e.g. lotteries and wagering, plus many other gambling products widely available through avenues such as the internet) suggest any further restrictions on poker machines will be easily side-stepped by consumers.

The Adjusted IPART (2004) Levels of Prevention Framework to Allow for Dynamics over Time



This model and image was created and is owned by Harvestdata©

In light of the established downward trend in problem gambling and recognition that problem gambling is more sophisticated and multi-dimensional than envisioned, the obvious policy conclusion for The Commission is to recommend more of the same operating conditions and the instigation of a “watching brief” to reconsider the evidence at a later time before deciding whether another in-depth review of gambling is warranted.

Table of Contents

Abbreviations

ABS	Australian Bureau of Statistics
CA	Clubs Australia
CPGI	Canadian Problem Gambling Index
DSMIV	The Diagnostic Statistical Manual
EGMs	Electronic Gaming Machines
GDP	Gross Domestic Product
GRP	Gambling Research Panel (Victoria, 2003)
GSP	Gross State Product
HDI	Household Disposable Income
HES	Household Expenditure Survey
NBD	Negative Binomial Distribution
NIH	National Institutes of Health (Canada)
NGR	Net Gaming Revenue (which is player loss)
PLC	Product Life Cycle
PC	Productivity Commission
SACES	South Australian Centre for Economic Studies
SEIFA	Socio-Economic Index for Areas (ABS)
SOGS	South Oaks Gambling Screen
VGMs	Video Gaming Machines (may also be known as EGMs)

Terms of Reference

Harvestdata has been asked to respond to the following draft findings from the Productivity Commission's Gambling Draft Report 2009.

- Finding 3.1 –
- Finding 4.1 -
- Finding 4.2 -
- Finding 4.3 -
- Finding 4.4 -
- Finding 4.5 -
- Finding 4.6 -

Harvestdata is to review various literature and theories, and appraise some of the gambling studies referred to by the Productivity Commission.

The studies reviewed may include:

- Queensland's 2007 Study
- Victoria's 2003 study by the Centre for Gambling Research
- Caraniche's 2004 study in Victoria
- SACES 2008 Tasmanian prevalence study

For background to the responses for the Draft findings above and to provide contextualization, Harvestdata may provide comments about:

a. Risk of unintended consequences (including the concept of vulnerability)?
    i. Reasons for this (e.g. social learning, experience, consumers not vulnerable etc)
    ii. Harm considerations
b. The comment that *Only to be employed in the gambling industries – stamped on their forehead*
c. Discuss the role of comorbidity in the problem gambling debate (link with data collection and secondary reports).

d. Reiterate the meaning of Causality – specifically that inference can not be obtained from the studies used by the Productivity Commission.

Key Terms and Concepts

This report references technical terms and issues. Below is a summary of the meaning of terms and or guidance from various professional organisations in the interpretation of these key definitions and terms.

Publication Bias

According to Shields[3] (2000 p771-772), "there is also similar evidence for publication bias in epidemiology and the overestimation of risks (22), such as for the case of health effects from environmental tobacco smoke (7, 23). Whereas some authors include unpublished data for meta-analysis, this is a suboptimal alternative because the data have not been subject to peer-review or public comment (24)."

It is further noted by Shields (p771) that "Publication bias can lead to the formulation and testing of hypotheses based on false impressions from the scientific literature, wasting research opportunities, time, and money. This violates an implied contract from funders".

Shields also notes "**If the publication contains preliminary data or is substantially underpowered** (e.g., the odds ratio reported based on expected frequencies is too high to be believable), if the wrong population was studied (e.g., the levels of an exposure are not known or are below that which could be detected by a biomarker), or if the biomarker was not validated (e.g., it measures the wrong thing or does not provide consistent results), **then these studies will indeed obscure reasonable conclusions**."

Reference Bias

According to Shields (2000), Reference bias occurs when authors selectively cite mostly statistically significant studies.

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[3] Shields, Peter G. (2000), "Publication Bias Is a Scientific Problem with Adverse Ethical Outcomes:The Case for a Section for Null Results" Cancer Epidemiology, Biomarkers & Prevention Vol. 9, 771–772, August 2000

In gambling research, as there are very few studies that are sufficiently "powered" to enable statistical testing, we believe many researchers misuse descriptive data (e.g. percentages) and suggest they can be generalised for particular jurisdictions.

Group Think

Groupthink[4] is a type of thought manifest by those who try to minimize conflict and reach consensus without critically testing, analyzing, and evaluating ideas. Individual creativity, uniqueness, and independent thinking are lost in the pursuit of group cohesiveness, as are the advantages of reasonable balance in choice and thought that might normally be obtained by making decisions as a group.

Ethics: The Australian Market & Social Research Society Limited

The Australian Market & Social Research Society Limited (AMSRS) is a not-for-profit professional membership body of over 2,100 market and social research professionals who are dedicated to increasing the standard and understanding of market and social research in Australia.

The AMSRS defines market research as activities such as quantitative surveys; research; media and advertising research; business-to-business and industrial research; research among minority and special groups; public opinion surveys; and desk research[5]. In the context of the AMSRS Code, the term market research also covers social research where this uses similar approaches and techniques to study issues not concerned with the marketing of goods and service. The applied social sciences equally depend on such methods of empirical research to develop and test their underlying hypotheses; and to understand, predict and provide guidance on developments within society for governmental, academic and other purposes.

[4] http://en.wikipedia.org/wiki/Groupthink

[5] http://www.mrsa.com.au/files/Code_of_Professional_Behaviour.pdf

The AMSRS Code explicitly covers many of the activities, reports and claims referenced within this report; in particular prevalence surveys and research undertaken by Caraniche (2004). It is against this code that gambling studies in may be considered.

According to the AMSRS Code:

14. Researchers must not knowingly allow the dissemination of conclusions from a market research project that are not adequately supported by the data. They must always be prepared to make available the technical information necessary to assess the validity of any published findings.

27. Where any of the findings of a research project are published by a Client the latter has a responsibility to ensure that these are not misleading. The Researcher must be consulted and agree in advance the form and content of publication, and must take action to correct any misleading statements about the research and its findings.

Ethics: Australian Psychological Society

It is noted that not all researchers are members of the AMRSA, therefore may not consider themselves obligated to their code of ethics. Some researchers and organisations who have undertaken commissioned gambling research, including Caraniche, are members of other professional organisations such as the Australian Psychology Society.

Relevant excerpts from the APA's Code of Ethics[6] are noted below. Sectio B.14.2 requires that "After research results are published or become publicly available, *psychologists* make the data on which their conclusions are based available to other competent professionals who seek to verify the substantive claims through reanalysis".

B.14.1. *Psychologists* comply with codes, statements, guidelines and other directives developed either jointly or independently by the National Health and Medical Research Council (NHMRC), the Australian Research Council, or Universities Australia regarding research with humans and animals applicable at the time *psychologists* conduct their research.

[6] Source: http://www.psychology.org.au/Assets/Files/Code_Ethics_2007.pdf (downloaded 22.11.09)

B.14.2. After research results are published or become publicly available, *psychologists* make the data on which their conclusions are based available to other competent professionals who seek to verify the substantive claims through reanalysis, provided that:
(a) the data will be used only for the purpose stated in the approved research proposal; and
(b) the identity of the participants is removed.

B.14.3. *Psychologists* accurately report the data they have gathered and the results of their research, and state clearly if any data on which the publication is based have been published previously.

Productivity Commission: Operating Principles and Policy Guidelines

The Commission follows three fundamental operating principles:

- the provision of independent analysis and advice
- the use of processes that are open and public
- to have overarching concern for the well-being of the community as a whole, rather than just the interests of any particular industry or group.

Broad policy guidelines covering all of the Commission's work are contained in its legislation. In brief, they require the Commission to:

- improve the productivity and economic performance of the economy
- reduce unnecessary regulation
- encourage the development of efficient and internationally competitive Australian industries
- facilitate adjustment to structural change
- recognise the interests of the community generally and all those likely to be affected by its proposals
- promote regional employment and development
- have regard to Australia's international commitments and the trade policies of other countries
- ensure Australian industry develops in ecologically sustainable ways.

The Commission must also have regard to any other matters notified to it in writing by the Minister.

The Commission, in all reports on matters referred to it, **must provide a variety of viewpoints and options representing alternative means of addressing the issues in the report**.

The Productivity Commission's Values

According to the Productivity Commission's website, the Productivity holds core values.

Building on the Australian Public Service Values, we at the Productivity Commission value:

- the independence of the Commission, the transparency of its processes and its communitywide perspective
- working co-operatively with the wider community
- the diversity of views of those who contribute to our work
- the intellectual integrity and commitment of Commissioners and staff.

Productivity Commission Service Standards

- We endeavour to achieve the highest standards in our public inquiries and research reports.
- We will at all times provide a prompt, professional and courteous service.
- We will provide sufficient time and information to facilitate public participation in our work.
- We will take into account privacy and confidentiality issues while completing our reports within agreed time frames.
- Where requested, we will cater for those who have difficulty with the English language, and make appropriate arrangements for the aged and those with disabilities.
- We will respond to written queries or requests for information in a timely manner. If your query is complex, we will provide an interim response to inform you of our progress.

- We will handle immediately your telephone and personal inquiries. If a complete response is not practicable at the time, you will be told when and by whom it will be provided.

Excluding Ethically Contentious Studies

Consistent with The Commission's values and policies, and reflecting best practice from professional organisations such as the **AMSRS and APA**, studies that may be unethical in any way, or may result in the inappropriate reporting of information, or where data sets have been denied for reanalysis when substantive grounds exist of their doubt, should be excluded from the Productivity Commission's research.

The Appendices contain a list of reports whereby Harvestdata have unsuccessfully requested data.

Inferential versus Descriptive Statistics

Descriptive statistics simply describe what is or what the data shows.

By comparison, inferential statistics, try to reach conclusions that extend beyond the immediate data – that is, can be used to describe a generalised population. With inferential statistics, you are trying to reach conclusions that extend beyond the immediate data alone.

Inferential statistics are used to make inferences from our data to more general conditions; descriptive statistics are used to simply describe what's going on in our data.

Significance Testing

As presented by the recent Victorian gambling study[7]

[7] *A Study of gambling in Victoria: Problem Gambling from a health perspective*, Department of Justice, Victoria, 2009. p34.

“Significance testing involves a range of statistical methods to identify what are termed ‘statistically significant’ differences and trends in data. Such methods allow a test of the probability of two groups being the same or an association occurring between two variables. For instance, this may assist to inform research questions of interest such as:
•Do problem gamblers significantly differ from non-problem gamblers on income?
•Is there a statistically significant relationship between education level and risk for problem gambling?

A statistically significant result suggests that the theoretical chance of two groups being the same (or a trend not occurring) is very low probability (with the probability indicated through a p value). For instance, a $p<.05$ indicates that the theoretical chance of two groups being the same is less than 5%. While only a theoretical basis, it provides some indication of the likelihood that a trend is ‘real’ (although is by no means a guarantee).”

The effect of imposing a requirement for significance tests on gambling studies is to raise the standard of analyses and evidence. There are often minimum numbers of respondents that are required for these analyses, and this should also improve the standard of knowledge emanating from gambling research.

1. Introduction: The Need for a Broader Discussion

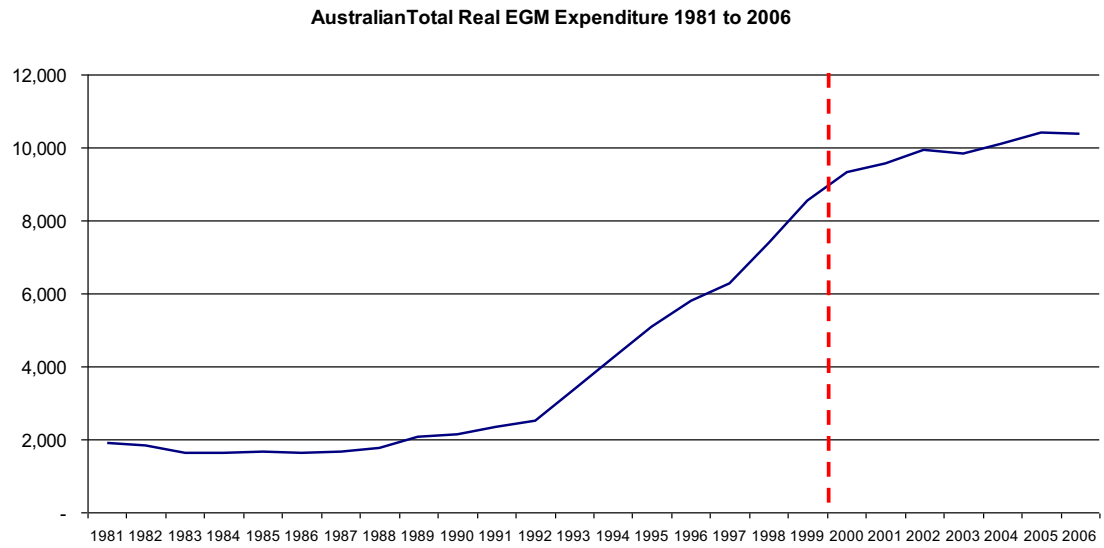
The overwhelming majority of Australians gamble. Australian consumers have a variety of long established gambling products from which to choose to purchase, or otherwise.

It is well recognised in consumer behaviour that many products have lifecycles (i.e. the product lifecycle) and their patterns of purchase can be described by the negative binomial distribution[8,9]. Initially consumers trial a new product or service, and if it suits their needs and or meets their expectations, may choose to engage in repeat consumption. The following Figure 1 shows total real Australian EGM expenditure and this clearly supports that EGMs have a product lifecycle and EGMs are in a mature phase.

Figure 1: EGM Product Lifecycle: Maturity has been reached

[8] East, Robert, 1997. Consumer Behaviour. Prentice-Hall, UK.

[9] Ehrenberg, Andrew .S.C., Goodhardt, G. and Barwick, T.P. (1990). Double jeopardy revisited. Journal of Marketing 54 (July), 82-91



Over time, rebuys of gambling products can be described as habitual[10,11] and only require low levels of cognitive involvement. This known dynamic of consumer behaviour is encapsulated in Table 1.

Table 1: Consumer Behaviour Categories

Buyclass	Degree of familiarity with the problem	Information requirements	Alternative solutions
New buy	The problem is fresh to the decision-makers	A great deal of information is required	Alternative solutions are unknown, all are considered new
Modified rebuy	The requirement is not new but is different from previous situations	More information is required but past experience is of use	Buying decision needs new solutions
Rebuy	The problem is identical to previous experiences	Little or no information is required	Alternative solutions not sought or required

Source: Table 1 (Fill) Main characteristics of the buyer classes

As illustrated in Figure 1 EGMs are in the mature stage of their lifecycle. Maturity from the consumers' perspective is characterised by high levels of repeat purchase behaviour. Implicitly, through exposure to the product over

[10] Lam, Desmond and Richard Mizerski, (2009) "An investigation into gambling purchasesusing the NBD and NBD–Dirichlet models", *Marketing Letter, March*

[11] Dick Mizerski, Rohan Miller, Katherine Mizerski & Desmond Lam *(2004)"*The Stochastic Nature of Purchasing a State's Lottery Products, *"Australasian Marketing Journal 12 (3), 2004*

time, consumers have grown well aware of the nuances and product attributes of the EGM category over time. That is, if people have gambled, then they have risked or spent money in order to obtain some benefit or utility and are also aware of the downsides of consumption.

Thus, consumers experienced in the consumption of a product category are not typically regarded as "vulnerable".

1.1 Gambling Adoption

Strangely, the most popular gambling product category in Australia is largely overlooked as a risk or product relevant to problem gambling by The Commission.

Lotteries help to legitimise gambling in Australia (and elsewhere) and are pivotal in introducing gambling into Australian homes. It is an indefensible assumption to overlook the lottery product category in socialisation, adoption and maintenance of gambling products in Australia.

Recent research from Victoria steps outside the gambling research group-think paradigm instigated by The Commission in 1999 to find that lotteries are popular among those with high CPGI scores. That is, Lotto/Powerball/Pools were played by 75.77% of problem gamblers and 72.66% of moderate risk gamblers in during the past year[12]. This finding has powerful implications on The Commission's classification of "regular gambler" and assumption of pathological progression and causality associated only with EGMs.

At present, The Commission insists on utilising what, in our opinion is an atheoretical and empirically unsupported black-box notion that problem

[12]http://www.justice.vic.gov.au/wps/wcm/connect/DOJ+Internet/resources/file/eb316447e468650/4_Profile_of_problem_gambling_risk_segments.pdf

gambling lies on a continuum. In context with the available evidence, The Commission needs to broaden their definition to include all forms of gambling in which consumers engage in any review of problem gambling.

In particular, The Commission should pay particular attention to those products on which consumers learn to gamble. If consumers are at all vulnerable to gambling appeals, it is when they are young. As they are unable to access EGMs in Clubs, it follows that lottery products provide the most exposure and best opportunity to gamble.

To a very limited extent, the impact of lotteries in gambling adoption is acknowledged by The Productivity Commission. (Box 6.3):

> "In younger age groups, gambling on card games and instant lottery tickets appears to be the most common forms of gambling. But children appear to transition from playing these games to gambling on EGMs in older adolescence — with 60 per cent playing EGMs by the time they are 18".

To the best of our knowledge, lotteries remain intrinsic to gambling adoption by the young[13]. The recent Victorian gambling study affirms lottery products are played by the vast majority of those considered problem gamblers according to CPGI scores. This suggests that failure to include lotteries and other gambling products in any adoption or gambling continuum model, when it is clear lotteries are the product most youth and children are exposed to, means The Commission is not **providing a variety of viewpoints and options representing alternative means of addressing the issues.**

1.2 Society Learns and Adapts

The arguments about EGM gambling in the present era are largely reminiscent of the rhetoric when lotteries were introduced into markets. For

[13] Miller, Rohan (2003), *Assessing the Influence of Lottery Advertising on Adolescent Perceptions of Gambling and Gambling Behavior*, unpublished Doctoral Dissertation, The University of Western Australia.

example, De Balzac[14] (p88) observes that lotteries were universally condemned;

"No-one has realised that it is the opium of poverty."

Weiss and Weiss comment that by 1800 the poorer classes in the American colony had become "lottery addicts" and lotteries were generally regarded as a consumer vice and were typically banned in the USA[15]. Wood and Griffith (1998) claim that Gamblers Anonymous reported a 17% increase in calls within the first year after the U.K, National Lottery began in 1994. Some states in the USA still prohibit lotteries and many US states waited until the 1980's before introducing lotteries due to the concern for consumer safety. In short, there is a vast body of literature that suggests lotteries lead to problem gambling that has been disregarded by the Productivity Commission.

According to The Commission, lotteries are part of ordinary life and no threat to consumers.

If the "opium of poverty" can transform into a benign consumer product, then time and societal learning, supported by the evidence of declining levels of problem gambling prevalence, suggest EGMS are also normal products and should be treated similarly with lottery products (they are, after all, forms of unskilled gaming).

Societal learning may be evidenced by the sustained downward trend found in prevalence studies over time and reflects people have been able to adapt their behaviours after a period of learning.

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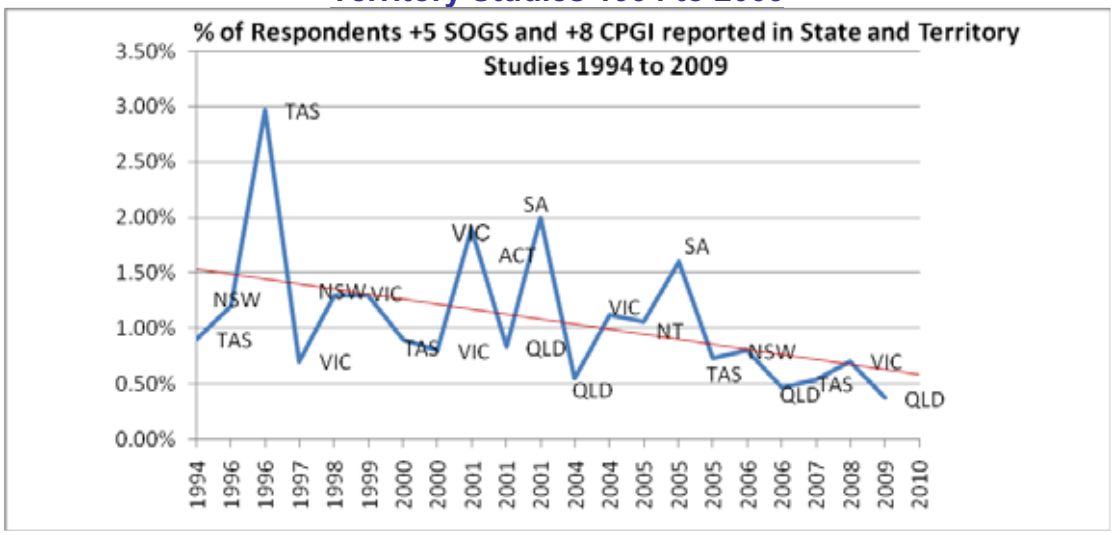
[14] DeBalzac, Honore (1970*), *The Black Sheep*, Penguin, London. Donald Adamson translation.* the text only presents the original translation date, not year it was first published.

[15] Weiss, H.B. and G.M. Weiss (1966), *The Early Lotteries of New Jersey*, Past Times Press, Trenton, N.J.

It is clear there has been significant change in many aspects of the gambling landscape since the 1999 Productivity Commission. This evolution of theory and evidence should be reflected in the present gambling inquiry and it should not be assumed the 1999 Report is suitable as the foundation for the 2009 Inquiry.

Figure 2: Percentage Change in +5 SOGS and +8 CPGI State and Territory Studies 1994 to 2009



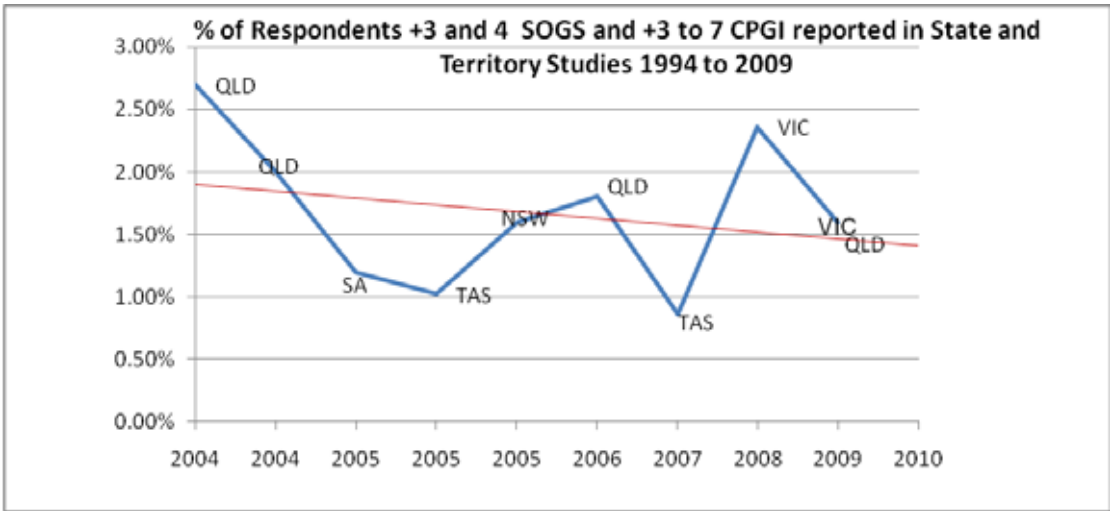
1.3 Evidence of Sustained Decline Levels of "At Risk".

The Commission has decided, without empirical evidence or theory, a group of persons who may be "at risk" of becoming a problem gambler somehow suffers harms at the same level as problem gamblers. We believe this is a major misuse of the classifications used by the Canadian Problem Gambling Index.

No objective evidence is provided how, or what harm, is manifest from EGM gambling on the "at risk" groups (see Box 3.3). This is a profound and unjustified departure from the earlier modelling that were based on SOGS 5+ and did not consider any "at risk" category less than SOGS 5+. The inclusion of the "at risk" group will artificially inflate claimed levels of social cost. It is our opinion that The Commission fails to justify this methodological change.

The sustained downward trend for the “at risk” group suggests any policy intervention based on “at risk” is unwarranted.

Figure 3: Percentage Change in +3-4 SOGS and +3-7 CPGI State and Territory Studies 2004 to 2009



1.4 Support from International Prevalence Studies

The vast majority of prevalence studies only consider gambling at one point in time. If they have attempted to model gambling behaviour, this has typically been done by asking respondents about their gambling consumption over differing periods, such as last month, last 12 months, or even lifetime. This approach is clearly inaccurate and the estimates provided are subject to various recall and survey biases.

A few international gambling studies have reviewed changes in problem gambling from two sampling snap-shots (rather than any sort of panel data). In general, these studies produce findings that dissent from the dominant assumption that more EGMS (or gambling products) will lead to higher scores on gambling screens.

Further, trends over time suggest declines in prevalence scores.

For instance, there was an increase the amount of gambling in Louisiana between 1995 and 1998, but that the prevalence of gambling related problems declined[16]. The University of Windsor's Problem Gambling Research Group found that although there was a growing availability and acceptance of gambling activities in the Windsor area between 1993 and 1999 that "the risk of developing a gambling related problem has not changed significantly"[17]. Other prevalence studies in Minnesota[18], South Dakota[19], Texas[20], and New Zealand[21] similarly report stable rates of pathological gambling over time regardless of large increases in the availability of gambling products in their jurisdictions.

The trends from Australia revealing a decline in the average scores reported from the prevalence gambling screens are not unusual. Rather, the Australian trends are consistent with evidence from other markets that have undertaken at least one-follow-up survey.

1.5 Alternative Explanations

According to its charter, The Productivity Commission, in all reports on matters referred to it, **must provide a variety of viewpoints and options representing alternative means of addressing the issues in the report**. Upon reading the Draft Report, we believe The Productivity Commission has ignored a considerable and growing body of literature that provides more

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[16] Volberg, Rachel and Lamar W. Moore (1999), Gambling and Problem Gambling in Washington State: A Six-Year Replication Study, 1992 to 1998. Olympia, WA: Washington State Lottery.

[17] Frisch, G. Ron (1999), *Community Impact of Increased Gambling Availability on Adult Gamblers - A Four Year Follow-up*, Press Release March 4, 1999, downloaded 24.9.05, http://web2.uwindsor.ca/pgrg/fyear.htm

[18] Emerson Michael O. and J. Clark Laundergan (1996), "Gambling and Problem Gambling among Adult Minnesotans: Changes 1990 to 1994," *Journal of Gambling Studies*, 12, Fall, 291-304

[19] Volberg, Rachel and Randall M. Stuefen (1994), *Gambling and Problem Gambling in South Dakota: A Follow-up Survey*, Vermillion, SD: Business Research Bureau, University of South Dakota, March.

[20] Texas Commission on Alcohol and Drug Abuse (1996), Gambling in Texas: 1995 Surveys of Adult and Adolescent Gambling Behavior. Austin.

[21] Abbott, Max W. (2001), Problem and Non-problem Gamblers in New Zealand: A Report on Phase Two of the 1999 National Prevalence Survey. Report Number Six of the New Zealand Gaming Survey. Wellington: Department of Internal Affairs.

theoretically sound and logical alternative to the "deviant paradigm" that assumes more gambling leads to more problem gambling.

Ladouceur et al. (2000) note that "the issue of prevalence has been approached in a narrow and limited way" (p2[22]). The Productivity Commission's Draft Gambling Report seems no exception to Ladouceur et al's observation and has approached the Gambling inquiry with a narrow focus.

For example, a pathways model has been developed that integrates a "complex array of biological, personality, developmental, cognitive, learning theory and ecological determinants" to interpret pathological gambling[23]. This model was published in a leading peer reviewed journal and has developed considerable support since it has been published. There has also been considerable theoretical and empirical development that "addictions" are a form of rational consumer behaviour[24,25] and that many consumers choose to be addicts. Recent empirical research also suggests that a high proportion of problem gamblers gamble in order to self-medicate or escape from other issues in their lives, and if denied this escape, will switch consumptions to other comorbid behaviours[26].

Adding support that the interpretation of gambling problems is considerably more sophisticated than assumed by The Productivity Commission, recent

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[22] Ladouceur, Robert, C. Bouchard, N. Rheamume, C. Jacques, F. Ferland, J. Leblond and M. Walker (2000), "Is the SOGS and Accurate Measure of Pathological Gambling Among Children, Adolescents and Adults," *Journal of Gambling Studies*,

[23] Blaszcznski, Alex and Lia Nower (2002), "A Pathways model of problem and pathological gambling," *Addiction*, 97, 487-499.

[24] Heyman, Gene M. (2009), *Addiction: A Disorder of Choice*, Harvard University Press

[25] Hirschman, Elizabeth C. (1992), "The Consciousness of Addiction: Toward a General Theory of Compulsive Consumption," *Journal of Consumer Research*, 19 (September), 155–79.

[26] Li, Xiuping, Steven Lu and Rohan Miller (2007), "Self -Medication versus Pure Pleasure Seeking Compulsive Consumption", Association for Consumer Research Annual Conference, Memphis, Tennessee (competitive paper accepted, extended abstract published).

research from Harvard University reveals that approximately 74% of comorbid disorders were more likely to precede problem gambling[27].

Club patrons and EGM consumers should not be stigmatised or be adversely depicted in any way through this Inquiry. The Productivity Commission must assure readers that gamblers are not undertaking any inappropriate or illegal activity and should be depicted justly and fairly at all times.

The “deviant paradigm” in gambling research is the notion that gambling behaviour is somehow driven by faulty or flawed cognition (see[28,29,30]). The use of this paradigm by The Commission may be considered offensive to Club members, employees and users of club facilities, and to the vast majority of Australians who choose to participate or owe their livelihood to legal EGM consumption.

In order to do justice to the millions of people who are members and patrons of Clubs and for The Productivity Commission to fulfil its charter, a transparent and sincere “whole of debate” approach must now be introduced in this Inquiry into Gambling.

Moreover, stigmatising people with problems (gambling and others) is likely to have an adverse effect on them seeking treatment, and particularly early interventions. To this end, trivialising the analyses for The Draft Report by labelling it “back-of-envelope” calculations and stating “Only to be employed in the gambling industries’ stamped on their forehead” suggest a possible lack of objectivity and respect to Clubs and their staff.

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[27] Kessler, R. C., Hwang, I., LaBrie, R., Petukhova, M., Sampson, N.A., Winters, K.C., and H.J. Shaffer (2008), “DSM-IV pathological gambling in the National Comorbidity Survey Replication,” *Psychological Medicine*.

[28] Zola, Irving K. (1963), "Observations of Gambling in a Lower-Class Setting", *Social Problems* 10(30), 353-361.

[29] Henslin, James M. (1967), “Craps and Magic,” *American Journal of Sociology*, 73, 316-330.

[30] Bloch, Herbert A. (1951) "The Sociology of Gambling" *The American Journal of Sociology* Vol 57, No. 3 page 215-221, November.

1.6 No Causal Effects

No published studies have shown causal relationships exist between any form of gambling, or the availability of gambling products, maximum bet levels with levels of gambling prevalence.

Only a limited number of studies have examined gambling prevalence over more than one time period in any one market. However, these studies do suggest that lower levels of problem gambling occur over time. Unfortunately difficulties in obtaining data in time for consideration or simple refusals by the States to supply these data deny us the opportunities to empirically assess these changes for significant differences. However, the trend in Australian studies is illustrated in this report.

The studies that review changes in problem gambling from two or more sampling snap-shots produce findings that generally dissent from the deviant paradigm's assumption that more EGMs (or other gambling products) lead to higher levels of problem gambling. For instance, the Queensland Government report increasing numbers of slot machines but a decrease in the prevalence of problem gambling from 0.85% to 0.55% and lower even still to 0.47% in the periods 2001, 2003-04 and 2006 respectively. Other Australian states to show a decline in levels of gambling include Victoria, NSW and Tasmania.

Outside Australia, prevalence studies show increases in levels of gambling in Louisiana between 1995 and 1998, but the prevalence of gambling related problems declined[31]. The University of Windsor's Problem Gambling Research Group found that although there was a growing availability and acceptance of gambling activities in the Windsor area between 1993 and 1999 that "the risk of developing a gambling related problem has not changed significantly"[32]. Minnesota[33], South Dakota[34], Texas[35], and New Zealand

[31] Volberg, Rachel and Moore, W. Lamar (1999), Gambling and Problem Gambling in Washington State: A Six-Year Replication Study, 1992 to 1998. Olympia, WA: Washington State Lottery.

[32] Frisch, G. Ron (1999), *Community Impact of Increased Gambling Availability on Adult Gamblers - A Four Year Follow-up*. Press Release March 4, 1999, http://web2.uwindsor.ca/pgrg/fyear.htm [downloaded 24.9.05].

(Abbott 2001) report stable rates of pathological gambling over time regardless of large increases in the availability of gambling products in their jurisdictions.

Although statistical tests are only rarely reported and causal tests have not been undertaken, the available evidence reflects no hint of causality between the availability of any individual form of gambling product and levels of gambling prevalence, or any variable reported with confidence intervals and levels of statistical confidence in gambling studies.

1.7 Triangulation of Data

The Commission suggests that it sought to triangulate data from many studies to improve the reliability of the findings.

Triangulation is often used to indicate that ***more than two methods are used in a study with a view to double (or triple) checking results***. In particular, it refers to the application and combination of *several research methodologies* in the study of the same phenomenon.

The question arises: has The Commission merely referenced multiple studies drawing on the same basic data from prevalence studies?

In our opinion, many of the studies referenced by The Commission have considerable flaws that render their findings erroneous. Studies that generally repeat the same methodological flaws can not be said to be triangulated. Citing multiple studies with the same or very similar methods should not be confused with triangulation.

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[33] Emerson Michael O. and J. Clark Laundergan (1996), "Gambling and Problem Gambling among Adult Minnesotans: Changes 1990 to 1994," *Journal of Gambling Studies*, 12 (Fall), 291-304.

[34] Volberg, Rachel and Randall M. Stuefen (1994), *Gambling and Problem Gambling in South Dakota: A Follow-up Survey*. Vermillion, SD: Business Research Bureau, University of South Dakota, March.

[35] Texas Commission on Alcohol and Drug Abuse (1996), Gambling in Texas: 1995 Surveys of Adult and Adolescent Gambling Behavior. Austin.

As outlined elsewhere in this report, most of the commissioned research in Australia has been poor quality and largely repetitive. Details of what makes some of these research poor (in terms of validity and reliability) are detailed in the Appendices of this report and addressed in context with the estimations of the percentage of overall gambling expenditure attributable to alleged problem gamblers. Few have elected to dissent from the dominant deviant paradigm.

Reminiscent to The Commission's approach "triangulating" data, Livingstone and Woolley (2007) insist that these two Victorian studies corroborate with other research. However these claims seems symptomatic with "advocacy" pieces where "they fail to cite any literature that disagrees with their perspective" (Walker 2007, p.615). Much of the research cited by Livingstone and Woolley is rooted in advocacy and suffers from the characteristic that "research on the effects of gambling involved empirical estimates based on questionable methodologies" during the 1990s (p.615).

Many researchers who have examined the efficacy of gambling studies are disappointed at the objectivity of gambling research (Grinols and Mustard 2001). Many gambling studies disclose "conceptual and methodological flaws that are sufficiently serious to call the resulting estimates into question" Volberg et al (1998, 360). By seeking to "present data in ways that are resonant and memorable to often inexpert target audience" (Chapman 2001, 1229), Livingstone and Woolley draw from two epidemiological studies with acknowledged flaws and limitations without any regard as to the real veracity of their claims.

Banks (2009) attributes the quote that "laws are like sausages: it's better not to see them being made" (p.1) to Otto von Bismarck. He also claims the Australian Prime Minister says "evidence-based policy making is at the heart of being a reformist government" (p.3).

Blaszczynski, Ladouceur and Shaffer (2004) claim that most gambling policy recommendations are not based on empirical data. Whether this is true or otherwise, it is clear that relying on self report data in gambling studies is a risky business. Moreover, the limitations of self report data must be clearly stated. More broadly though, it reveals that all sides have a place in this debate and that it is never advisable to dive into muddy waters without considering the depth of the water and what may lie beneath.

Test-retest analyses of data should be able to provide new light into this argument about methods and provide some grounds to identify alternative theory to the deviant paradigm. However, as outlined elsewhere and detailed in the Appendices, Harvestdata have been denied access to data on every occasion we requested it from researchers and commissioning authorities alike.

Given the substantive methodological, analytical and reporting issues identified in many of these studies, it would seem many of the researchers and Commissioning bodies are in breach of commonly recognised ethical standards by denying us access to the data (see the AMSRA and APA codes in this document).

To be consistent with The Commission's statements of values and policies, and embracing best practice and ethical conduct from professional organisations such as the AMSRS and APA, studies that may misreport information, or where data sets have been denied for reanalysis when substantive grounds exist of their doubt, should be excluded from the Productivity Commission's research.

The studies Harvesdata have requested and been denied, and therefore should be omitted from consideration by The Commission are:

- The 2003 Victorian Longitudinal Community Attitudes Survey on Gambling.
- The 2006 Prevalence of Gambling and Problem Gambling in NSW - a Community Survey 2006
- The Queensland Household Gambling Survey 2001
- The Queensland Household Gambling Survey 2003-04
- The Queensland Household Gambling Survey 2006-07.
- The Gambling Prevalence Study in South Australia: 2001 and 2005.
- Northern Territory Gambling Prevalence Study 2005.
- The Survey and the Nature and Extent of Gambling and Problem Gambling in the ACT in 2001.
- SACES 2007 Tasmanian Prevalence Study
- 2004 Caranche study in Victoria

1.8 Switching Consumption: Casinos, Lotteries and Wagering

According to The Commission (11.1), "EGMs have the potential for high intensity play, at a very high cost per hour, which may not be well understood by players (a broad consumer issue) – problem gamblers generally play more intensively and for longer."

It is restated there is no causal evidence to support any implication EGMs cause problem gambling. Motivations theory[36] research suggests that switching behaviour will likely to be undertaken by self-medicating problem gamblers (and even pure pleasure seekers who may switch to alternative forms of gambling) if consumers are denied the use of their preferred choice of gambling. That is, they are likely to consume other products rather than stop. This would appear a sub-optimal policy outcome.

1.8.1 Lotteries: Bets Limits and Expenditure

Lotteries are available for purchase in thousands of outlets throughout Australia. Over time, lottery products have been redeveloped to facilitate higher levels of expenditure and more frequent play.

[36] See the Li, Lu and Miller study.

According to The Commission's 1999 estimates, problem gambling losses on lottery (including scratchies) represents 24.7% of problem gambling share losses (Table P.6).

It is claimed Gary Banks commented "Whether the actual number of problem gamblers equates to 1, 2, or 3 percent of the population……..the precise number is a nicety with little bearing on the need for effective policy action" at the National Association for Gambling Studies, November 2002. It is interesting that no policy action is recommended about lotteries although they were thought to account for approximate 25 per cent of all problem gambling expenditure.

Lotteries have continued to evolve as products. The amount that can be wagered or gambled is largely unregulated on:

- **All lottery products** (indeed, in many instances it is quick and easy) – there are no restrictions on the number of tickets that can be bought and there are draws daily, and many people buy multiple tickets for multiple daily products. With reference to NSW Lotteries (http://www.nswlotteries.com/lotto/sub_price.html):
    - System 36 on Saturday costs $21.90
    - A Systems 18 for Monday and Wednesday costs $15,586.20

- **Scratchies**: there are no limits to the number of $10.00 tickets that can be purchased from thousands of retail outlets throughout Australia. Below is an example of a $10.00 scratch gamble from NSW

Thus, it is possible to lose at least the same amounts of money in the same time using lottery products as it is on EGMs.

1.8.2 Wagering: Bets Limits and Expenditure

Wagering or betting on horse, greyhound or harness racing; can be undertaken in thousands of outlets throughout Australia.

According to The Commission's 1999 estimates, problem gambling losses on wagering represented 33.1% of problem gambling share losses (Table P.6). This means wagering and lotteries exceeded the share of losses by EGMs.

The Commission allege that harm associated with gambling products is related to bet limits and rates of play. If this is true then wagering presents massive potential risks for gamblers. It is interesting that The Commission makes no real recommendation about wagering although:

- Any one can place unlimited bets for unlimited stakes (or amounts of money)
- New easy to use products are being introduced by the TABs. For example, a "$50 Fred gives you 4 selections in legs 1 and 2;

and 2 selections in legs 3, 4, 5 and 6 for a percentage of 19.53% of the full dividend"[37]

- There are various types of races (e.g. horse, harness and greyhound) on in Australia and internationally in an almost continuous flow.
- Sports betting options are adding to the availability of gambling products and the frequency of purchase items.

The readily availability of these products, plus many other gambling products widely available through avenues such as the internet, suggest any bet limits on poker machines will be easily side-stepped by consumers. This is particularly relevant as research by Li, Lu and Miller shows "self medicating" problem gamblers denied accessibility to their product of choice are promiscuous with their consumption and will switch to escape (typically to substances or other comorbid outcome). Thus, if EGM consumers are denied a maximium bet of $10.00, it suggests they will switch more consumption into other products where they can spend their money very easily and without any controls.

In context with the marketplace and availability of other products, it must be questioned whether any further regulation on the maximum bet on EGMS promotes a fair and competitive marketplace and is an unnecessary restraint on trade.

It does not seem a fair, reasoned and balanced argument for The Commission to focus on EGMs when there are many other gambling products that offer larger bet sizes and very frequent play opportunities.

1.9 False Negatives – An Unproven Assumption

It was noted in The Clubs Australia submission that The Commission has made the claim that "all survey gambling screens are likely to underestimate

[37] http://www.tab.com.au/Racing/Information/Guides/Default.aspx?State=2&postingid={413B0659-519D-46CA-ADF2-9A808C108055}.

problem gambling – however they may choose to define it – simply because people have a natural reluctance to reveal the facts about such matters"[38].

The 2009 Draft Report argues that high levels of False Negative responses exist in gambling prevalence studies (that will understate gambling prevalence rates). However, The Commission provides no evidence to support the concept of False Negatives exists in any published gambling prevalence study.

It is interesting to note that Ferris and Wynne's well documented development of CPGI considered false positives. These authors, however, made absolutely no mention of any possible influence from false negatives. This provides grounds to ***assert The Commission's discussion about False Negatives is merely a red herring and comes without support from the gambling literature***. As such, The Commission's implication that somehow false positives will be balanced out by false negatives must be removed from the Final Report or come with the severe and honest qualification that false negatives have never been reported as an issue in mainstream gambling research.

The absence of any evidence supporting the claims of False Negatives is in stark contrast to the overwhelming consensus among gambling researchers, and verified empirically that SOGS results in high levels of false positives when used as a prevalence screen[39, 40]. Further, where more than one gambling screen has been applied to a sample, then SOGS results in the highest of all gambling scores (e.g. Victorian Prevalence Study, 2004).

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[38] Comment attributed to G Banks 2002 in a paper presented to the 12th Annual Conference of the National Association of Problem Gambling Studies, Melbourne, p4 and cited in the GRP's 2003 Victorian Longitudinal Community Attitudes Survey*, p14.*

[39] Ladouceur, Robert, C. Bouchard, N. Rheamume, C. Jacques, F. Ferland, J. Leblond and M. Walker (2000), "Is the SOGS and Accurate Measure of Pathological Gambling Among Children, Adolescents and Adults," *Journal of Gambling Studies*, 16, 1-24.

[40] Abbott, Max and Rachel Volberg (2000), *Taking the Pulse on Gambling and Problem Gambling Prevalence in New Zealand: A Report on Phase One of the 1999 National Prevalence Survey.* NZ: Department of Internal Affairs.

We remind The Commission that the only apparent attempt to validate the SOGS as a prevalence screen against a clinical population of persons with gambling related problems in Australia resulted in the following comment at the SOGS 5+ level:[41]

> "significant concerns have been raised about the accuracy of the SOGS; specifically its probable over-estimation of 'cases' by a factor of 5."

One explanation for the high level of false positives is that SOGS, as a clinical screener, was designed to capture as many potential clients as possible. The original SOGS was designed to be followed by an in-depth diagnostic interview to assess the client's potential problems and here false positive reports could be identified and appropriately dealt with. In this clinical application of SOGS, false positives are less of an issue than in prevalence studies and the larger number of questions was thought would assist with the diagnosis[42]. Lesieur and Blume (1987) counsel "wherever possible, this type of cross-checking (interviews with spouses and significant others) should be used to augment the South Oaks Gambling Screen" (p.1187). There is no cross-checking available in telephone surveys.

According to Miller (2009)[43]

> "SOGS was widely regarded as invalid for use in Australia (e.g. McMillan and Wenzel 2006, p186). It was known that SOGS generated a high proportion of false positives (e.g., Ladouceur, 2000; Abbott and Volberg 2000) and the "power to detect pathological gambling (positive predictive value) does not reach 90% until scores of 9 or higher or on the SOGS" (Gambino, 2005). The only apparent empirical verification of SOGS with problem gamblers in Australia recommended a cut-off score of 10+, but acknowledged the cut-off score may be lowered to 7

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[41] Dickerson, Mark, Allcock, C., Blaszczynski, A., Nicholls, B., Williams, R. and Maddern, R. (1996), *An Examination of the Socio-economic Effects of Gambling on Individuals, Families and the Community Including Research into the Costs of Problem Gambling in New South Wales*, report prepared for the Casino Community Benefit Fund, NSW Government (p58). Bold emphasis added.

[42] This seems particularly the case as so many of SOGS questions are directed at the source of funds used to gamble.

[43] Miller, Rohan (2009), "The Risky Business of Gambling Research: A Selected Review of Research used for Policy Decisions in the Australian state of Victoria", under review, Marketing and Public Policy Conference 2010.

> and would likely capture 97% of problem gamblers (Dickerson et al, 1996). Caraniche comment[44] that "the CPGI is widely acknowledged to provide more meaningful insight into the nature and extent of problem gambling behaviour in the general population than studies that use the SOGS".

The extant research indicates SOGS, and other prevalence measures, will likely result in false-positives and over state prevalence levels when used as a general population screen. To this end, it has been reported **that Canadian research suggests that the CPGI may give rise to false positives in community samples**[45].

With reference to the Tasmanian 2008 study used as a case in this submission, false positives mean prevalence levels would be overstated. This has considerable and adverse implications to the confidence policy makers and analysts can derive from the data as **problem gambling prevalence information is obtained from only n=22.**

In the absence of any empirical evidence to suggest false negatives exist in gambling prevalence studies, The Commission should acknowledge the dominance of False Positives in this debate that they are likely to inflate levels of gambling prevalence. ***The Commission should present evidence of False Negatives before they make any implication of the existence of False Negatives in the gambling research and use this to discount the known existence of False Positives in all prevalence screens.***

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[44] Unfortunately the Caraniche Study does not have page numbers, so this reference can be located between Tables 3.11 and 3.12.

[45] The SA Centre for Economic Studies and Department of Psychology, University of Adelaide**,** *Problem Gambling and Harm: Towards a National Definition,* Published by the Office of Gaming and Racing, Victorian Government Department of Justice Melbourne Victoria Australia, November 2005, ABN:0 975119 4 1

1.10 Is The Commission's 1999 Gambling Report Still Relevant?

The sustained downward trend in gambling prevalence rates has considerable implications for The Commission's *Australian Gambling Industries* Report from 1999 in which The Commission formed the opinion that:

> "Overall, the Commission considers that there is sufficient evidence from many different sources to suggest a significant connection between greater accessibility — particularly to gaming machines — and the greater prevalence of problem gambling". (1999 Gambling Report, 8.31)

However, the evidence at this point does not support this claim.
The number of EGMs in Australia has remained fairly constant (declining only marginally) in contrast to the large and ongoing decline in problem gambling prevalence. Moreover, the Queensland experience whereby increasing numbers of EGMs are accompanied by decreasing rates of problem gambling (and the largest studies in Australia) debunks this 1999 opinion.

The Commission has used the 1999 Report to inform the 2009 Draft Report. However, insufficient attention has been paid to the deficiencies of the 1999 Report. It is these deficiencies that suggest the 1999 Report is not appropriate to guide informed public policy in 2009 and onwards.

It is outlined elsewhere that the SOGS tool is very unreliable and overstates levels of problem gambling.

Thus: three critical components render the 1999 Report unfit as the bases for the 2009 Draft report and policy recommendations:

1) There is still no proven link between accessibility to EGMs and levels of problem gambling: in contrast, there is substantive evidence over time that reveals independence.
2) The baseline statistic for problem gambling (generated by SOGS) is known to be erroneous, volatile and with poor validity.

3) The 1999 Report is ten years old and the landscape has changed considerably (see the following trends in prevalence studies). This is not adequately reflected in The Commission's 2009 Draft Report.

It must be concluded that The Commission's 1999 Report has not aged well. It is reasonable to conclude that the nature of gambling consumption has profoundly evolved in the past decade and The Commission's assumptions about problem gambling causality and EGMs have not stood the test of time. Similarly, the "empirical" estimates from which The Commission reached opinions ten years ago are inadequate (in both theory and evidence).

There are too many unaddressed variables for the theory proposed by The Commission to be realistic.

These issues have contributed to Harvestdata's opinion that the 1999 Report is inadequate for use as baselines for the "back-of-envelope" calculations in 2009.

2. Response to Draft Finding 3.1

The Productivity Commission state:

Even under conservative assumptions, a sustained 10 per cent reduction in the costs associated with problem gambling is estimated to generate benefits to society of around $450m a year in 2008-09 prices, and longer term benefits amount to several billion dollars. This implies that even harm minimisation measures with modest efficacy may produce worthwhile net benefits so long as they don't not also involve excessive costs.

2.1 Explanations are Required

In our opinion, there is considerable concern at The Commission's assumptions and justifications for "good policy". Several questions emerge that require detailed and informed responses from The Commission.

1) How can The Commission claim to "select those areas where the gains for Australian consumers and communities from changed policies are likely to be largest" without first considering the adequacy of existing government regulations across all gambling forms?

   This is a major concern as it is clear that many consumers, and problem gamblers, purchase multiple forms of gambling products and there is a sustained downward trend evident in the "problem gambling" and "at risk" categories.

2) Without assessing past policies, it is not possible to learn from the past. This suggests The Commission will create "new" knowledge. How can it do this without undertaking primary research? This question is very important as it is clear The Commission recognises many deficiencies in existing gambling studies and it is strongly argued The Commission's 1998 Research has not aged well.

3) Where is any evaluation of the impact of further restrictions on Clubs in society? It is our opinion that a large number of Clubs will be forced to close with further restrictions of gaming machines. The impact of new regulations on gaming machines on Club survival (affecting social capital, health and well being, enjoyment now and into the future etc) should be explicitly incorporated in The Commission's modelling.

4) How does The Commission intend to provide for "impartiality" in periodic reviews?

5) We request The Commission to define what "magnitude" problems need to be to justify government actions (reference 3.2).

6) Problem gambling prevalence screens are not product specific and these symptoms were described in an array of literature pre-dating the development of EGMs. What overall level of problem gambling is considered acceptable by The Commission?

7) Explain why the substantial downward trend in prevalence studies justifies new interventions? What rate of change does The Commission aspire to?

8) "Risk" of unintended consequences:
    a) What is meant by "risk"?
    b) Does Risk mean: potential harm? It is noted that "potential" differs greatly from "actual" harm.
    c) Does Risk mean: (the probability of an event) x (impact of that event)? Can The Commission please provide a formal working definition of risk?
    d) With reference to empirical evidence, what are the conversion rates over time from "risk" to problem?
    e) We can find no reference to any empirical study showing "at risk" progressing to "pathological" – please direct us to any study that substantiates this opinion.

2.2 The Need for Methods Disclosure

The Commission claims to subscribe to the core principle of "the use of processes that are open and public." The Commission's Figure 3.1 claims to "Analyse impacts and net benefits" in the Policy Model.

1) Where are the methods section and data? Where are the open and public processes supposedly implicit within The Commission's policy model?

2) The Commission is to "have overarching concern for the well-being of the community as a whole, rather than just the interests of any particular industry or group".

   Clubs in Australia have an estimated 11.8 million members (from the national population of approximately 22 million people: suggesting 1:2 Australians are a member of a club). Clubs in Australia employ approximately 86,000 people. EGM gambling underpins the Club movement in Australia.

   a) Where in The Commission's Draft Report is FULL consideration of the social capital and associated benefits (health, happiness, social interaction, music, sports facilities, food and beverages etc) of the entire Club movement?

   b) Where in The Commission's Draft Report is ANY consideration of the social capital and associated benefits (health, happiness, social interaction, music, sports facilities, food and beverages etc) of the entire Club movement?

3) The Commission is supposed to: promote regional employment and development
   a) Unemployment is trending upwards. Where will Club employees go for work when their Club is either shut-down or becomes a strictly voluntary facility?

b) How can those employees who want to and choose to work in the Club industry and are referred by The Commission as:

"'Only to be employed in the gambling industries' stamped on their forehead" going to manage if Clubs disappear?

i) Regional employment is declining: where will those employed in Clubs and in associated support industry get their replacement jobs in this cycle and sector?

ii) Does The Commission realise that Clubs employ a variety of staff (cleaners, bar staff, waiting staff, cooks, etc)? Are these people included in the comment 'Only to be employed in the gambling industries' stamped on their forehead' as their "portable employability" may be less than many other groups in society?

iii) Does The Commission's modelling incorporate the "harm" and unhappiness (& etc) associated with people who lose their career in Clubs?

c) How would regional employment and development receive any benefit from increased regional unemployment if Clubs were to close?

2.3 *Licking* the 'back-of-the-envelope' calculations"

In our view, it is totally inappropriate for The Commission to argue for policy changes affecting the Clubs industry with the overly simplistic rationale presented in Box 3.3 – which is less than one-page long.

It is our opinion that to call this section 'back-of-the-envelope' is flippant.

a) This approach to economic modelling a large and important sector of the Australian economy is inconsistent with The Commission's core values and the nation's expectations.

b) Ten years is a long time in policy, particularly as it is apparent that the claimed level of problem gambling prevalence has moved beneath The Commission's expectations. More explanation is

required why the downward trend in problem gambling prevalence and other changes (e.g. in income levels and household expenditures) have not been fully researched and considered by The Commission.

In 1999, The Commission provided detail into the methods used to model Measuring Costs in Section J. Although The Commission attempts to allege costs associated with gambling in 2009, no detail is entered into.

There are some substantial and unjustified differences between the 1999 and 2009 approaches. **The most profound of these is the inclusion of the "at risk" category at the same level of Costs as problem gamblers**. This should be explained and justified in detail.

2.4 Doubts about The Commission's Growth Claims

The Commission make the claim that (Box 3.3) "Using the results from the Commission's 1999 report as the base for social costs, rising inflation and real household income per capita will have pushed these social costs up by around **70 per cent in nominal terms over the decade**".

It is known that: Australia experienced significant real income growth during the past decade. ***Between 1997-98 and 2007-08, real net national disposable income per person grew by 2.8% a year on average, appreciably faster than during the preceding 20-year period***. **In the 10 years to 2007-08, GDP per person grew by 2.2% on average**.

(Source:1383.0.55.001 - Measures of Australia's Progress: Summary Indicators, 2009)

Given the indicators that measure Australia's progress are reasonably accurate, there is a massive "perceptual" gap between The Commission's claims for growth at 70 per cent and what is published by the Australian Bureau of Statistics.

More disclosure is needed to justify:

1. The inclusion of the “at risk” group at all
2. The inclusion of the “at risk” group at the same rate as “problem gamblers”
3. Why nominal income is the best and most appropriate indicator of social costs when broader based measures “real” would seem better indicators.

There is a clear onus for The Commission to review and consider this claim, and to provide clearly referenced data in their report to support their claim that the social costs have increased by 70 per cent. It is a reasonable expectation that detailed explanations should have been tabled in the first instance. All cost estimates should be made in real per capita terms to accurately reflect any growth in the population and changes in the cost of living over time (rather than just income).

2.5 Inaccurate Data

The Commission acknowledges that “**the debate about the numbers of problem gamblers is testimony to both the imprecision of psychological screens used to identify them (box 4.2) and the population surveys that implement these**.”

It logically follows that it is just not possible to make accurate assessments of social harms from these data, especially as the problems are evidently declining over time and are likely to be changing in composition (becoming less severe over time, on average).

2.6 The Straw man Effect: The Inclusion of"At Risk" in Cost Models

*A **straw man** is a fallacy in which an irrelevant topic is presented in order to divert attention from the original issue. The basic idea is to "win" an argument by leading attention away from the argument and to another topic*[46].

The most dominant aspect of the problem gambling debate is the evidence that illustrated that problem and at-risk levels of gambling are steadily declining over time. This implies the gambling debate is diminishing in relevance for policy makers and many social commentators.

By adding "at risk" to "problem gambling", in effect, The Commission are lowering the test of possible problem gambler to the approximate SOGS 3+. This is totally out of step with The Commission's 1999 approach and to the best of our knowledge we believe this is totally outside accepted practice in prevalence studies anywhere in the world.

In our opinion The Commission provides insufficient justification for this massive shift in definition: merely citing ONE study in justification for a decree that the determination for gambling transcends the CPGI 8+ criteria to the lower CPGI 3+ level. We recommend The Commission re-examine the development, intent and integrity of the CPGI.

The Commission should be reminded that one reason for the CPGI's world wide acceptance (in preference to other measures of problem gambling measures) is that the CPGI followed a structured and quite rigorous development process with the stated objective to be a valid and reliable general population measure to assess levels of problem gambling. If The Commission wants more assurance of problem gambling, particularly their issue that "CPGI 8+ is not the only indicator of problem gambling"[47] then they

[46] http://en.wikipedia.org/wiki/Straw_man

[47] Draft Report 4.23

should review some of the “soft indicators” specified by Ferris and Wynne 2001.

Tables 7 and 9 from Ferris and Wynne (2001) substantiate the reliability of the CPGI against two other popular scales that determine problem gambling.

Table 7 Reliability of CPGI, DSMIV and SOGS Measures

Measure	Number of items in measure	Alpha
CPGI	9	0.84
DSM-IV	10	0.76
SOGS	20	0.81

The second method for examining reliability is to re-test the same people on the same measure. For this validation study, we re-surveyed 417 of the original 3,120 for this purpose. Table 9 (below) shows the Pearson Product-Moment correlation coefficient for the three measures included in the survey. The DSM-IV measure has the highest reliability across time, with a correlation coefficient of 0.91. The CPGI follows with a test-re-test reliability of 0.78, and then th SOGS at 0.75.

Table 9 Test-Retest Reliability of CPGI, DSMIV and SOGS Measures and CPGI Items

Measure or Item	Correlation*
CPGI	0.78
DSM-IV	0.91
SOGS	0.75

*All correlations significant at the 0.01 level (2-tailed)

We note that by definition, Ferris and Wynne (2001) intended for there to be a substantial difference between those “at risk” and those considered “problem gamblers” identified in the CPGI.

Moderate risk gambling: Score between 3 and 7.5 on the CPGI
Respondents in this group will have responded "never" to most of the indicators of behavioral problems, but will have one or more "most of the time" or "always" responses. Gamblers may be at risk if they are heavily involved in gambling and if they respond positively to three or four of the correlates of problem gambling. This group may or may not have experienced adverse consequences from gambling.

Problem gambling: Score between 8 and 27 on the CPGI
Respondents in this group are those who have experienced adverse consequences from their gambling, and may have lost control of their behavior. Involvement in gambling can be at any level, but is likely to be heavy. This group is more likely to endorse the cognitive distortion items. The correlates may be useful here in profiling capacity, as we would anticipate that this group would respond positively to more of the correlates than members of other groups, on average.

As outlined later, in their review of the CPGI, McCready and Adlaf (2006)[48] undertook research on the theory of "at risk". To this end, they learned there is:

> "is less confidence in the soundness of the labels, classifications, and cut-points which, at worst, are considered unexplained and arbitrary."
>
> "One investigator suggests that low risk gamblers endorse the low threshold items and wonders if such people even have a problem".
>
> "To increase statistical power, "moderate risk gamblers" are often added to "problem gamblers". One investigator added "low risk" gamblers to the "problem gambler" group."
>
> "Respondents suggested that more research on the sub-types is needed, and that a guide to the analysis of sub-types would be a useful tool in an updated CPGI user manual."
>
> "Other suggestions include: adding items, adding theory-based items, adding items specifically for "low risk" and "moderate risk" categories, and weighting items."
>
> "Respondents call for more research, particularly efforts to study the labels, definitions, classifications, and cut-points for sub-types. In addition, it was suggested that the existing data sets be pooled and studied, and that longitudinal studies be undertaken."

2.7 Comorbidity" – A Profound Omission

The 2009 Commission seems to ignore accounting for the high number of problem gamblers who would seek treatment and have high social costs regardless of their gambling consumption because they suffer from other problems. This omission is in contrast to the position taken by The

[48] McCready, John and Edward Adlaf, *Performance Enhancement of the Canadian Problem Gambling Index (CGPI): Report and Recommendations*, Health Horizons Consulting for Canadian Centre on Substance Abuse, 2006, p.8

Commission in 1999 under the heading of the Causality Assumption, although we believe evidence now suggests the vast majority of gamblers have other problems:

> "In some situations, it may be inappropriate to say that gambling is the *cause* of the problems observed, though it may contribute to their severity" (1999, s9.8) and that …" Consequently, in revising the draft report, the Commission has made an adjustment for 'causality' in its estimates of the personal and family impacts of problem gambling, by applying a 20 per cent discount to the costs relating to adverse consequences in this broad category

A substantial body of literature suggests that the vast majority of problem gamblers have other "correlates" or mental health disorders[49] and that frequently these disorders predate any gambling issue[50].

This situation is well known and should be explicitly accounted for by The 2009 Commission. Mental health disorders are far common in our societies and seem to be more than 20 times higher than gambling prevalence estimates. In Australia, about 18% of respondents to the Australian Mental Health Survey met the DSMIV criteria for a mental disorder in the last 12 months[51]. Australia's National Survey of Mental Health Survey, which did not investigate problem gambling, estimated that about one in four persons with an anxiety, affective or substance use disorder also had at least one other mental health disorder[52]. A recent report shows that one in every 10 GP appointments involve the management of a mental health condition (anxiety and sleep disturbance being the leading conditions), and that one in five

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[49] Lesieur, Henry R. and Sheila B. Blume (1987), "The South Oaks Gambling Screen (SOGS): A New Instrument for the Identification of Pathological Gamblers", *Am J Psychiatry*, 144:9, September, developed the SOGS for use in USA psychiatric institution and they describe comorbidity and gambling on p1184.

[50] Kessler, R. C., Hwang, I., LaBrie, R., Petukhova, M., Sampson, N.A., Winters, K.C., and H.J. Shaffer (2008), "DSM-IV pathological gambling in the National Comorbidity Survey Replication," *Psychological Medicine*,

[51] Teeson, Maree and Heather Proudfoot (2003), *Comorbid Mental Disorders and Substance Abuse Disorders: Epidemiology, Prevention and Treatment*. National Drug and Alcohol Research Centre, Australia.

[52] Australian Government (2005), *National Comorbidity Project*. Department of Health and Ageing, http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pubhlth-strateg-comorbidity-index.htm (downloaded 4 September 2005).

Australians will experience mental health problem at some point in their lives[53].

The gambling literature has established significant correlations between problem gamblers and tobacco use, getting drunk, illegal drug use and arrests for drugs[54]. Studies reports drug users have a lifetime prevalence rate of problem gambling approximating 22%[55]; people with gambling related problems have significantly higher rates of alcohol and drug abuse[56]; and that research into chemically dependant populations has revealed between 20% and 30% have gambling problems, and find dual-problem individuals tend to be younger than exclusively problem gamblers or substance abusers[57]. It has also been observed that depression is a major problem for pathological gamblers and reports indicate that between 24 and 40% of pathological gamblers have **previously** visited mental health professionals prior to their gambling[58].

According to the GRP[59] (p12)
"Problem gamblers are most likely to have the following characteristics:
…(including)…
• Live with others who could be affected on a daily basis;

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[53] McLean, Tara "10m GP visits for Mental Illness", *Herald Sun* Aug 6 2008, citing claims by the Australian Institute of Health and Welfare

[54] Lesieur, Henry, John Cross, Michael Frank, Michael Welch, Carolyn M. White, Garry Rubenstein, Karen Moseley and Marie Mark (1991), "Gambling and Pathological Gambling Among University Students," *Addictive Behaviors, 16,* 517-527.

[55] Cunningham-Williams, Renee. M., Linda B. Cottler, Wilson M. Compton, and Edward L. Spitznagel and Arbi Ben-Abdallah (2000), "Problem Gambling and Comorbid Psychiatic and Substance Use Disorders Among Drug Users Recruited from Drug Treatment and Community Settings," *Journal of Gambling Studies*, 16, 347-376

[56] Frisch, G. Ron (1999), *Community Impact of Increased Gambling Availability on Adult Gamblers - A Four Year Follow-up*. Press Release March 4, 1999, http://web2.uwindsor.ca/pgrg/fyear.htm [downloaded 24.9.05].

[57] Feigelman, William, Lynn S. Wallisch and Henri R. Lesieur (1998), "Problem gamblers, problem substance users, and dual problem individuals: an epidemiological study," *American Journal of Public Health*, 88, 467-470.

[58] Blaszcznski, Alex, A.C. Wilson and Anna Frankova (1990), "Boredom Proneness in Pathological Gambling," *Psychological Reports,* 67, 35-42.

[59] Gambling Research Panel (2004), 2003 Victorian Longitudinal Community Attitudes Survey, p12.

• Have a family history of gambling;

• Consume alcohol and drugs;

• Depressed."

The following table (GRP's Table 78, p115) from the 2003 Victorian Longitudinal Community Attitudes Survey provides a little more detail to some of the claims.

Table 78: Correlates of problem gambling: problem gamblers by age and gender

Statements	Male %(n)	Female %(n)	18–24 %(n)	25–34 %(n)	35–49 %(n)	50–64 %(n)	65+ %(n)
In the last 12 months, have you gambled while under the influence of alcohol or legal or illegal drugs?	53.7 (22)	29.6 (8)	50.0 (2)	58.3 (7)	47.8 (11)	32.0 (8)	40.0 (2)
In the last 12 months, have you been under doctor's care because of physical or emotional problems brought on by stress?	21.4 (9)	34.6 (9)	0.0 (0)	16.7 (2)	26.1 (6)	40.0 (10)	20.0 (1)
In the last 12 months, have you felt seriously depressed?	59.5 (25)	57.7 (15)	75.0 (3)	83.3 (10)	47.8 (11)	60.0 (15)	25.0 (1)
Have you seriously thought about or attempted suicide as a result of your gambling?	9.8 (4)	14.8 (4)	0.0 (0)	8.3 (1)	4.3 (1)	24.0 (6)	0.0 (0)
In the last 12 months, have you wanted help for problems related to your gambling?	51.2 (21)	57.7 (15)	25.0 (1)	66.7 (8)	65.2 (15)	40.0 (10)	50.0 (2)
Have you sought assistance from any source for other problems? (collapsed multiple responses)	15.0 (6)	38.5 (10)	25.0 (1)	33.3 (4)	19.0 (4)	20.0 (5)	25.0 (1)
Has anyone in your immediate family ever had a gambling problem?	41.5 (17)	30.8 (8)	50.0 (2)	50.0 (2)	50.0 (11)	28.0 (7)	0.0 (0)
In the last 12 months, if something painful happened in your life, did you have the urge to gamble?	33.3 (14)	57.7 (15)	25.0 (1)	50.0 (6)	47.8 (11)	44.0 (11)	0.0 (0)

Source: QH1, QH17, QQ6-QQ04. Problem gamblers. Weighted n = 68. Firm conclusions cannot be drawn from this table because of small sample sizes.

Although using a different approach, the Victorian 2009 study similarly showed problem gamblers had a range of other issues to deal with in life[60]:

Compared to non-problem gamblers problem gamblers were significantly more likely to report a range of life events in the past year including:

- report the death of someone close to them (OR=3.76, p<.01)
- report a divorce (OR=4.68, p<.01)
- report legal difficulties (OR=3.20, p<.01)
- report a major injury or illness to either themself or someone they are close to (OR=3.16, p<.001)
- have had troubles with their work, boss or superiors (OR=2.80, p<.001)
- have experienced a major change to their financial situation (OR=6.64, p<.001)
- have had increase in the arguments with someone they are close to (OR=10.15, p<.001)

60

http://www.justice.vic.gov.au/wps/wcm/connect/DOJ+Internet/resources/file/eb316147e4685d0/1_Executive_summary_and_intro.pdf

With such high levels of mental health problems, and an ever growing body of evidence that suggests comorbid and mental health issues are strong predictors of gambling disorders rather than outcomes of gambling disorders, then The Commission's failure to account or control for mental health issues in gambling prevalence research must likely lead to erroneous cost-benefit conclusions. Elsewhere in this report further details are provided suggesting problem gamblers face significantly more physical health problems than non-problem gambling, and it can not be reasonably construed that these problems have any directional or causal relationship from exposure to EGMs.

Indeed, new empirical evidence is emerging that comorbid or mental health sufferers, if denied access to gaming, will likely substitute gaming consumption for other consumption activities, some of which manifest in physical harm to the person (e.g. illegal drugs, alcohol abuse) or other social cost (e.g. relationship or crime issues)[61]. Thus, it may even be the situation that "problem gambling" presents a net benefit in delaying the onset of other disorders (with arguably much higher costs) and providing avenues for interventions. It may also be the case that gambling provides those with problems an opportunity to "escape" and therefore is a benefit that should be included in The Commission's models.

The Commission's 2009 assessment of costs fails to account for comorbidity. This is a material oversight in any cost-benefit analyses of gambling and will lead to miss-specified models of costs.

By not explicitly accounting for comorbidity in 2009, The Commission has missed a widely recognised, major and growing dimension in the gambling debate.

[61] Xiuping Li, Steven Lu and Rohan Miller (2007), "Self -Medication versus Pure Pleasure Seeking Compulsive Consumption", Association for Consumer Research Annual Conference, Memphis, Tennessee

2.8 Rational Addiction

A substantial and growing body of literature suggests that pathological consumption may be a rational act on behalf of consumers undertaken for positive benefit.

According to leading consumer research Elizabeth Hirschman, consumers may rationally engage in what is phenomenologically experienced as an effective treatment for unhappiness[62]. Jacobs[63], and Blaszczynski and McConaghy[64], similarly suggest that gambling can be used as a means to dissociate or escape states of chronic depression, and therefore is rational consumer behaviour. This argument is supported by the empirically based motivation theory that a large number of gamblers seek to gamble to escape from other issues or problems[65]. In this study, Li, Lu and Miller use a large dataset (n>600) of clinically defined problem gamblers to show the majority of consumers with problems associated with gambling are motivated by the desire to self-medicate (typically to move from a position of negative emotion related to some other issue or problem in their lives).

This research provides new insights into the potential cost-benefit analysis of gambling. This stream of research that highlights previously considered may be capturing gambling consumption that is beneficial.

According to analyses in a working paper by Miller and Woodland[66], the best predictor of clinical visits for pathological gambling is comorbidity. The egg and chicken debate about problem gambling and comorbidity remains a topic

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[62] Hirschman, Elizabeth (1992), "The Consciousness of Addiction: Toward a General Theory of Compulsive Consumption", *Journal of Consumer Research*, Vol.19, Sept.

[63] Jacobs, Durand F. (1986), "A General Theory of Addictions: A New Theoretical Model", *Journal of Gambling Behavior*, 2, 15-31.

[64] Blaszczynski, Alex and N. McConaghy (1989), "Anxiety and/or Depression in the Pathogenesis of Addictive Gambling", *International Journal of the Addictions*, 24, 337-350.

[65] Xiuping Li, Steven Lu and Rohan Miller (2007), "Self -Medication versus Pure Pleasure Seeking Compulsive Consumption", Association for Consumer Research Annual Conference, Memphis, Tennessee

[66] Rohan Miller and Alan Woodland (2008), Slot Machines and the Evolution of Problem Gambling: An Empirical Investigation of Clinically Defined Pathological Consumption Associated with Slot Machines, working paper, The University of Sydney

for debate, although it has been recently suggested by some Harvard researchers that approximately 74% of disorders were more likely to precede problem gambling[67].

Additional support for alternative approaches to gambling adoption (in contrast to the pathological progression model and the assumption that more EGMs cause more problem gambling) are drawn from Blaszcynski and Nower's (2002, p. 487) conceptual pathways model that integrates a "complex array of biological, personality, developmental, cognitive, learning theory and ecological determinants" to interpret pathological gambling. DeSarbo and Edwards[68] (1996) also present evidence of two clusters of compulsive buyers in their research, suggesting the adoption of negative consumption behaviours such as gambling is more sophisticated than a pathological progression or "at risk" model.

The Rational Addiction model and the empirically developed Motivations Theory considerably undermine The Commission's assumptions of vulnerability and harm. That is, many problem gamblers know exactly what they are doing, and choose to gamble. Any "harm" they may encounter gambling is likely to be considerably less than other forms of comorbid consumption.

2.9 Validating the Concept of "Harm"

According to The Commission[69], "there is a broad consensus that problem gambling involves significant harm to gamblers, precisely defining, measuring and interpreting it poses substantial challenges".

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[67] Kessler, R. C., Hwang, I., LaBrie, R., Petukhova, M., Sampson, N.A., Winters, K.C., and H.J. Shaffer (2008), "DSM-IV pathological gambling in the National Comorbidity Survey Replication," *Psychological Medicine*,

[68] DeSarbo, Wayne S. and Elizabeth A. Edwards (1996), "Typologies of Compulsive Buying Behavior: A Constrained Clusterwise Regression Approach," *Journal of Consumer Psychology*, 5, 231-262.

[69] Page 4.5

It is our view that it is impossible to understand the nature of the alleged harm and to model these costs without a solid definition and supporting data.

Consider some analyses of The Commissions 1999 attempts to define gambling related problems using SOGS:

1. Only n=65 respondents to The Commission's 1998 survey reported **chasing their losses** (or approximately 0.61% of the 10,609 sample). This suggests that policies aimed at limiting time and money spent on gambling (and all sorts of gambling, not merely EGMs) may not be warranted as this may not be a major problem.
2. Only n=141 respondents to The Commission's 1998 survey reported **they had a problem with their gambling** (or approximately 1.3% of the 10,609 sample). However, it is very difficult to understand how reporting a problem with gambling (and it was not limited to EGMs) will result in harm and defined levels of costs.
3. A cross-tabulation of The Commission's 1998 data for the above two variable shows that only n=31 (or approximately 0.29% of the 10,609 sample) respondents both **chase their losses** and **think they have a problem with their** gambling. This provides a reality check in the assumed relationship between chasing or the need to limit money, and self-perceptions of gambling problems.

These analyses reveal:

A. Very few people are likely to incur any real "harm" (i.e. low number of positive scores to SOGS questions) on such a supposedly important constructs in the definitions, and there is no bases we are aware of to quantify any harm that may emanate from these few people.

B. The Australian definition of problem gambling is based on some of the lower scoring items in SOGS with a very low incidence where chasing and problems occur.

As discussed elsewhere in this report, with numbers of respondents this low (as a percentage of the sample), then it is unclear whether the problem exists at all, let enough in sufficient numbers to justify massive policy changes.

2.10 False Associations: The Nexus between Harm and Gambling?

The recent Victorian gambling report (2009) produced some interesting findings about the profile of "problem gamblers"[70]:

> "Findings also showed that, compared to non-problem gamblers, problem gamblers reported:
> •• a slightly higher rate of diabetes (although this was only tending towards significance) (OR=1.92, p=0.07)
> •• a significantly higher rate of lung conditions including asthma (OR=2.40, p<.01)
> •• a significantly higher rate of depression (OR=11.78, p<.001)
> •• a significantly higher rate of anxiety disorders (OR=10.82, p<.001)
> •• a significantly higher rate of obesity (OR=3.21, p<.001)
> •• a significantly higher rate of other miscellaneous physical or mental health conditions (OR=2.55, p<.01)"

These findings reveal significant relationships between diabetes, lung conditions and obesity (etc) and EGM play. However, it is exceptionally unlikely that gambling causes diabetes or lung conditions.

This highlights the issue that it often is possible to find false relationships between variables, and misinterpret causality. The motivations theory of Li, Lu and Miller (2007), plus the rational additions theory also discussed in this report, provide insight that "problem gamblers" may consume this product category to "escape" and that they know exactly what they are doing.

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[70] *A Study of gambling in Victoria: Problem Gambling from a health perspective*, Department of Justice, Victoria, 2009. p17.

However, the “deviant paradigm” typically looks for and assumes gambling in someway can contribute or does contribute to the harms. In our opinion, this finding should provide The Commission with considerable food for thought about a nexus between allegations of harm and gambling consumption.

2.11 A Review of Harm: Impacts on Significant Others

The gambling studies undertaken by state and territory authorities since the Productivity Commission in 1999 were reviewed within tight time and resource constraints to investigate the possible effect that individuals with gambling related problems may have on their “significant others” (e.g. family, friends).

This review was undertaken based on the assumptions and data used to estimate the prevalence of gamblers who report SOGS 5+ or CPGI 8+ and the effect of their activities on significant others.

In general, the evidence that gambling adversely impacts or harms “significant others” is extremely limited and unreliable. It is our view that these data are insufficient for the policy recommendations under consideration with The Commission. ***Specifically,*** the accuracy of claims of “harm” is subject to the flaws of self reporting, attribution bias (it is easier to blame gambling than personal shortcomings), the problems associated with self diagnosis, and other measurement effects, and thus is likely to be erroneous. ***This issue must be explicitly accounted for in any modelling and the burden of proof is on The Commission to show gambling caused any harm above and beyond those rates of harm in society.***

2.11.1 The ACT

The ACT 2001 study used the SOGS questions (in a 12 month timeframe) as the primary screening tool for problem gambling prevalence. It also included measures of HARM, as used in the Productivity Commission 1999 study.

This study reported that about 25% (n=15) of ACT problem gamblers had their job adversely affected by gambling or felt that they had less time to spend with their families. **These two questions were separate items in the survey, yet were combined in the report, so it is not possible to identify if they are the same respondents for both items.** As this response reflects great ambiguity, it should be disregarded.

The report also suggests that ACT respondents were more likely to experience relationship breakdown as a result of their gambling than Australians overall. However, as the report does not provide actual data and only provides percentage results rather than any significance testing, and it is not possible to explore if this result was due to the size of the sample. Further analysis was not able to be undertaken. The sample size should be adequate to provide a high probability of detecting as significant an effect size of a given magnitude if such an effect actually exists.

Further, we are not informed of the size of the claimed effects relative to this issue in society. This means it is not possible to state gambling affects people more than the rate occurrence in society.

2.11.2 New South Wales

The CPGI gambling suggests respondents may be dissected into the groups of ‘low risk’, ‘moderate risk’ and ‘problem gambling’. However, the New South Wales 2006 study, elected to combine two groups, at risk gamblers are referred to throughout the report, they are a net of moderate and problem gamblers.

The report in 2006 considers that 32% of the population indicates exposure to problem gambling through an interpersonal relationship.

However, in terms of items sacrificed for gambling money among all gamblers to spend on family, the result is consistent for all groups at 5%. This is regardless of whether the respondent be at non-risk or with a CPGI 8+. The

report also suggests **caution when reviewing these data as the sample is so small in the subset for gamblers with a CPGI of 8+. This makes these data extremely unreliable.**

2.11.3 Northern Territory

In 2005 the prevalence of gambling in the NT was measured by both the South Oaks Gambling Screen (SOGS) and the Canadian Problem Gambling Index (CPGI).

However, while community attitudes are reported extensively, the examination of the **effect of gambling on others was not addressed**.

2.11.4 Queensland

In Queensland, all three studies used the Canadian Problem Gambling Index (CPGI) as the problem gambling screening tool. Multiple requests have been made to the Queensland Treasury for data, however none have been successful.

The Queensland report acknowledges that due to the small numbers of gamblers who scored 8+ with the CPGI, many of the figures in the forms of gambling need to be interpreted with caution. Disappointingly, **the actual numbers of respondents in 8+ CPGI are not provided in the report**.

Emotive language has been used to report the possible effects on significant others. Using terms such as “notable finding” when 17%* reported the break-up of an important relationship because of gambling (Relative standard error of between 25% and 50%). **The accuracy of such claims is subject to attribution bias (easier to blame gambling than other relationship-shortcoming in themselves) and is considerably lower than the national rate of divorce**. The ABS estimates that *Between 1985–1987and 2000–*

2002, the likelihood of a marriage ending in divorce increased from 28% to 33%[71].

The Queensland gambling report did identify data which are less than reliable, figures with a relative standard error between 25% and 50% are marked with an asterisk*, and figures which have a relative standard error exceeding 50% are marked with a double asterisk**. Further, users of the Queensland report were advised to exercise caution when interpreting results marked with * or **.

In this report, data with high relative standard errors have usually occurred when analysing small sub-populations such as regions or the problem gambling group.

2.11.5 South Australia

The 2005 South Australian study reported the impacts of respondents (n=240) who measured CPGI 3 -7 and CPGI8+ in relation to family and interpersonal impacts, family interests and if an important relationship had broken up as a result of gambling.

Respondents who reported that they had children aged under 16 (n=55) were also asked if gambling had reduced the time spent with their children.

Overall, while it was reported that 5% of respondents experienced a break up of an important relationship because of their gambling, this equates to 13 respondents, no further statistical analysis was conducted. This is considerably lower than the national likelihood of divorce in Australia, and thus there are considerable difficulties in claiming this was a cost directly associated with gambling.

[71] ABS catalogue no. 4102.0

It is therefore not possible to assess whether the deterioration in family relationships may have occurred by chance, misattribution of why the relationship deteriorated (blaming gambling as a soft target), and is below the national rate for divorce.

2.11.6 Tasmania

In the 2007 Tasmanian study, comparative analyses were undertaken to examine trends in responses to questions relating to the effect on significant others.

In the 2007, 50% (n=2,027) of respondents claimed to know someone experiencing serious problems with gambling, which was an increase from 2005 (42%). It is unclear that merely knowing someone has any adverse impact that can be quantitative converted to harm.

In total, it was reported that 12.8% of the total sample identified at least one family member as having a gambling problem. These figures are similar to those obtained in 2005 (12.2 %) and 2000 (12.3 %).

2.11.7 Victoria

In the 2003 Victorian study, in which the newly developed VGS was used for the first time, the prevalence rates for the respondents (regular gamblers n=433) measured by the three screens ranged from 0.74% (VGS 21+), 0.97% (CPGI 8+) to 1.12% (SOGS 5+). *Note: The validation of the Victorian Gambling Screen had been completed and this was the first and only time this screen has ever been employed.*

It is reported that approximately 13 per cent of respondents live alone which is slightly higher than the state average. It is not clear whether this is a harmful activity in itself or was attributed to gambling. It is highly likely that gambling

and Clubs provide this section of the population with a social outlet and positive benefits.

The Victorian report suggests that many others may be affected on a daily basis, but the GRP supply ***no data to support this claim*** nor is it clear how this level of information can be quantified into a measurable notion of harm.

The following differences between the effects of problem gambling for males and females, and for different age groups are reported, however, from a total sample for the survey (n= 1,758), regular gamblers respondents (n=433) and only 68 (weighted) gamblers with 0.74% (VGS 21+), 0.97% (CPGI 8+) to 1.12% (SOGS 5+) were reported. This makes any difference highly unreliable, and it is not clear from the data whether differentiation of gender or age is caused by gambling prevalence scores.

Still, the report claims:

• A larger proportion of male gamblers (n=20) (reported as 40.5%) than female (n=8) (29.6%) reported that gambling had impacted on the amount of time spent with families during the previous 12 months. A large proportion of problem gamblers aged 25–49 experienced these problems (which is 18:17)

• A substantially higher proportion of males (n=20) (48.8%) than females (n=3) (11.5%) had experienced problems at work.

• However female problem gamblers in Victoria are more likely to lose a job due to their gambling (n=1) (3.7%) which equates to one person.

• A much higher proportion of females (n=4) (15.4%), especially in two age groups (18–24, 35–49) had also experienced problems with relationships than had male problem gamblers (n=3) (7.1%).

We are unsure whether and how the prevalence screens were used in this report. Assuming the data were aggregates, the results of 68 respondents,

employing emotive language and at times basing statements on one response, to suggest gambling has an adverse impact on significant others. **At the least we consider this reporting very misleading, and no statistical analysis has been undertaken** (perhaps because the sample set is far too small).

3. Response to Draft Finding 4.1

The Productivity Commission state:

There are many people not categorised as 'problem' gamblers who, nevertheless, say they are harmed by gambling.

The definition of underpinning the CPGI is:

> "Problem gambling is gambling behavior that creates negative consequences for the gambler, others in his or her social network, or for the community (Ferris et al., 1999)".

The Commission argues[72]:

> "the expenditure share of problem gamblers has strong relevance to public policy, as discussed above and in chapter 4, so that even highly approximate estimates can be useful……. Unless it is genuinely the case that there is *no* evidence, there are strong grounds for trying to place bounds on such highly policy-relevant numbers as problem gambling prevalence rates and expenditure shares"

The gambling debate is redolent with claims of evidence. As submitted herein, most of these claims of evidence are poor.

The Commission has not explicitly identified the limitations in each of the research studies they recant as "evidence" nor have they noted the limitations that each of the authors may have stated. This has the illusory effect to imply each of the studies is accurate. This approach does not seem consistent aspirations of the highest standards in public inquiries and research reports, nor does it provide readers with a transparent, full and balanced viewpoint.

It is our view that The Commission has not presented any primary evidence in support of the claim that harm spreads far wider than in those classified as

[72] B.4

problem gamblers. It has totally relied on secondary data to argue this case. As outlined elsewhere, there are considerable methodological problems with many commissioned research studies that undermine any argument that harm is linked to gambling, and it is virtually impossible to claim (with any accuracy or statistical significance) that harm is linked or primarily associated with one form of gambling.

Regardless, The Commission seeks to argue a relationship between problem gambling, harm and EGMs. There are several major issues in establishing significant and causal associations between harm and gambling, and particular forms of gambling.

3.1 Self Diagnosis

The DSMIV is a clinical tool developed over many years and tested. It is administered by a trained clinician.

The problem gambling measures from the CPGI followed a strong process of development and validation. However, as a prevalence study it is typically administered by a call centre employee, with perhaps an hour or two paid briefing time as training. There are often many other questions asked by the call centre operator and regularly commissioned research asks well over 100 questions and provides respondents with approximately 20 minutes to answer all questions.

However, we are told very little of the background of the tools that measure “harm” by The Commission. The CPGI does not facilitate the financial quantification or determination of harm or social costs associated with gambling (and particularly not EGM consumption).

To the best of our knowledge, all questions referred to by The Commission pertaining to harm require a level of self-diagnosis of a psychological or emotional state (among others).

The self diagnosis literature suggests that many erroneously come to the belief that they have something serious. There can be serious and deadly causes for just about every symptom imaginable, but that doesn't mean that respondents have a terminal disease (e.g. unexplained weight loss doesn't mean you have cancer). Just because some gamblers feel anxious doesn't mean they have an anxiety disorder or suffer any quantifiable harm above and beyond the rest of the population. Similarly a respondent feeling sadness does not necessarily mean they will have clinical depression or that the level of sadness among gambling respondents of various types will significantly differ to the rest of the population.

Only appropriately trained medial or psychological professionals have the knowledge and experience to reliably determine symptoms and diagnosis. Indeed, self-diagnosis would be particularly problematic with the psychological issues claimed to be associated with gambling they can impact upon one's ability to make judgements.

3.2 Establishing "Real" Harm

The extant evidence shows mental health disorders at much higher levels than any claims relating to the prevalence of gambling related problems. In Australia, about 18% of respondents to the Australian Mental Health Survey met the DSMIV criteria for a mental disorder in the last 12 months[73].

Australia's National Survey of Mental Health Survey, which did not investigate problem gambling, estimated that about one in four persons with an anxiety, affective or substance use disorder also had at least one other mental health disorder[74]. A recent report shows that one in every 10 GP appointments involve the management of a mental health condition (anxiety and sleep

[73] Teeson, Maree and Heather Proudfoot (2003), *Comorbid Mental Disorders and Substance Abuse Disorders: Epidemiology, Prevention and Treatment*. National Drug and Alcohol Research Centre, Australia.

[74] Australian Government (2005), *National Comorbidity Project*. Department of Health and Ageing, http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pubhlth-strateg-comorbidity-index.htm (downloaded 4 September 2005).

disturbance being the leading conditions), and that one in five Australians will experience mental health problem at some point in their lives[75].

The Commission must demonstrate levels of harm at significantly higher levels than already found in the community before it can make any objective or realistic claim gambling is associated with increased or "real" levels of harm. Without this test, any claim that gambling increases harm is spurious.

3.3 Poor Question Design

The design of the measures used to assess and collect indicators of harm that may be associated with needs to be closely scrutinised and evaluated. **There are many instances when attribution of harm may emanate from poor question framing**.

Indeed, in their 1998 research The Commission fail to consider the issue that people with pre-existing mental disorders gamble in their item measurement.

The Commission argued that:

> "But because the *National Gambling Survey* was a survey on gambling behaviour and these questions was asked only of gamblers, it would be very surprising if someone were to answer 'yes' to this question if gambling were not actually a source of their depression (either ever or in the last 12 months)."

One material problem of this position is that data was collected from a randomised survey and was not filtered out for persons with mental or behavioural disorders. Rather, given the levels of mental health problems in the community, it would be surprising if a number of people were not to answer 'yes' to depression independent of any gambling consumption.

---

[75] McLean, Tara "10m GP visits for Mental Illness", *Herald Sun* Aug 6 2008, citing claims by the Australian Institute of Health and Welfare

Unfortunately The Commission asked a number of questions[76], as do other researchers, assuming a causal relationship from gambling to mental health or comorbid disorder. However such a causal relationship has not been empirically established in any published study that we are aware. The over-simplicity of The Commission's 1999 approach resulted to miss-specified research model predicated by a spurious relationship. The body of knowledge concerning gambling and problem gambling has progressed considerably since 1999.

3.3.1 An Ethical Consideration with Question Structure

An ethical question follows from the structure of the mental health questions asked presuming gambling was the cause of the depression.

It is highly likely that people with mental health issues such as depression were asked questions that placed them in an insidious position about whether gambling caused their depression (or lead to some other comorbid issue):

- do they answer affirmative to a mental health confound even if they don't gamble;
- do they answer affirmative to a mental health confound even if they gamble and their mental health issue(s) preceded their gambling;
- do they answer affirmative to a mental health confound even if they gamble as a way to escape or self-medicate their other issues?

In any of these cases apply, the responses are forced to provide (on the Yes/No SOGS scale) will likely to be incorrect.

The Commission can not rule out that the measures used to detect gambling related problems may have been misattributed and pertain to issues related to other mental illness or comorbid disorder rather than to gambling, per se. This

[76] For example: Q3a. Have you ever suffered depression because of your gambling. Similar item design assuming gambling causation is asked about relationships (Q9c), employment (Q4a), suicide (Q13a) etc.

undermines the value of The Commission's research into gambling and invalidates the findings and policy emanating from this research.

3.4 The "At Risk" Category Does Not Exist in SOGS

In 1999, The Commission commented (6.21) that

> "Dickerson et al. (1996a)[77] have usefully developed the notion of the 'at risk' gambler.11 People identified in this at-risk group may experience harms from gambling, but not at levels which justify specific individual interventions. However, such groups may have large policy significance — being the target for public health campaigns, information provision and preventative strategies (either intended to cut the number of people in this at-risk group or to prevent the likelihood of people moving to the group which do need individual interventions).12 If tests reveal large numbers of people in this group, governments may consider regulations or other policy instruments to deal with the problems".

Unfortunately the concept of "at risk" is yet to be properly defined. For example, the GRP state:

> "Authors of the SOGS suggested a distinction, on the basis of SOGS scores, between 'nonpathological' gamblers (SOGS score of 0 to 2), possible pathological gamblers (3–4) and probable pathological gamblers (5+).32

32. refers to the citation which is:

> "32 Lesieur and Blume 1987. 'The South Oaks Gambling Screen. A new instrument for identification of pathological gamblers'. *American Journal of Psychiatry,* 144 (9), pp.1184-8."

A word search of this citation reveals the term "at risk" only appears in the paper's Appendix 1(p5):

> "Scores on the South Oaks Gambling Screen itself are determined by adding up the number of questions that show an "at risk" response:"

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[77] Dickerson, Mark, Allcock, C., Blaszczynski, A., Nicholls, B., Williams, R. and Maddern, R. 1996a, *An Examination of the Socio-economic Effects of Gambling on Individuals, Families and the Community Including Research into the Costs of Problem Gambling in New South Wales*, report prepared for the Casino Community Benefit Fund, NSW Government.

There is no categorisations for 0-2, 3-4, only that “5 or more = probable pathological gambler”. The Commission and other readers are urged to read the source documentation to verify this for them-selves. The “at risk” category in SOGS was conceptualised only for SOGS5+, and not at levels below this cut-off. It would seem The Commission has merely been creating an urban myth by assumptions “at risk was a valid consideration in SOGS.

The CPGI has been proposed with levels connoting “at risk”. This screen also suffers from the conceptual short-coming in not being able to “measure” progression happening, and at risk and progression remains largely untested as theory.

In their review of the CPGI, McCready and Adlaf (2006)[78] undertook research on the theory of “at risk”. To this end, they learned there is:

> “is less confidence in the soundness of the labels, classifications, and cut-points which, at worst, are considered unexplained and arbitrary.”
>
> “One investigator suggests that low risk gamblers endorse the low threshold items and wonders if such people even have a problem”.
>
> “To increase statistical power, “moderate risk gamblers” are often added to “problem gamblers”. One investigator added “low risk” gamblers to the “problem gambler” group.”
>
> “Respondents suggested that more research on the sub-types is needed, and that a guide to the analysis of sub-types would be a useful tool in an updated CPGI user manual.”
>
> “Other suggestions include: adding items, adding theory-based items, adding items specifically for “low risk” and “moderate risk” categories, and weighting items.”
>
> “Respondents call for more research, particularly efforts to study the labels, definitions, classifications, and cut-points for sub-types. In addition, it was suggested that the existing data sets be pooled and studied, and that longitudinal studies be undertaken.”

[78] McCready, John and Edward Adlaf, *Performance Enhancement of the Canadian Problem Gambling Index (CGPI): Report and Recommendations*, Health Horizons Consulting for Canadian Centre on Substance Abuse, 2006, p.8

In sum, “at risk” remains a theory without empirical justification. On one level it may seem intuitive and consistent with the “deviant paradigm” where innocent consumers are seduced by gambling, however to accept this is “the way” towards developing gambling related problems is premature.

3.5 The Confound of Comorbidity

A critical issue in the gambling debate is whether gambling can cause all of the harms that are reported in prevalence studies.

If The Commission fails to recognise that the prevalence of other mental health disorders overwhelms estimates of problem gambling, then poorly informed policy emanating from the 2009 gambling inquiry places at risk not only public funds, the Club and associated industries, but the health and well-being of those being miss-diagnosed.

As comorbidity is covered in length elsewhere in this report, it is not intended to be repetitive with this discussion.

3.6 Multiple and Concurrent Gambling Consumption

There are considerable difficulties establishing negative consequences are only attributable to gambling, and particularly to one form of gambling, EGMs.

As most problem gamblers consume multiple forms of gambling, trying to isolate the effects of one form of gambling is exceptionally problematic.

For instance, the recent “A Study Of Gambling In Victoria: Problem Gambling From A Public Health Perspective [79]” found that nearly 72% of moderate risk gamblers participated in three or more activities in the past 12 months (with an

79 http://www.justice.vic.gov.au/wps/wcm/connect/DOJ+Internet/resources/file/eb318747e4e4db1/FactSheet_16-ModerateRiskGamblers.pdf

average of approximately three gambling activities played). Other research also suggests problem gamblers consume multiple products.

3.7 The Myth of Pathological Progression

The attempts to translate SOGS or the DSM to encapsulate the concept of pathological progression are deficient in theory and lack empirical justification.

The popularisation of the myth that gambling related problems lie on a continuum began in 1999. The Productivity Commission makes use of a reference in a comparatively new gaming law journal and assumes the content of the paper must be valid and factual. In fact, the reference pertains to a footnote in the paper which is reproduced below[80]:

> "1 There are ongoing debates about the appropriate language to use in referring to the difficulties that individuals experience in relation to their involvement in gambling. There are also debates about the best way to measure this phenomenon. In this article, we define "problem gambling" as any pattern of gambling behavior that negatively affects other important areas of an individual's life, such as relationships, finances or vocation. The mental disorder of "pathological gambling" lies at one end of a broad continuum of problem gambling behavior."

The footnote refers to the difficulty in defining terms to describe differences in the gambling debate to differentiate between the terms problem and pathological.

There is no research evidence or theory to support the footnote and establish a continuum or progression exists.

[80] Volberg, Rachel, Moore, W., Christiansen, E., Cummings, W. and Banks, S, 1998, 'Unaffordable losses: estimating the proportion of gambling revenues derived from problem gamblers', *Gaming Law Review*, vol. 2, no. 4, pp. 349–59.

We advocate The Commission to be exceptionally cautious about transporting a concept from the physiological disciplines to an area of psychology without considering the theory or reference to any empirical evidence.

Indeed the Productivity Commission in 1999 suggested:

> "The mental disorder of "pathological" gambling lies at one end of a broad continuum of problem gambling behaviour (Volberg et al. 1998, p. 350).

Although the concept of pathological progression is employed as a method of tracking the progress of disease within the context of biomedicine, when **viewed from a psychological perspective, the concept of pathological progression is highly subjective**.

In short, the concept of pathological progression in gambling has not been proven.

The present debate surrounding the accuracy of the gambling screens in regards to establishing a suitable cut-off point (please refer to the sections examining SOGS for this discussion) suggests there are considerable obstacles to establishing pathological progression utilising existing tools. Specifically, the tools used to measure gambling prevalence are just too crude to accurately measure any changes or progression. In contrast to many physiological disciplines where change or progression can be "physically" determined, gambling diagnostic tools rely exclusively on responses to questions.

Repeatedly asking the same questions is extremely problematic and cannot be recommended to assess changes in pathological stage related to gambling. Hence, different measures will be required to assess pathology, and even these may present substantive measurement effects that will need to be managed. At present, the concept of "pathological progression" remains

only a concept in the gambling debate, and has not been validated empirically.

Moreover, gambling research is deficient in having too few longitudinal studies. The authors know of no panel data that can or has been used to establish pathological progression has ever existed in the gambling context.

Considerable literature is also being developed that there are multiple pathways to pathological gambling[81], and it is entirely possible that entry and exit to a pathological stage lies external to screens such as SOGS. This literature also facilities our observation that progression remains a concept not yet empirically tested.

3.7.1 The Concept of Pathological Progression

The term "pathology" typically refers to scientific study into the nature of disease and its causes, processes, development, and consequences. The concept of pathological progression refers to a sequence through which a disease intensifies or develops.

The concept of pathological progression is typically applied in the physiological disciplines, particularly under the umbrella of biomedicine such as genetics[82], cancer research[83], urology[84], immunology[85], anatomy[86] and in specific areas of pathology such as Parkinson's Disease[87,88].

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[81] Blaszczynski, Alex and Lia Nower (2002), "A Pathways Model of Problem and Pathological Gambling," *Addiction*, 97, 487-499.

[82] Carafoli, E. and Brini, M. (2007). Calcium Signalling and Disease: Molcular Pathology of Calcium. Springer, pp. 450.

[83] Gertjan J. L. Kaspers, Michael C. Heinrich, Bertrand Coiffier. (2008). Innovative Leukemia and Lymphoma Therapy. Informa Health Care, pp. 305.

[84] Makarov, D., Humphreys, E., Mangold, L., Walsh, P., Partin, A., Epstein, J., Freedland, S. (2005). Pathological Outcomes and Biochemical Progression in Men With T1c Prostate Cancer Undergoing Radical Prostatectomy With Prostate Specific Antigen. *The Journal of Urology*. Volume 176, Issue 2, Pages 554-558.

One of the schools of thought pertaining to gambling research suggests a medical or disease model. This approach is encapsulated in the American Psychiatric Associations Diagnostic and Statistical Manual's gambling screen (**DSMIV**).

It must be reiterated that the DSMIV is a screen of ten questions that must administered in a **clinical environment by trained personnel**. The APA is emphatic on the issue that a trained clinician is used to administer the DSM for the results to have any reliability and meaning.

To be diagnosed as a "pathological" gambler, respondents must answer **five or more** of the ten questions affirmatively. These scales have no provision other than the five item cut-off. That is, according to the DSM, people are either classified <5 and do not have problems, or are 5+ and may have problems. **There is no scope for progression.**

Thus, applying the concept of pathological progression would be inappropriate and inconsistent with the APA's conceptualisation of pathological gambling.

The SOGS was validated against the DSM and designed for use in a clinical environment. **The conceptualisation and validation of these diagnostic tools makes no provision and does not consider the concept of progression or "at risk" in their composition**[89].

---

[85] Welsh MD, Cunningham RT, Corbett DM, Girvin RM, McNair J, Skuce RA, Bryson DG, Pollock JM. (2005). "Influence of pathological progression on the balance between cellular and humoral immune responses in bovine tuberculosis". Immunology. January, 114(1):101-11.

[86] Hurst, J. W. and Schlant, R. C. (1990). The Heart, arteries and veins. McGraw-Hill Information Services Co., Health Professions Division, pp. 1200.

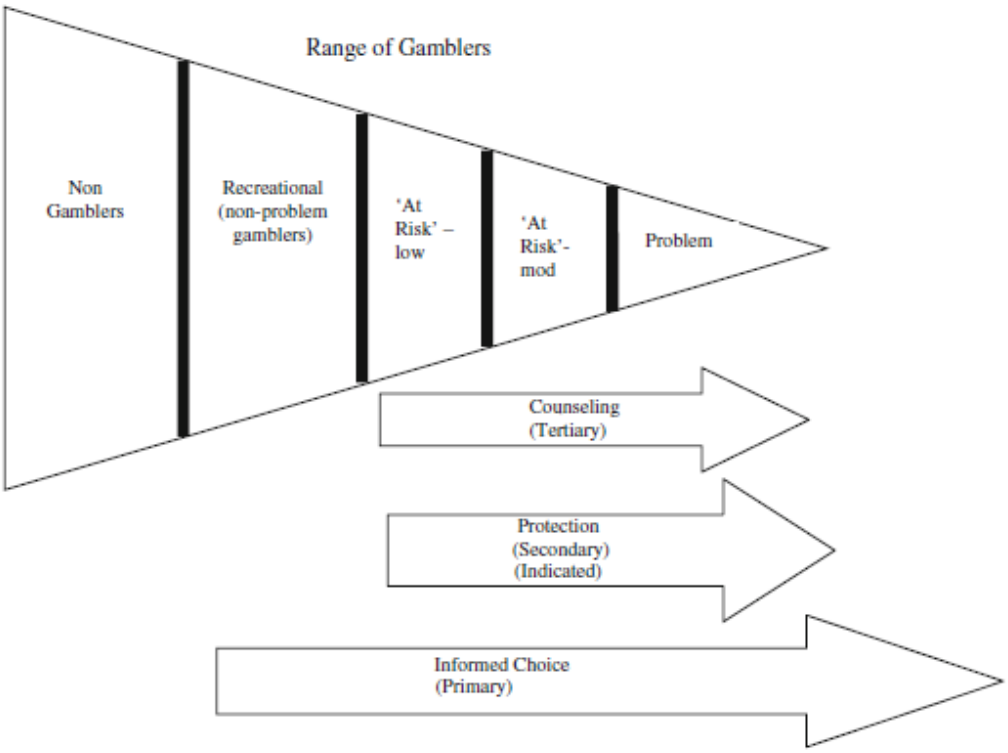
[87] Halliday, G. (2008). Clarifying the pathological progression of Parkinson's disease. Acta Neuropathologica, Volume 115, Number 4, April 2008, pp. 377-378(2).

[88] Molina, J. A., Sainz-Artiga, M. J., Fraile, A., Jimenez-Jimenez, F. J., Villaueva, C., Orti-Pareja, M., Bermejo-P, F. (2000). Pathological Gambling in Parkinson's Disease: A Behavioural Manifestation of Pharmacological Treatment? *Movement Disorders*, Vol. 15, No. 5, pp. 869-872.

[89] Lesieur and Blume (1987) make no reference that can be construed as "pathological progression" or "at risk" other than the 5+ cut-off. However, they do warn the sensitivity and specificity may fluctuate in other populations.

Given the stated purpose and protocols of the SOGS and DSM scales, **the burden of proof lies with those who want to use clinical diagnostic tools outside their intended purpose to prove they are accurate and reliable indicators of pathological progression and "at risk"**. Without substantive theory and supporting empirical evidence proving otherwise, the notion that the SOGS and DSM can be used to show pathological progression must be rejected.

Figure 4: IPART (2004) Levels of Prevention Framework[90]



IPART, along with most gambling researchers and commentators including The Commission, do not consider gambling trends in their models. It is well known in consumer behaviour that most consumption, including gambling consumption, is stochastic and a function of Poisson and Gamma distributions

[90] Dickson-Gillespie, Laurie, Lori Rugle, Richard Rosenthal and Timothy Fong (2008), "Preventing the Incidence and Harm of Gambling Problems" *J Primary Prevent* (January) 29:37–55

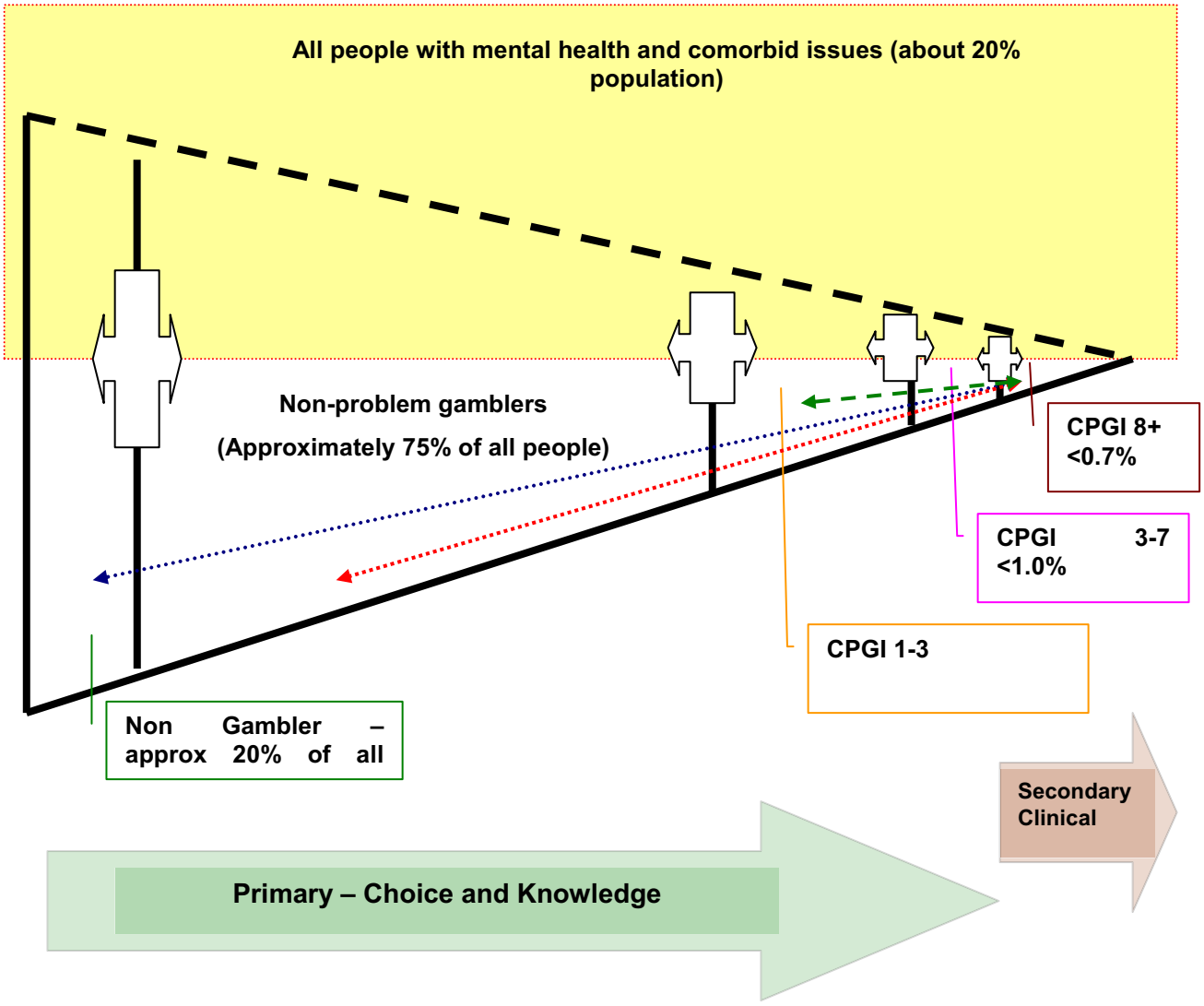
(see Mizerski, Dick, Rohan Miller, Katherine Mizerski and Desmond Lam (2004), "The Stochastic Nature of Purchasing a State's Lottery Products," Australasian Marketing Journal, 12(3) pp.56-70. for a more specific discussion[91]).

Real world dynamics have been incorporated into the revised IPART model. In sum, these suggest movements across the various categories of the CPGI clusters (assuming the CPGI categories are correct). In particular, as the CPGI categories depend on question responses rather than any physical or physically measurable symptoms, it is possible to transition in and out of the CPGI groups without the assumption of "pathological progression". This is reflected by the dotted green, red and blue lines running between CPGI Scores 8+ and non-gamblers.

Perhaps the biggest conceptual advance on this model is the introduction of Comorbidity and other mental health problems. This has profound implications in the public health framework and management of any gambling related problems. Explicitly incorporating comorbidity into this model makes it more likely the heterogeneity of problems (assumed to be only gambling related by IPART and other models) can be more appropriate addressed at a clinical level (including clinician training, resource allocation, etc). In terms of early and professional intervention, the acknowledgement of comorbidity as a major factor in the gambling debate makes it possible to develop social marketing and communications that are more appropriately targeted to those that need assistance.

[91] See also: Ehrenberg, Andrew .S.C., Goodhardt, G. and Barwick, T.P. (1990). Double jeopardy revisited. Journal of Marketing 54 (July), 82-91: Robert East (1997) in his text *Consumer Behaviour* also provides a good explanation of empirically modelled consumer behaviour.

Figure 5: Adjusted IPART (2004) Levels of Prevention Framework to Allow for Dynamics over Time



This model and image was created and is owned by Harvestdata©

4. Response to Draft Finding 4.2

The Productivity Commission state:

There are estimated to be between 90,000 and 170,000 Australian adults suffering significant problems from their gambling in a year (0.5 to 1.0 per cent of adults), and between 230,000 and 350,000 people with moderate risks that may make them vulnerable to problem gambling (1.4 to 2.1 per cent of adults).

As outlined earlier, EGM gambling (as with most forms of gambling), is characterised by repeat purchase in a mature and stable market. Thus, the overwhelming majority of consumers are well aware through experience by exposure and use of the various attributes of gambling products (including losing money). However, no consumer ever reaches the mythical “economic man” assumption of perfect knowledge and it is exceptionally naïve to believe all consumers know all about every gambling product attribute. Similarly, few if any consumers know every thing about every product attribute for every product they consume (e.g. toothpaste, chocolate).

It is clear that the rate of prevalence for problem and at risk gamblers is declining over time. **The estimated problem gambling prevalence rate in Australian presently sits around the 0.5% to 0.7% region.** This current prevalence too clearly defines this as CPGI8+ (and the creators of the CPGI are explicit with the cut-off point).

The estimated at risk category prevalence rate in Australian presently sits in the 1.4% to 2.0% region, and continuing to show a slow but downward trend. This may be defined as CPGI 3-7, and does not cover CPGI >7.5 (the creators of the CPGI were explicit with this).

It should be noted that the at-risk categories are expected to be higher that CPGI8+ levels. **Emphasising the paradox in combining the CPGI 3-7 with the CPGI 8+ measures, it is expected that the lower CPGI risk measures are supposed to be larger than those above them. It is better to have CPGI 3-7 than CPGI 8+ and with the present trends in Australia, there are no grounds to combine them.**

According to The Commission's Draft Report (4.4),

> "in the gambling area, there are limited data that could thoroughly test whether a set of apparent environmental or behavioural risk factors are associated with future harm…..
>
> Ideally, a longitudinal study would be undertaken that would identify those factors with the best capacity for predicting future harm. As it stands, the current assessment of risk factors rests on the judgment of experts (which is useful, but incomplete)…….
>
> It also rests on the reasonable, if largely untested, view that people displaying weak symptoms of harm (for instance, sometimes feeling guilty) are at risk of higher future harms.
>
> (The first wave of a Victorian longitudinal survey into gambling" commenced in 2008, and will enable a much better analysis of how people's risk profiles change and what factors might trigger these changes.)

The first wave of the Victorian (2009) longitudinal study has just been released. The relevant factsheet still separates "at-risk" and "problem gambling"[92]. Indeed, as shown later, it would seem the CPGI does cluster outcomes in logical and discrete categories as may be expected. This suggests at-risk and problem gambling mean different things, and should not be added together.

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92 http://www.justice.vic.gov.au/wps/wcm/connect/DOJ+Internet/resources/file/eb319547e52cc42/FactSheet_2-MeasuresAndDefinitions.pdf

PROBLEM GAMBLERS

Problem gamblers are defined by the PGSI as those who have experienced adverse consequences as a result of their gambling and may have lost control of their gambling behaviour. Involvement in gambling may be at any level, but is likely to be heavy. Problem gamblers score 8 or more on the PGSI.

MODERATE RISK GAMBLERS

Moderate risk gamblers are those who have responded 'never' to most of the indicators of behavioural problems in the PGSI, but are likely to score on one or more 'most of the time' or 'always' responses. This group may or may not have experienced adverse consequences from gambling. Moderate risk gamblers score 3-7 on the PGSI.

Although Harvestdata has not had the time to request and analyse data subsequent to the release of the 2009 Victorian research, the results in the section titled "Profile of Problem Gambling Risk Segments", is consistent with Ferris and Wynne's description that:

> sensitivity, and a minimum number of false positives. As the cut-off score for problem gambling declines, the rate of false positives increases. The optimum point for cut-off for problem gambling was 8 out of a possible 21. This gave us sensitivity of 78% for the clinical assessment interviews

4.1 Evidence the CPGI Categories are Discrete

The CPGI was designed to differentiate between the "at risk" categories and "problem gambling", and all categories are very discrete by design. Thus[93]:

> The CPGI was conceptualized as, and developed as, a measure that would elicit a more normal distribution of responses than clinically derived measures like the SOGS and the DSM-IV. While it is expected that there will be agreement in terms of those who exhibit the most problematic gambling behaviour, we expect to see less convergence in the middle range.

It is clear the CPGI were never intended to "bundle-up" the at-risk categories with problem gambling. They clearly mean different things and have different implications for harm.

[93] http://www.ccsa.ca/2003%20and%20earlier%20CCSA%20Documents/ccsa-008805-2001.pdf

While there is some overlap in some categories (mostly evident because this recent Victorian study seems better designed than most gambling research in Australia), largely discrete categories are apparent by a quick overview of the recent Victorian study for the question where the respondents had spent money in the last 12 months. Please note the various levels of the CPGI are differentiated according to the colour chart below.

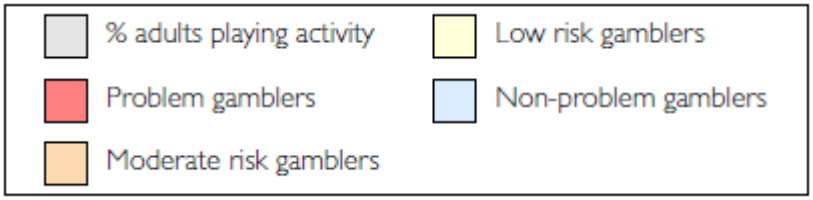


Figure 36. Where lotto/Powerball/Pools was played in past year by Canadian Problem Gambling Severity Index - MULTIPLE RESPONSES (N=7560, July-October 2008)[a]

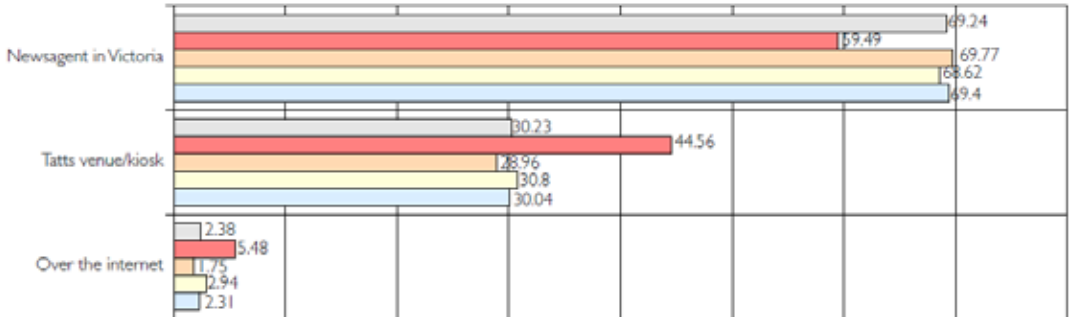


Figure 37. Where scratch tickets were purchased in past year by Canadian Problem Gambling Severity Index - MULTIPLE RESPONSES (N=2322, July-October 2008)[a]

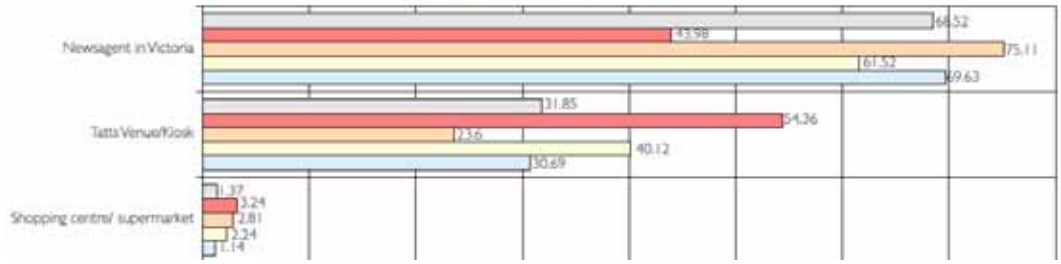


Figure 29. Participation in different gambling activities in Victoria in past year - Comparison by Canadian Problem Gambling Severity Index (July-October 2008 - N=15000)[a]

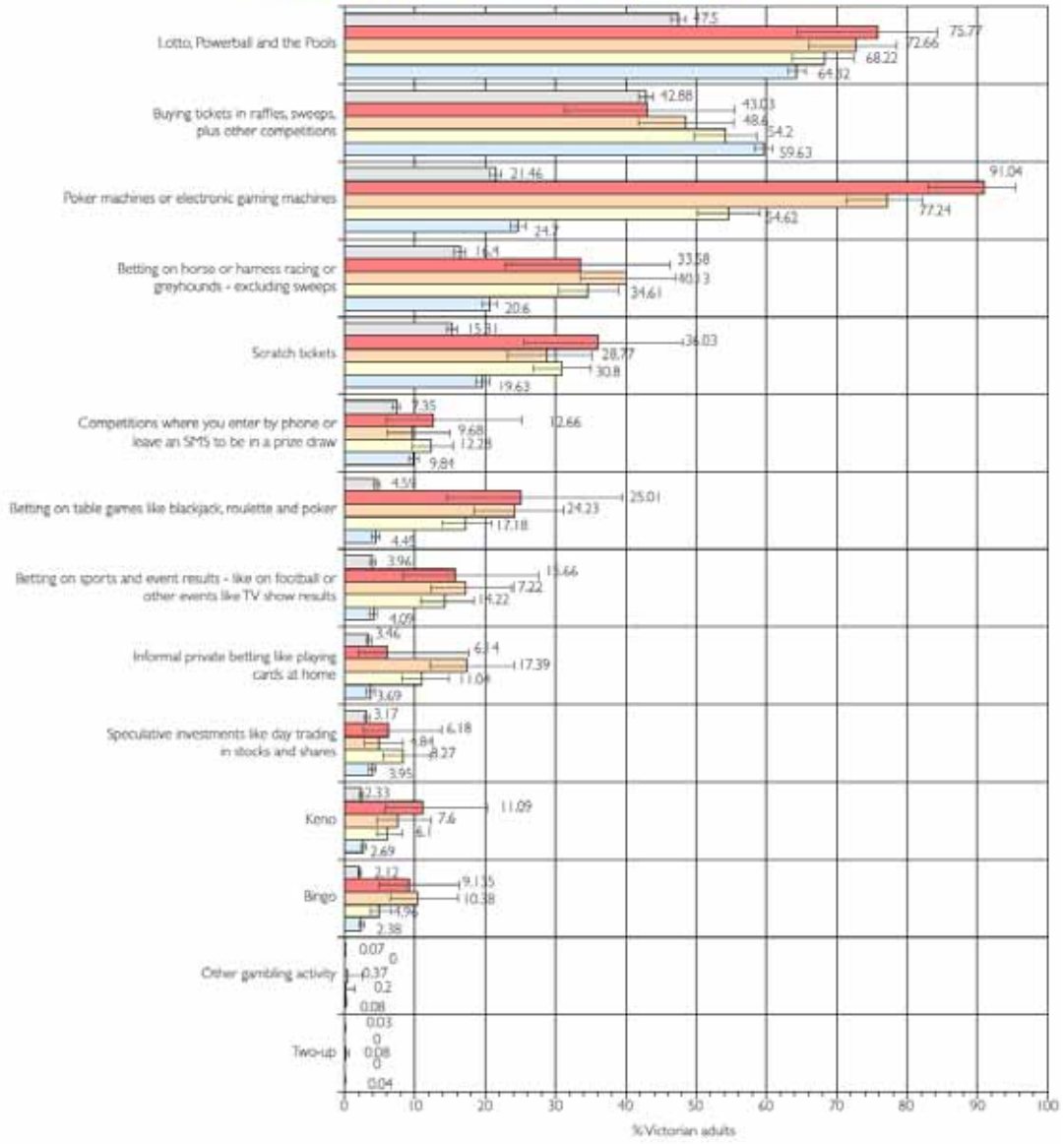


Figure 38. Where bingo was played in past year by Canadian Problem Gambling Severity Index - MULTIPLE RESPONSES (N=372, July-October 2008)[a]

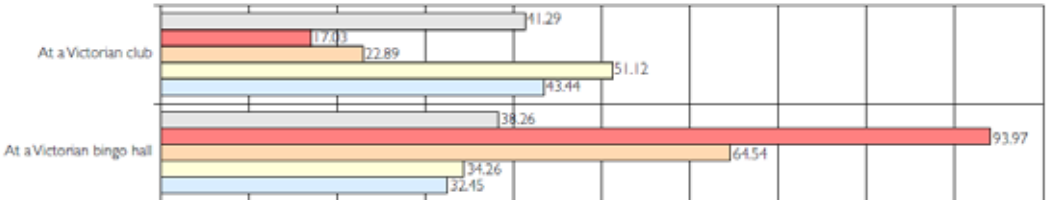
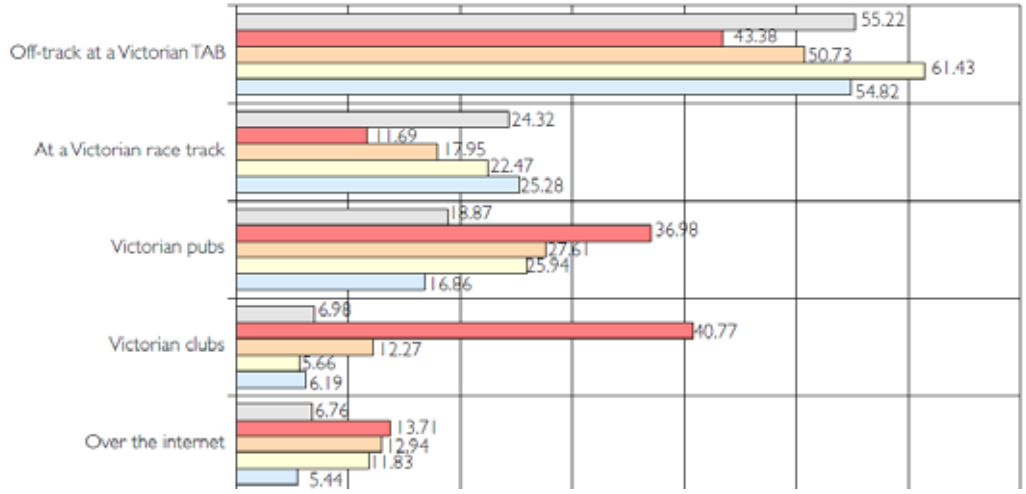


Figure 33. Where horse/harness racing and greyhound betting were undertaken in past year by Canadian Problem Gambling Severity Index - MULTIPLE RESPONSES (N=2250, July-October 2008)[a]



Specific to EGMs and levels of CPGI, the recent Victorian report revealed significant differences between GPGI8+ and CPGI 3-7 at the p=.05 level[94]:

> "The relationship didn't hold quite as well for moderate risk gambling, as compared to low EGM spend bands, the association between moderate risk gambling and high EGM spend bands was only tending towards significance".

These CPGI categories are theoretically and practically different. For all intensive purposes, this looks to have translated to practical differences. There appear no bases for which to blend together the CPGI 3-7 and CPGI 8+ scores, even for well intentioned policy justifications.

[94] Page 61.

5. Response to Draft Finding 4.3

The Productivity Commission state:

There are estimated to be between 90,000 and 170,000 Australian adults suffering significant problems from their gambling in a year (0.5 to 1.0 per cent).

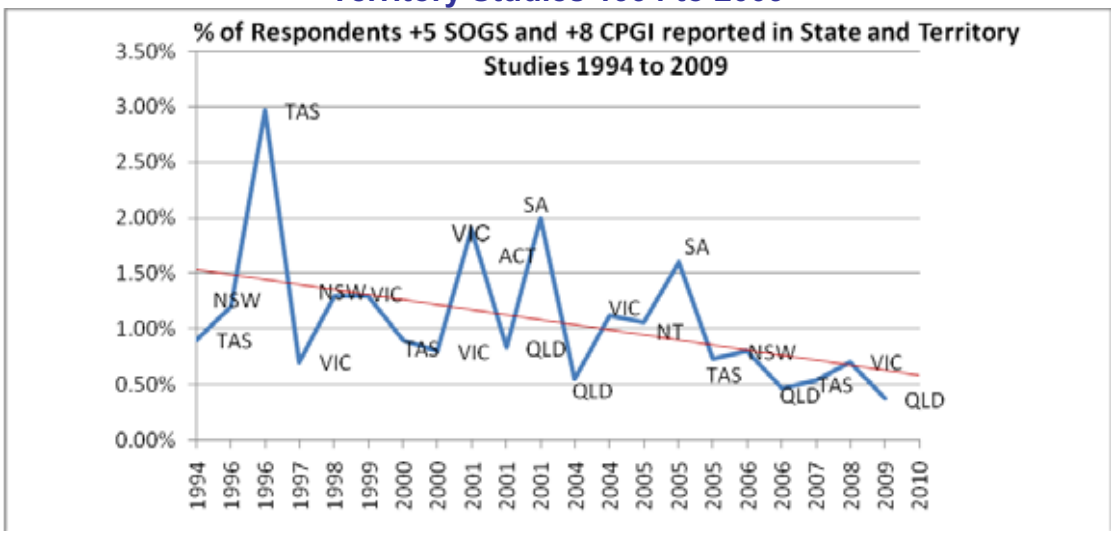
This draft finding presumes causality between problems and many different forms of gambling, or the act of gambling. Conceptually, gambling is a generic act and is not confined to any single product (and most evidence suggests the consumption of multiple products).

5.1 Declining Rates of Problem Gambling Prevalence

An increasing body of evidence and theory suggests that in many cases problem gambling is likely to be a symptom of other problems. Thus, while it is true one case of harm is too many, it is likely problem gambling per se will continue to exist ad- infinitum, just as it seems to have existed throughout time.

It is clearly apparent that problem gambling prevalence, as it is presently measured, has fallen in a clear and sustained manner. ***The last six prevalence studies in Australia place problem gambling prevalence well under the 1% mark, and in two of the last four studies, have fallen to less than 0.5% level***. The downward trend is “certain” and it is extremely unlikely that problem gambling levels are as high as the 1.0% level.

Figure 6: Percentage Change in +5 SOGS and +8 CPGI State and Territory Studies 1994 to 2009



Based on the recent data and trends, it may be more accurate to note problem gambling at approximately the 0.5% level and have an upper band at 0.7%.

Any modelling or evaluation of the future impacts or social costs alleged to be associated with EGM gambling by The Commission must incorporate a sustained downward trend in problem gambling prevalence rates. It must also be recognised there are many other factors likely to be at play (e.g. they gamble on other forms of gambling, other members of the household gamble, they gamble to escape other problems).

The obvious policy conclusion for The Commission to recommendation is more of the same and the instigation of a "watching brief" to reconsider the evidence at a later time before deciding whether another in-depth review of gambling is warranted.

6. Response to Draft Finding 4.4

The Productivity Commission state:

About 5 per cent of adults play gaming machines weekly or more often. Around 15 per cent of this group would be classified as problem gamblers, with around an additional 15 per cent experiencing moderate risks. Altogether, around one third of regular gaming machine players face significant risks.

Drawing from history, The Commission's 1999 report comments (Appendix P.9) that "the favourite form of gambling for the problem gambling is sometimes regarded as the source of the problem. Expenditure shares could be calculated for the favourite form only. ***The conceptual difficulty is that a favourite game may not always be the source of the problem. More critically, a player may experience problems with a number of gambling modes***". This suggests the rationale behind this 5:15:33 equation is flawed.

The data cited by The Commission in 1999 (P.4) estimates expenditure by problem gambling were derived from gaming machines (34.5%), wagering (23.6%), lotteries and scratchies (13%), casino table games (9.9%) and other (non-raffle) (21.1%). This acknowledges alleged problem gamblers were consuming a number of different gambling products.

However, it is interesting to note that the lottery category still accounted for 13% of expenditure by "problem gamblers" (or 24.7% adjusted), and this category was supposed to be an ordinary part of life and not worthy of policy intervention.

A review of several of the gambling prevalence studies in Australia leads us to believe that this draft finding is heavily reliant on the 2003 Victorian Longitudinal Study's logic and analyses. As explained in depth elsewhere in this report, it is our opinion that this Victorian study is exceptionally problematic and likely to provide misleading results.

For instance, “regular” is somewhat arbitrarily defined as each week. What is the rationale for choosing weekly play and concentrating only on EGMs though it is clear many “problem gamblers” consume multiple forms of gambling each week?

In the absence of gambling data (Harvestdata was denied the Victorian data, though it has subsequently been released for academic research), to test whether play frequency may be a predictor of “at risk” (and in the absence of any publicly available research that validates the “at risk” concept), the Productivity Commission’s 1999 self report gambling data was analysed using ordinal logistic regression of EGM frequency and cut-off points as defined by Winters, Stinchfield and Kim (1995; p. 176). The analyses showed that increasing levels of EGM play frequency were not found to be statistically significant to levels of gambling. As expected, these results suggest the concept of “at risk” is invalid within the SOGS context.

As this report seems to state and then state repeatedly, one side effect of small sample sizes is that the number of respondents and effective statistical power are reduced even further when filters are applied. Thus, the 2003 Victorian study dissects the number of problem gamblers (n=27) to reduce a small number of respondents into an even less reliable number on which they form inferences for a population of more than three million people aged 18+. Thus;

> “by increasing sample size, smaller and smaller effects will be found to be statistically significant until at very large sample sizes almost any effect is significant” (Hair, Anderson, Tatham & Black 1998, p.12).

This problem with gambling studies was recognised by Ferris and Wynne (2001);

> One of the issues in establishing predictive validity is the very low base rate of problem gambling in the population, which means that very large samples are necessary to obtain acceptable levels of accuracy. The difficulties with error margin, and with predicting trends as a result of the low prevalence of problem gambling in the population, can be addressed only by ensuring adequate sample size, and by ensuring that the measure used has good reliability.

The Victorian 2003 report also published SOGS findings. As explained elsewhere in this report, it is clear that SOGS did not present good reliability and there were problems flowing from the low number of cases in the study.

Now the 2009 Victorian "A Study of Gambling in Victoria - Problem Gambling from a Public Health Perspective" has been released, more up to the date research from Victoria provides a different perspective.

The 2009 Victorian report leads to the conclusion that it is naïve to try to isolate one form of gambling as the main form of risk when it is apparent that multiple forms of gambling are consumed[95].

The mean number of gambling activities played by different risk segments in the past year is presented in Table 23 and Table 24. Moderate risk and problem gamblers respectively played an average of 3.12 and 3.10 activities in the past year. Findings also showed that 43.29% of problem gamblers and 48.51% of moderate risk gamblers played four or more activities in the past year.

Table 23. Mean number of gambling activities in past year by Canadian Problem Gambling Severity Index (N=11235, July-October 2008)[a]

Type of gambler	Mean gambling activities			
	Mean	SE	Lower	Upper
Non-problem gamblers	2.12	0.01	2.09	2.14
Low risk gamblers	2.87	0.05	2.77	2.97
Moderate risk gamblers	3.12	0.07	2.99	3.25
Problem gamblers	3.10	0.12	2.87	3.33

a. Question - On which of the following activities (activities prompted) have you spent any money in the past 12mths? (Base: Adults who have engaged in at least one gambling activity in the past 12mths)

Interestingly, the CRG also identified "regular gamblers" consumed more than three forms of gambling. Yet for some reason, they only chose to concentrate on EGMs.

[95] Comparison of Problem Gambling Segments, p93, (Victoria 2009).

Table 2: Participation on gambling and average number of gambling activities among gamblers, for different socio-demographic variables

Characteristic	Participation in gambling (among total population)[a]	Average number of gambling activities (among gamblers)[a]
Gambling group		
Non-gamblers	(0%)	-
Non-regular gamblers	(100%)	2.20
Regular gamblers	(100%)	3.43

Although our reading of the latest Victorian Report has been expedited by deadlines, we do not identify any modelling or data that supports the Victorian 2003 Report's logic, or the 5:15:33 assumption.

7. Response to Draft Finding 4.5

The Productivity Commission state:

It is estimated that problem gamblers account for around 40 per cent of total gaming machine spending (the midpoint of a range of estimates as high as 60 per cent and conservatively at least 20 per cent). Moderate risk gamblers account for a further significant share.

The Commission's estimate that problem gamblers account for approximately 40% of the total gaming machine spend appears to be drawn from their 1999 Report with secondary support from are other studies, typically with very small sample sizes.

This response provides some insights into the very considerable limitations of several funded gambling studies referenced by The Commission. It is our opinion these are of insufficient quality to be used for policy formulation. Although not expressly examined in this response, it is highly doubtful whether the small number of problem gamblers and the community and gambling profiles in The Northern Territory (n=54) or The Australian Capital Territory (n=38) adequately reflect those of the rest of Australia.

However, there are substantive theoretical and evidence based oversights in this view. ***In 1999 The Commission expressed a finding that (P.6) "it is still true that a majority of heavy gamblers are not problem gamblers (using the SOGS5+ criteria).*** It would seem intuitive (ceteris paribus) that if that a majority of heavy gamblers (and most gamblers) are not problem gamblers, then the share of expenditure attributed to non-problem gamblers would be higher than for problem gamblers. It seems logical that a higher share of EGM gambling revenue would flow from non-problem heavy gamblers.

7.1 Club Loyalty Data

It is our understanding that the Club that supplied data to The Commission is an outstanding corporate citizen with a proactive and diligent approach to responsible gambling.

It is unlikely that there are “problem gamblers” in the loyalty program data supplied to The Commission. We know of no literature or research that would support any implication that problem gamblers are members of loyalty clubs: many problem gamblers are alleged to seek anonymity rather than recognition from loyalty membership. Being visible on a database, sent incentives, and enhanced service treatment seems uncharacteristic of the stereotype associated with EGM related problem gambling. Moreover, the incentives offered would not seem to be a driver for problem gamblers. With all of the scrutiny associated with gambling, it would seem incentive programs would be banned if this were not the case (e.g. like windows and advertising).

According to The Commission (1999, Appendix P.3) “of course this does not mean that heavy spending equates with excessive spending or problem gambling”. That the majority of heavy gamblers need not be and are not problem gamblers seems lost in most Australian studies. Indeed, most studies generally overlook heavy spenders who are not problem gamblers in their research and discussion.

Indeed, this is a major oversight in the 2007 Livingstone and Woolley paper: these authors only focused on alleged problem gamblers, added the “at-risk” category though we know of no substantive grounds to do so and are not informed of any justification for this reclassification in their paper.

It would seem the Club loyalty data may support The Commission’s 1999 assertion that “it is still true that a majority of heavy gamblers are not problem gamblers (using the SOGS5+ criteria)” and that the share of expenditure attributed to non-problem gamblers would be higher than for problem gamblers. This should be a fundamental and explicit aspect of all modelling of

gambling expenditures. Rather, this "fact" has been overlooked by researchers, and this would undermine the reliability of their "evidence".

The data supplied by Clubs Australia to The Commission is behavioural data, not self report data. We believe these data are likely to support The Commission's 1999 claim that "it is still true that a majority of heavy gamblers are not problem gamblers". It also demonstrates how a few gamblers with higher expenditure can influence a very small sample, as would seem to be the case in many problem gambling studies. No theoretical or evidential bases are provided believe there are any problem gamblers in these data and the Club loyalty data should not be used in any attempt to verify expenditure patterns inclusive of problem gambling.

7.2 An Evaluation of Self-Report Gambling Expenditure

Most people are poor at estimating numerical information about their lives. Hence surveys need to be designed with care when offering sets of response categories for questions. Such care needs to be displayed in the survey items relating to gambling behaviours and the time spent actively gambling, so not to influence the answers. Significant effects have been shown by using different response sets[96], so skewing results is a critical issue that must be managed, and be seen to be managed to avoid inaccuracies in survey research.

Unfortunately, gambling research is replete with examples of poor questions that typical people will not be able to answer without excessive effort, and they probably don't know the answer anyway. This can be demonstrated with reference to the 2008 Tasmanian research included as a case (but not limited to these researchers) as an example:

[96] Dillman, D. A. (2000). Mail and Internet surveys--The tailored design method. New York : John Wiley & Sons, Inc. p.30.

> “Q5D AMOUNT SPENT ON PLAYING POKER MACHINES AT PUB ETC
> "Q5D Approximately how much money were you out of pocket when you finished gambling or did you win on the last occasion you gambled on poker machines at a PUB, CLUB OR HOTEL? By out of pocket, I mean the difference between what you spent and eventually got back at the end? _NOTE: SPECIFY EITHER AMOUNT WON OR AMOUNT LOST - DO
> NOT INCLUDE DOLLAR SIGNS_"
> NUM 1-10000
> 1. I won (specify Q5D01)
> 2. I lost (specify Q5D02)
> 3. None”

Substantial difficulties and ambiguity exist in this question (and recall respondents are to answer dozens of questions over the telephone.

To start, 5D requires a clarifying statement.
Respondents need to be able to interpret what “out of pocket” means.
In the qualifying statement, “out of pocket” is stated to mean “the difference between what you spent and what you got back at the end”.

There is no mention of gambling in the qualifying statement. This omission creates ambiguity and it is possible respondents gave a number of what they thought they spend on the entire occasion (including dinner, drinks etc) and recalled they gambled on a poker machine (and their wins and losses). It is possible respondents won on poker machines but were out of pocket because they ate and drank on the same occasion.

Providing an estimate of **what they thought they spent on one occasion would be cognitively easier** for most respondents than recalling what they thought they won or lost on poker machines on that last occasion. That is, respondents are more likely to overstate their expenditure on poker machines as they will bundle in the outing’s entire costs to their estimate.

To answer Question 5D, respondents would need to be able to accurately recall:

- How much money they had immediately before they entered a licensed premises (after paying for taxi or other transport costs)
- How much they had when they left the venue
- Thereafter, to determine how much money that they spent on:
    - Alcohol and other Drinks (did they get into a shout with friends or buy someone else drinks, if so, how many and how often, what was the price of drinks etc)
    - Food (dinner, snacks)
    - Purchase of cigarettes or cigars, lighters etc
    - Entertainment (entry to bands, juke boxes, pool tables, video games etc)
    - Charitable donations (e.g. salvation Army or raffles)
    - Loans to or from friends, whether they spent money on anything else
    - Whether they dropped, loaned or lost any money

Furthermore, memory structures are likely to recall our last “big nights out” rather than a few spins of the pokies while at a pub (on the way home etc). The outcome would lead to over-estimation of what was won or lost if respondents extrapolate this sum out over a twelve month period (assuming they can do such maths in their head while talking on the telephone).

Question 5D is only one example of a poorly designed item that will lead to inaccurate responses in the Tasmania 2008 Survey.

In the case of Question 5D, there will likely be an over-estimation of expenditures attributed to poker machine play (and hide other purchases).

In addition, many gambling related questions asked about consumption “**In the last 12 months**.”

For the vast majority of respondents, it is not reasonable to expect them to accurately recall their consumption patterns over this period of time. This is particularly the situation if the consumer's expenditure pertained to only a small proportion of their overall expenses. Even the most involved consumers will not reasonably be able to recall their expenditures on product categories over the last twelve months. It is well recognised that recall is more accurate for shorter periods, such as yesterday or over the last week, than a guess over an entire year.

In addition to recall effects, gamblers typically consume a range of other products and services (e.g. food, coffee, drinks, snacks, music and amusements) during their visit to a club, and most patrons who gamble participate in more than one form of gambling inside the Club (e.g., EGMS, Raffles, TAB, KENO etc) and externally (e.g., Lotteries, Scratch, TAB, Internet).

For example, a study of excluded gamblers from Missouri identified that 54% of men and 27% of women engaged in mixed forms of play[97]. In Australia, the GRP[98] identified over 65% of regular gamblers take breaks, with the most common reasons including getting a drink (56.9%), eating (26.9%) and smoking (26.9%). With the exception of cigarettes that are portable, eating and drinking in a gambling environment typically means spending money inside a club (or hotel). This is supported by other Australian research that shows gamblers typically spend money on a range of products during a visit to a venue[99].

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[97] Nower, Lia and Alex Blaszczynski (2006), "Characteristics and Gender Differences in Casino Self-Excluders," *Journal of Gambling Studies,* 22, 82-99.

[98] Gambling Research Panel (2004), 2003 Victorian Longitudinal Community Attitudes Survey, p20.

[99] Miller, Rohan (2006), "Assessing the Impact of Smoking Bans in Hotels, Bars and Taverns: Implications for the Consumption of Smoking, Drinking and Gambling?" proceedings, Marketing and Public Policy Conference, June, Long Beach, California.

A growing body of literature supports the view that there is serious doubt that self-reported expenditure on gambling products is anywhere near accurate. For example, gamblers in Washington State **reported losses two to ten times higher** than actual government gambling revenues[100]. A Canadian study reported gambling expenditures to actual revenue **varied from a low of 0.77 to a high of 4.2, with an average ratio of 2.1** (i.e. self-reported estimates of gambling expenditure were more than double actual receipts)[101]. Other studies observe respondents' under-estimate their estimates of gambling expenditure[102].

In their review of the CPGI, McCready and Adlaf (2006)[103] note (p8)

> "there is considerable doubt about subjects' ability to accurately recall and estimate gambling frequency, duration and spending….causing a significant number to consider data unreliable".

McCready and Adlaf (2006)[104] further comment:

> "gamblers have problems remembering the amount spent over any period of time"

In sum, it is obvious and well known that ***self-report expenditure is notoriously inaccurate and a poor way of measuring expenditure. We***

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[100] Volberg, Rachael A., W.L. Moore, E. M. Christiansen, W.E. Cummings and S.M. Banks (1998), "Unaffordable Losses: Estimating the Proportion of Gambling Revenues Derived from Problem Gamblers," *Gaming Law Review*, 2, 349-360.

[101] Williams, Robert J. and Robert T. Wood (2004), "The Proportion of Gaming Revenue Derived from Problem Gamblers: Examining the Issues in Context", *Analyses of Social Issues and Public Policy*, 4(1), 33-45.

[102] Abbott, Max and Rachael A. Volberg (2000), *Taking the Pulse on Gambling and Problem Gambling in New Zealand: A Report on Phase One of the 1999 National Prevalence Survey*, *NZ, Department of Internal Affairs.*

[103] McCready, John and Edward Adlaf (2006), *Performance Enhancement of the Canadian Problem Gambling Index (CGPI): Report and Recommendations*, Health Horizons Consulting for Canadian Centre on Substance Abuse.

[104] McCready, John and Edward Adlaf (2006), *Performance Enhancement of the Canadian Problem Gambling Index (CGPI): Report and Recommendations*, Health Horizons Consulting for Canadian Centre on Substance Abuse.

believe the inherent error in these studies places them beneath any evidentiary standard, and certainly beneath a balance of probability level.

Any attempt to triangulate data using poor quality data must lead to poor quality conclusions and defeats the purpose of triangulation. We speculate that the reasons The Commission did not undertake the proposed meta-analyses were related to the quality of data rendered this exceptionally difficult or impossible. This would be particularly the case for estimates of life-time expenditure and longer term estimates such as a twelve month period.

It is our opinion that if The Commission utilised the 2008 Tasmanian report in their justifications and modelling, then there is all likelihood this will be erroneous and is not fit for evidenced based policy. If the errors highlighted here are similar to other research and gambling reports, then although the results may be similar or consistent, that does not make them accurate, correct or sufficient for evidence based policy. Poor quality evidence does not lead to good policy. The limitations of evidence should also be clearly stated and adhered to.

7.3 Reliance on Counsellors' Opinions

The Commission's 1999 Report comments that in "gaming machines and wagering, appear to pose higher levels of risk for problem gambling"……..and "once it is recognised that a problem gamblers problems may stem from just one form of gambling, it raises the question whether all other forms of play should be tarred with the same brush" (p. 8). It seems one source of this knowledge is counselling rather than data.

Why these opinions seem to carry more weight than the data is an interesting and unanswered query?

This section of The Commission's 1999 Report notes that "the favourite form of gambling for the problem gambling is sometimes regarded as the source of the problem. Expenditure shares could be calculated for the favourite form only. The conceptual difficulty is that a favourite game may not always be the source of the problem. More critically, a player may experience problems with a number of gambling modes"(P. 9).

It is not clear why some gambling studies (e.g. 2003 Victorian and others based on this) strive to assume "favourite" as the only or dominant source of gambling that may be associated with problems. Clearly, there are flaws in this logic. The outcome, however, is to oversimplify the problem to two variables (problems and EGMs) when clearly the issue is far more sophisticated.

The data cited by The Commission in 1999 estimates expenditure by problem gambling were derived from gaming machines (34.5%), wagering (23.6%), lotteries and scratchies (13%), casino table games (9.9%) and other (non-raffle) 21.1% (p. 4).

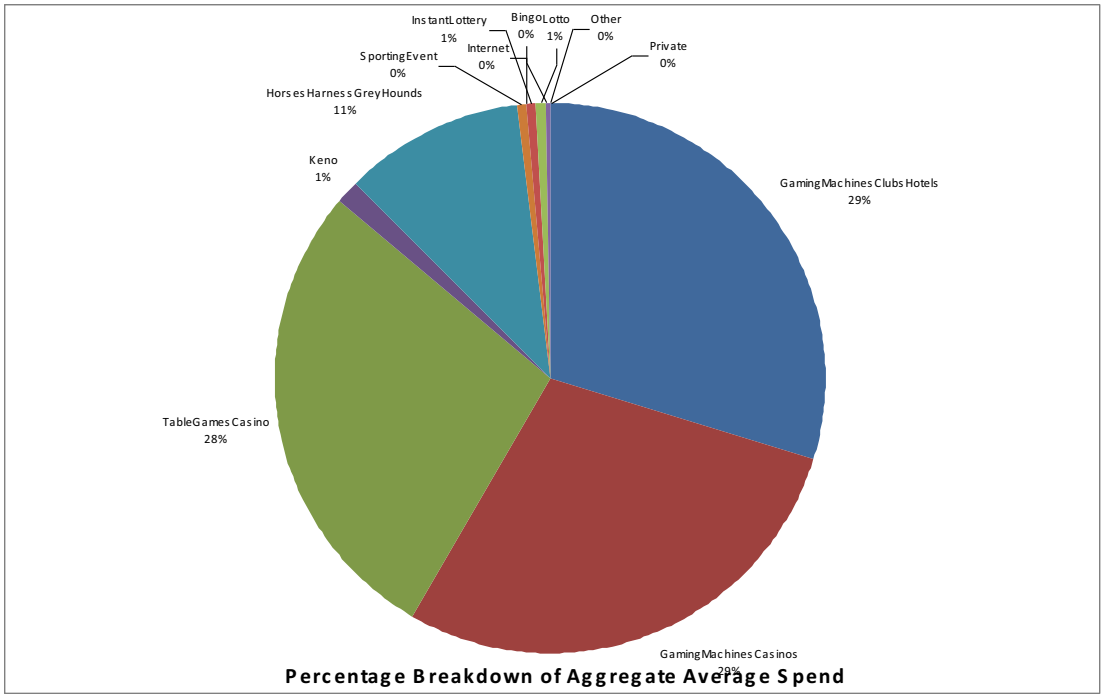
Members of the Harvestdata team have reviewed problem gambling data in some depth. It is our firm belief that the expenditure reported by problem gamblers in a clinical environment does not reflect that in the broader community. It is too unreliable for use for the bases of evidence based policy. In stating this, we fundamentally differ from The Commission's view that any evidence is useful for policy – the evidence must be fully understood and be used in the appropriate context.

As an example of the differences between clinical data and prevalence data, the following illustration is drawn from details collected from over 2,000 problem gamblers over fifteen years. This simple pie chart shows the reported expenditure by problem gamblers is mostly attributed to casinos. This finding from is in stark contrast to The Commission's assumptions and simplistic inferences.

Herein a paradox of corporate social responsibility is revealed. Proactive organisations such as Casinos and Clubs (such as the one supplied The Commission with data) that actively support programs to help consumers with problems can be vilified if data is misinterpreted.

Moreover, only a small per cent of problem gamblers apparently obtain assistance from specialised gambling counsellors. This sub-set cannot be said to be representative of any population of problem gamblers. However, if the vast majority of people who seek help because of successful social marketing from Clubs and the Casino, then it becomes a self-fulfilling prophecy in the clinical data that most problem gamblers spend most on EGMs. This implies that if there were fewer or no cases referred by other major forms of gambling (e.g. lotteries and wagering), then the clinical cases and data would not exist in the counsellor's world.

Figure 7: Percentage Breakdown of Aggregate Average Spend on Gambling



The Commission has stated it does not know what policy works and what does not in the gambling debate. It has reported very little consideration of the industry based efforts in the Draft Report, and these may have had an effect

reducing the level of problem gambling over time. In the absence of knowledge it should take into account the social marketing initiatives supported and driven by venues. These efforts should be rewarded not used to vilify, and should be recognised as a positive measure by The Commission.

7.4 The Role of Habit in Gambling Consumption

Habit undoubtedly plays a large part in some of our regular behaviours and that behaviour is at least partially "mindless"[105]. Once a product reaches maturity in a market, then the market can be described as stable and consumption patterns are characterised by repeat purchase. It follows that much consumption, including gambling consumption, falls within the habit paradigm.

Consumers' behaviour, and particularly repeat purchase behaviour, in stable market conditions can be modelled as a stochastic process without any cognitive factors[106]. The Habit Paradigm can generally be described by patterns described by the Negative Binomial Distribution (NBD). The NBD has successfully been applied to a broad range of products[107] and has demonstrated stability in steady conditions such as mature markets[108].

The NBD has been empirically validated to "fit" a broad range of products over many years. It has also been empirically proven that the NBD fits the consumption of gambling products, suggesting that stochastic patterns of consumption are similar to the vast majority of normal consumer goods.

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[105] Feldman, Jack and John G. Lynch (1988), "Self Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior,"*Journal of Applied Psychology* 73(3), p423.

[106] Ehrenberg, Andrew S.C. (1988), *Repeat-Buying: Facts, Theory and Applications*, Oxford University Press, NY

[107] Uncles, Mark, Andrew Ehrenberg and Kath Hammond (1995), "Patterns of Buyer Behavior: Regularities, Models and Extensions", *Marketing Science*, 14(3), 71-79.

[108] Morrison D. and D. Schmittlein (1999), "Generalising the NBD Model for Customer Purchases: What are the Implications and is it Worth the Effort", *Journal of Business and Economic Statistics*, 6(12), 145-159.

As explained by Mizerski, Miller, Mizerski and Lam[109], the NBD was initially introduced by Greenwood and Yule (1920) in terms of the incidence of reoccurring diseases and accidents. In consumer research, the NBD has been applied to study purchase incidence for the total product category or for a single brand. Applying the NBD to data from past behaviour provides estimates of future penetration of population use, and estimates of usage by groups (e.g., nonusers, heavy and light users) over time[110]. This model is typically quite accurate[111], and can be more accurate than using cognitive data[112] to explain and predict future purchase behaviour.

Studies have shown the NBD fits gambling consumption[113,114], leading to the inference that gambling consumption is no different in terms of purchasing patterns, than the vast majority of consumer goods.

In 2006 Lam and Mizerski applied The Commission's1999 data to the NBD and the Dirchlet. The results are in the table below, and the description of their method follows:

> "At the product/game level, the data on **aggregate penetration** and **average frequency of play/purchase** in the population were input into and NBD model in order to derive an expected distribution of play of the game. This distribution was then compared with the observed distribution using simple correlation".

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[109] Dick Mizerski, Rohan Miller, Katherine Mizerski & Desmond Lam *(2004)"*The Stochastic Nature of Purchasing a State's Lottery Products, *"Australasian Marketing Journal 12 (3), 2004*

[110] East, Robert, 1997. Consumer Behaviour. Prentice-Hall, UK.

[111] Morrison, D. and Schmittlein, D., 1988. Generalizing the NBD model for customer purchases: What are the implications and is it worth the effort? Journal of Business and Economic Statistics, 6 (12) 145-59.

[112] Ehrenberg, Andrew .S.C., Goodhardt, G. and Barwick, T.P. (1990). Double jeopardy revisited. Journal of Marketing 54 (July), 82-91.

[113] Bill Jolley, Richard Mizerski, Doina Olaru, 2006, "How habit and satisfaction affects player retention for online gambling" *Journal of Business Research*, *Volume 59, Issue 6*, *June 2006*, *Pages 770-777*

[114] Dick Mizerski, Rohan Miller, Katherine Mizerski & Desmond Lam *(2004)"*The Stochastic Nature of Purchasing a State's Lottery Products, *"Australasian Marketing Journal 12 (3), 2004*

Table 2: Observed Distribution versus NBD-Derived (Expected) Distribution of use of Buyers

Australia Productivity Commission		
Product	Sample Size	Correlation (r) ^
Lotto	6,368	0.25
Instant	4,603	0.56
Electronic Gaming Machin	3,780	0.81
Horse	2,362	0.9
Keno	1,573	0.86
TableGames	803	0.94
Sports	588	0.72
Bingo	480	0.69

^ p<.05

On the metrics modelled from The Commissions study using the NBD, it can be argued that EGM consumption approximates typical patterns of consumption. Indeed, the NBD offers a high and significant level correlation for EGMS.

It is clear that few acts of consumption occur without at least some people experiencing negative affects (e.g., eating, shopping, watching TV, driving cars). Gambling may reasonably be included as act of consumption with some negative affects for a small proportion of consumers. However, the present stream of gambling research does little to advance knowledge about the causality of negative consumption effects or how gambling may be used to moderate other problems (i.e. the self-medication effects).

If the trends shown in gambling prevalence studies are to be believed at any level, claims of gambling related problems throughout Australia continue to decline. Consistent with the theory of product lifecycle, as a product category matures consumers and society gain experience with the positive and negative aspects of that categories consumption.

EGM play may be characterised through the exchange of money for a consumption or hedonic experience. It is common knowledge that long run expected values of EGM play are exclusively negative and that most of the

money spent on this form of hedonic consumption is by people who have played and generally lost in the past[115]. Over time, consumers adapt to the consumption experience by protecting themselves from the potential adversities associated with gambling[116]. This process is known as social learning.

It has been more than a decade since The Commission's first report into gambling. The decline in prevalence levels shown in many gambling studies reflects effective social learning has occurred

7.5 Methodological Flaws = No Usable Evidence

As outlined throughout this report, there are substantive issues with much of the gambling research in Australia. In our opinion, The Commission has not afforded sufficient critical review of the studies nor have they taken into account the considerable methodological shortcomings in these research reports and papers. It would appear as though The Commission has engaged in reporting bias that predominately focuses on EGMs and problems, rather than the growing body of research arguing there are problems with many of the gambling studies.

Much of the commissioned gambling research has delivered more of the same in terms of tone and innuendo. The methods often follow the path laid-down by The Commission and it would seem too little attention has been paid to the short-comings in some of the self-report methods.

One general observation about several of those later studies is that they draw obvious guidance from The Commission's 1999 Report. However, as outlined

[115] Barr, Graham D. I. and Ian N. Durbach (2008), "A Monte Carlo Analysis of Hypothetical Multi-line Slot Machine Play," *International Gambling Studies*, 8(3) December, 265-280.

[116] Shaffer, Howard J, Hall, Matthew N, Bilt, Joni Vander (1999), "Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Research Synthesis", American Journal of Public Health, 89(9) September, pp 1369-1376

elsewhere, these studies typically only find low numbers of "problem gamblers" in their sample and undertake no statistical testing. Thus, these results are very unreliable. A comparison of unreliable samples and methods does not amount to triangulation, merely repeating the same mistakes.

At the least, ***The Commission should draw attention to <u>the number of respondents</u> in each class of "at risk" and "problem gambling". By doing so would enable readers to formulate opinions as to the reliability of the studies cited.*** Hence, n=22 or n=27 would be very small and unreliable samples from which to infer facts that can be applied across entire jurisdictions and further. In the interests of clarity, objectivity and fair disclosure, if The Commission is to draw from studies such as the SACE 2007 Tasmanian study or the CGR's 2003 Victorian study, then it would be fair and objective to disclose the sample sizes with a disclaimer similar to the following:

> "by increasing sample size, smaller and smaller effects will be found to be statistically significant until at very large sample sizes almost any effect is significant" (Hair, Anderson, Tatham and Black 1998, p12).

Many gambling studies do not bother with the notion of statistical significance. It is perturbing that government funded research adopts standards lower than the overwhelming majority of peer rated variables in established psychology and consumer behaviour journals (although, this report is very critical of the logic and data published by one comparatively new peer reviewed gambling journal).

One side effect of small sample sizes is that the number of respondents and effective statistical power are reduced even further when filters are applied. Thus, dissecting n=27 by gender may halve the sample, then breaking down

by age or some other factor makes the sample very small. This problem in gambling studies was recognised by Ferris and Wynne (2001):

> One of the issues in establishing predictive validity is the very low base rate of problem gambling in the population, which means that very large samples are necessary to obtain acceptable levels of accuracy. The difficulties with error margin, and with predicting trends as a result of the low prevalence of problem gambling in the population, can be addressed only by ensuring adequate sample size, and by ensuring that the measure used has good reliability.

For example, the Centre for Gambling Research (2004) claim (p24):

> "Thirteen per cent of Victorian problem gamblers prefer casino gambling, significantly lower than EGMs and below the average for gambling overall. Betting on horse or greyhound races or a sporting event was the third favourite type of gambling among problem gamblers (8.8 per cent)."

As they base their problem gambling levels on the obsolete SOGS, it is our opinion that the number of respondents who were SOGS5+ problem gamblers was n=27. In effect, claims are being made about "significance" without statistical tests being specified, and likely the racing and sporting levels are only based on 3 or 4 people. If the true "story" of real numbers was disclosed along with any statistical testing (however the number of SOGS respondents will be very small), then the average reader has an opportunity to make a judgement call about the veracity of the claims made. In our view readers are denied this opportunity and the use of percentages seem misleading in this report.

Another major issue with the 2003 Victorian report is that it spends a considerable amount of effort only investigating two variables (one form of gambling and problem gambling). It is our belief this under-specifies the analysis and theoretical model and it becomes highly likely that the researchers will "miss" many other important relationships. It may also mean that relationships are identified when they are not really significant relationships in a more appropriate or fuller model.

It is well recognised that the SOGS measures used in The Commission's 1999 Gambling report leads to erroneous outcomes, are widely volatile and typically overstate levels of alleged problem gambling. Thus, there is little to suggest this estimate reflects the changes in the gambling marketing place over the last ten years and is at all accurate.

7.6 Self Report Gambling Expenditure

The extant literature confirms the unreliability of self-report gambling expenditure. Williams and Wood (2005) document self-reported gaming expenditures are 2.1 times higher than actual revenues and reported gambling expenditures to actual revenue varied from a low of 0.77 to a high of 4.2. Gamblers in Washington State reported losses two to ten times higher than actual government gambling revenues (Volberg et. al. 1998).

Moreover, the estimates in Caraniche's Table 5.10 should be treated with some scepticism. It is these estimates that Livingstone and Woolley use as the bases for their calculation alleging "problem or at-risk gamblers spent about 53% (AU$1.3 billion) of the money expended on hotel and club EGMs in 2005–06 in Victoria" and The Commission also seems to use these data in their anonymous estimates of gambling expenditure.

The Commission undertakes an interesting juggling act with "evidence". On one hand we're told "the data is simply not reliable enough to support such comparisons" (B.12); yet, somehow these data are appropriate for policy recommendations. Further, the Commission opines a lack of transparency in gambling studies and limited or no data sharing; yet, refuses to disclose the studies it is using (and their limitations) to rate the spending share in various jurisdictions.

The Commission also seeks to imply that because some studies find expenditure understated (e.g. ABS Household Expenditure Survey), then the

flaws are likely to cancel each other out. We believe it merely makes the data less reliable for use in policy.

7.7 Reconsidering Risky Business

The Commission's 2009 Draft Report still seem to regard the paper and principles laid down by Livingstone Charles and Richard Woolley (2007), "Risky Business: A Few Provocations on the Regulation of Electronic Gaming Machines", International Gambling Studies, Vol. 7, No. 3, 361–376, December as providing some support to their 1999 research and 40% claim.

In our opinion, for the reasons detailed below, the claims that are made in the 2007 paper are mere speculations devoid of credibility.

The *2003 Victorian Longitudinal Community Attitudes Survey* is used by Livingstone and Woolley to justify their estimate of the number of problem gamblers in Victoria. It is interesting to note that The Centre for Gambling Research (CGR) (p.172-173) acknowledge there are different factors that may impact their sample being inconsistent to the population including; potential sampling errors and self selection bias, imperfections in the sampling frame, only one household member being interviewed and a very low overall response rate of 34.2%, which is regarded as much lower than other Australian prevalence studies (c.f., SACES 2008, Vol 1. p. xii). However, Livingstone and Woolley do not mention are any limitations or shortcomings of the CRG's research that may have implications for the claims they make. Similarly, The Commission ignore these deficiencies in their support of Livingstone and Woolley's estimates.

Validity and Reliability of SOGS

Measurement validity is the degree to which a measure accurately represents what it is supposed to (Hair, Anderson, Tatham and Black 1998). By the time Livingstone and Woolley's paper was published in 2007, SOGS was widely

regarded as invalid for use in Australia (e.g. McMillan and Wenzel 2006, p186). It was known that SOGS generated a high proportion of false positives (e.g., Ladouceur, 2000; Abbott and Volberg 2000) as the "power to detect pathological gambling (positive predictive value) does not reach 90% until scores of 9 or higher or on the SOGS" (Gambino 2005). The only apparent empirical verification of SOGS with problem gamblers in Australia recommended a cut-off score of 10+, but acknowledged the cut-off score may be lowered to 7 and would likely capture 97% of problem gamblers (Dickerson et al, 1996). Even Caraniche comment[117] that "the CPGI is widely acknowledged to provide more meaningful insight into the nature and extent of problem gambling behaviour in the general population than studies that use the SOGS". The face and predictive validity of SOGS was known to be very poor at the time when Livingstone and Woolley authored their paper.

More reliable measures typically show a greater consistency than less reliable measures. The SOGS volatility is demonstrated by two prevalence studies that used SOGS in Victoria during 1999. *The 1999 Seventh Survey* undertaken in Victoria reported SOGS 5+ estimated problem gambling prevalence was at 0.8% of the adult population. In the same year, the Productivity Commission used SOGS to estimate problem gambling in Victoria to be 2.14%. Using an estimate of 3.4m adults in the state of Victoria as the reference point, the 1999 SOGS studies estimate that between 27,200 (0.08%) and 71,400 people (2.1%) may have gambling related problems. The variance between the two studies is over 260% (or 44,200 people) which suggest SOGS in Victoria is a very unreliable scale.

The "At Risk" Construct

The "at-risk" concept posits that "as gambling increases so does the incidence of harm" (Livingstone and Woolley, p364). However, the "at risk" construct has not been validated with reference to the American Psychiatric Association's

[117] Unfortunately the Caraniche Study does not have page numbers, so this reference can be located between Tables 3.11 and 3.12.

DSM measures and SOGS was not intended for precise measurement or to diagnose “at risk” over the telephone. Lesieur and Blume (1987) only use the term “at risk” in their Appendix 1(p.5) which states “Scores on the South Oaks Gambling Screen itself are determined by adding up the number of questions that show an “at risk” response”. Thus, this diagnostic tool only determines when respondents may be “at risk” of problem gambling rather than clearly define levels of pathology. The SOGS provides for validated categorisation at 0-2, 3-4. It merely states that “5 or more = probable pathological gambler”. Testing of SOGS occurred in a clinical environment rather than by a site or telephone interview. It was previously discussed the only attempt to empirically validate SOGS in Australia demonstrated the need for higher cut-off levels than 5+ due to a high proportion of false positives and that by 2007 SOGS . Thus, reducing the level of assessment to incorporate “at risk” levels at levels less than SOGS5 would seem exceptionally problematic and unreliable.

To test whether SOGS may be a predictor of “at risk” (and in the absence of any publicly available research that validates the “at risk” concept), Australia’s Productivity Commission’s 1999 self report gambling data was analysed using ordinal logistic regression of EGM frequency and cut-off points as defined by Winters, Stinchfield and Kim (1995; p.176). The analyses showed that increasing levels of EGM play frequency were not found to be statistically significant to levels of gambling. As expected, these results suggest the concept of “at risk” is invalid within the SOGS context.

Sampling

The CGR make conflicting claims about their sampling methods. Initially the CGR claim to use a “random sample of responses from 8,479 Victorian residents” (p167) but then reveal a selected sample approach whereby “regular gamblers were over-sampled providing reasonable numbers for analysis purposes……at the same time selecting only a proportion of non-gamblers *(1 in 3)* and non-regular gamblers *(1 in 6)* (p168, italics added).

*R*egular gamblers are somewhat randomly defined as those who gambled at least weekly or 52 times per year, in gambling activities other than lottery games or instant scratch tickets. This procedure was applied to make the survey more economical. The justification for omitting lotteries was linked to The Commission's 1999 decision and, as argued elsewhere, is a complete mystery and completely inconsistent with recent research from Victoria.

Self-selection bias occurs when people who have strong opinions or substantial knowledge may be more willing to spend time answering a survey than those who don't (Churchill and Iacobucci, 2002). As EGM play in a mature market is mostly a low involvement act of repeat consumption (c.f., Lam and Mizerski 2009), it is likely "typical" slot players will be less inclined to participate in a gambling study than those obsessed with gambling or those who are strongly anti-gambling. Typically, self-selection bias causes measures of statistical significance to appear much stronger than they are, but it is also possible to cause completely illusory artefacts.

SOGS Cohort Sample Size

One the CGR's research objectives was to test three different methods of defining and measuring problem gambling. As shown in Table 1, both the Canadian Problem Gambling Index (CPGI) and Victorian Gambling Screen (VGS) resulted in lower estimates of problem gambling than the South Oaks Gambling Screen (SOGS).

Table 1 shows the prevalence rates claimed for each of the gambling screens and the total number of "problem gamblers" captured by this method (n=68, CGR 2004, p92). From these data it is possible to estimate the number of respondents classified as problem gamblers by each screen (VGS: n=18, CPGI: n= 23, **SOGS: n= 27**). As approximately 85% problem gamblers are reported to have spent more money on EGMs than other gambling products (**or 58 people from a sample of over 8,000**), the low effective statistical

power is further reduced if problem gambling is made product specific. On the information provided, is not possible to state whether the spread of problem gamblers preferring slots was proportionally higher in any of the gambling screens.

Table 3: Problem Gambling Comparison and Sample Sizes: 2003 Longitudinal Community Attitudes Survey

Problem Gambling Screens	Sample	Prev	n
Total: regular gamblers only	433		
Victorian Gambling Screen (VGS)	149	0.74%	18
Canadian Problem Gambling Index (CPGI)	141	0.97%	23
South Oaks Gambling Screen (SOGS)	143	1.12%	27
Number of “Problem Gamblers” in the sample			68

Neither the CGR or Livingstone and Woolley reveal that the actual number of respondents scoring SOGS 5+ in the CGR’s research was only n=27. Readers should reference the sections on this report that considers ethics to formulate their own opinion whether no-disclosure of this important information was ethical and best professional practice.

A cohort of n=27 from a total sample of 8,479 could reasonably be expected to be accompanied by a cautionary note that “by increasing sample size, smaller and smaller effects will be found to be statistically significant until at very large sample sizes almost any effect is significant” (Hair, Anderson, Tatham and Black 1998, p.12). To this end, results from a sample as large as 8,479 should be examined to ensure they have practical significance due to the increased statistical power from the sample size.

Ferris and Wynne (2001) comment that

> One of the issues in establishing predictive validity is the very low base rate of problem gambling in the population, which means that very large samples are necessary to obtain acceptable levels of accuracy. The difficulties with error margin, and with predicting trends as a result of the low prevalence of problem gambling in the population, can be addressed only by ensuring adequate sample size, and by ensuring that the measure used has good reliability.

Extreme doubt must exist that n=27 is a statistically reliable base from which to extrapolate levels of problem gambling prevalence in a general population of approximately 3.8m adults, let alone as a base for generalisations across other states and nations.

Specific Product Effects

As shown in the CRG's (p52.) Table 26, different categories of gambling consumer have been identified based on their propensity to consume more than one gambling product (**e.g., regular gamblers 3.43 gambling products; young people 18 and 24 years 2.62 gambling products**). The many types of gaming product consumed creates considerable ambiguity in any suggestion EGMs cause harm.

Moreover, it must be clarified there was no question asking about "favourite" gambling (this suggests some poetic license may have taken in attributing product categories as favourites by CGR). EGM gambling is inferred by applying a filter based "on which gambling activity have you spent the most money overall in the last 12 months" (CGR p91, 92). From this filter, the claim is made that "EGM gambling is favoured by around 85% of problem gamblers (CGR 2004, p. 97)". In our opinion, this description is not correct and misleads readers.

Table 26: On which gambling activity have you spent the most money overall in the last 12 months?

Gambling activity	All gamblers (%)	Regular gamblers (%)	Non-regular gamblers (%)
Playing poker machines or gaming machines	46.2	45.7	46.2
Betting on horse or greyhound races	38.0	38.6	37.9
Playing Club Keno at a Victorian club or hotel	0.9	.8	1.0
Playing Club Keno at the Crown Casino	0.3	.2	.4
Playing table games at Crown Casino	7.3	5.3	7.5
Betting on a sporting event	2.7	4.5	2.4
Other	2.2	4.1	1.9
Don't know / Can't say	2.5	0.8	2.7

Source: QM1. All gambling respondents: Weighted n = 906.

Conclusions about the CRG's SOGS Claims

Interpreting statistical inferences requires the specification of acceptable levels of statistical error (Hair, Anderson, Tatham and Black, 1998). Commenting specifically about gambling prevalence studies, Volberg et al. (1998) state confidence intervals should to be calculated to establish statistical rigour in gambling prevalence studies. However, the CGR does not estimate levels of error in their report or provide any evidence of statistical rigour in reporting their findings. Indeed, the CGR's statement of limitations cited above and this review of the CGR's methods reveals low levels of rigour in this study.

The low numbers of respondents for the SOGS screen means that the probability the alleged level of problem gambling reported occurred by "chance" cannot be ruled out, and it is not possible to "rule in" the stated levels of gambling prevalence did not occur by chance. The combination of the methodological identified that lead to the conclusion that levels of problem gambling in Victoria were 1.12% (based on SOGS rather than CPGI) and the Victorian Government's refusal to release these data to Harvestdata for testing and scrutiny suggests only very low levels of trust can place in this report. Thus, it is reasonable to believe that the CRG's *2003 Victorian Longitudinal Community Attitudes Survey* does not meet the epidemiological test for public health and intervention policy.

The Caraniche Study

Livingstone and Woolley take data from the 2005 Caraniche study *Evaluation of Electronic Gaming Machine Harm Minimisation Measures in Victoria* to establish various levels of gambling expenditure. This presumes Caraniche's the self report data about expenditure is accurate and suitable for inference across the Victorian population. Livingstone and Woolley make no disclosure of the flaws in this research. The Commission make little mention of the Caraniche study's flaws in their evaluation of criticism of this study.

"Opportunistic" Sampling Method

As discussed earlier, non-random sampling is useful to make descriptive comments about the *sample itself* but it is erroneous to draw conclusions about the population a non-random sample as it will likely be unrepresentative of the population. Caraniche sampled 418 people from eleven of Victoria's 510 gaming venues. **They described their methods (p75) as "opportunistic, particularly in relation to the sample of EGM players….. Hence, the findings are suggestive and not definitive". *The Commission should explicitly recognise this disclosure and these data should not be used for generalisations across a population.***

However, Caraniche claim that "The venue sample also was representative of a cross-section of Victorian gaming venues (as defined by the data held by the Victorian Commission for Gambling Regulation), based on population, the numbers of EGMs in the area/region, the average annual expenditure/revenue figures, and with regard to the varying socioeconomic profiles of regions" **but that "In reality, the final selection of venues was marginally determined by the willingness of the industry operators and their venues to participate in the study**"[118].

[118] As the Caraniche report has no page numbers, for a point of reference this comment was found near Table 4.2

Caraniche's claims that their venue sampling frame was a representative cross section of "the numbers of EGMs in the area/region, the average annual expenditure/revenue figures" can be evaluated by comparing the number of EGMs and the Expenditure for each category of their sample versus Victorian state averages. Table 4 shows the number of hotels and clubs in Victoria, and their rural and metropolitan categorisation. This reveals over sampling of metropolitan hotels compared to country hotels and all clubs.

Table 4: Location of Sample vs. Population

Location	Club	Hotel
Country	118	66
Metro	148	178
Population Total	**266**	**244**
Caraniche Sample Country	3	1
Caraniche Sample Metropolitan	2	5

The marketing principle of double jeopardy, supported by industry knowledge, recognises that larger venues have more players and more loyal players. Overrepresentation of gaming venues in any sample with disproportionably more EGMs than the market average will typically result in higher levels of expenditure per EGM and per person. Table 5 compares Caranche's club sample against Victorian state trends. This reveals the levels of annual expenditure for the Club sample exceeds the general population's average by 84%. Further, the number of EGMs in the Club sample exceeds the general population by 66%.

Table 5: Clubs EGM Expenditure and Numbers - Sample v Population Averages

	Location	$ Expend 05-06	EGM No.
ROYAL OAK - RICHMOND FOOTBALL CLUB	Metro	$4,765,832	80
SHEPPARTON RSL	Country	$5,033,717	80
TURFSIDE TABARET	Country	$5,432,571	75
GEELONG COMBINED LEAGUES CLUB	Country	$7,503,352	105
DANDENONG RSL	Metro	$5,387,782	65
Caraniche Club Sample Averages		**$5,624,651**	**81**
All Clubs Averages		**$3,053,744.15**	**48.81**

Table 6 provides a comparison of the hotels and reveals the average expenditure for the Victorian hotel sample exceeded the hotel population by 65% and that the average number of EGMS in the sample exceeded the average number of EGMs in the population by 75%.

Table 6: Pubs EGM Expenditure and Numbers - Sample v Population

		Expend 05-06	EGM No
ROSSTOWN HOTEL	Metro	$14,184,654	103
MANHATTAN HOTEL	Metro	$9,942,077	103
VILLAGE GREEN HOTEL	Metro	$13,709,283	103
WODONGA HOTEL (ELGINS)	Country	$5,707,799	80
HIGHPOINT TAVERNER	Metro	$8,307,250	86
EXCELSIOR HOTEL-MOTEL	Metro	$13,387,331	105
Caraniche Hotel Sample Averages		**$10,873,066**	**96.7**
All Hotels Averages		**$6,571,750**	**55.3**

These data show Caraniche's venue sampling frame is considerably larger in terms of expenditure and EGM numbers than the state averages. This reflects systematic selection bias in the Caraniche sample that is not representative of the overall population. Double jeopardy predicts that the venues in the Caraniche sample will have more gamblers spending more money on slots, more often, than the Victorian state average.

Respondent Selection

Caraniche claim they instituted protocols for respondent participation including "attendance at gaming venues during hours of peak patronage; varying the time of day-time/night-time and day of week; stressing the importance of the evaluation; highlighting the relevance of the respondent's participation; underlining the confidentiality of information provided by respondents; and, offering a shopping voucher as an incentive to participate".

It is a well known industry rule of thumb that more people frequent Clubs and Pubs on Friday nights and on Saturdays than at any other times in the week and these are the times when comparatively less loyal (in terms of visitation frequency and expenditure) consumers visit clubs and pubs. Support for this

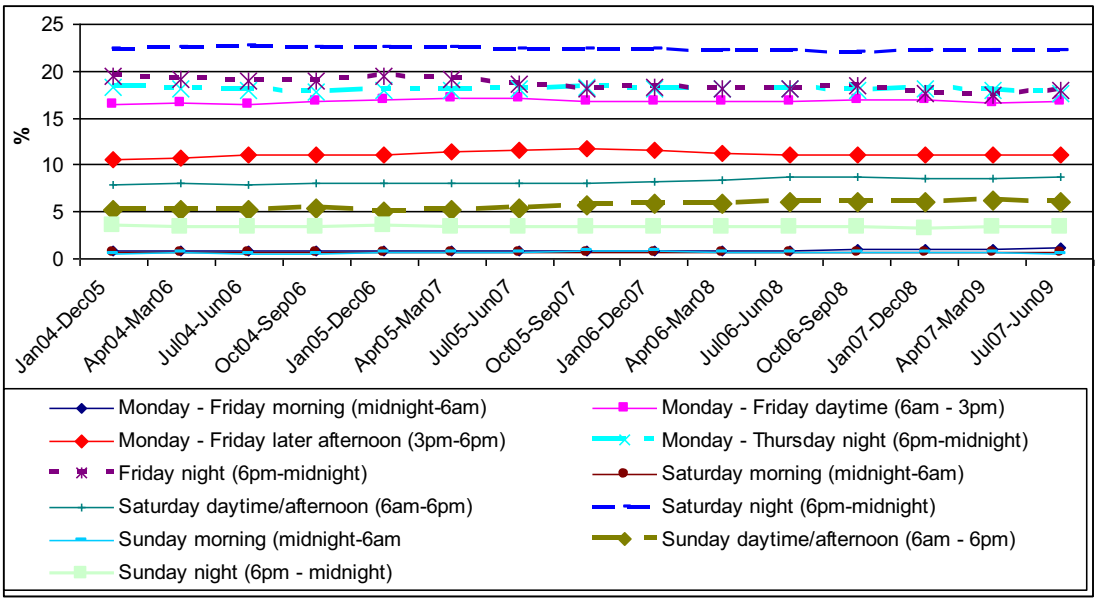
industry knowledge can be drawn from Roy Morgan Research (RMR) data for the metric Time of Day You Last Played Poker Machines. Figure 7 reveals a consistent trend between January 2004 and June 2009 that approximately 30% of people last played poker machines on a Saturday, over 20% last played on a Friday night and approximately 10% played on Sunday. By contrast, Caraniche's Table 4.5 shows that only 17% of their responses are from Friday and Saturday and no data was collected from Sunday players. Although the absence of raw data makes means that it is not possible to undertake any statistical testing, these data strongly suggest that Caraniche's sample is not randomised or suitably structured to be representative of EGM players.

In making these comparisons, two key differences between the Caraniche and RMR data must be noted. First, RMR ask about the last time you played. By comparison Caraniche expect people to be able to recall each purchase incident over twelve months and calculate an average ("In the last 12 months how often, on average"). Second, the RMR data is drawn from Australia wide compared to the state focus by Caraniche. These data show it is extremely unlikely that Caraniche succeed in their objective of minimising bias towards gaming venues and select venues with more EGMS and expenditures substantially higher than the state's average.

Table 4.5: *Days of the week on which EGM players were surveyed.*

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0	59	115	96	73	75	0

Figure 7 : Time of Day You Last Played Poker Machines (Australia)



(Sample for each period exceeds 4,000 people: Source RMR.)

The Risky Definition of "Spend"

The only question Caraniche ask respondents' to learn about gambling expenditure is question six, which is shown below. However, the methods section of the report does not specify how the data was collected (i.e., face to face, electronic kiosk or respondents being left a paper survey for self completion).

QUESTION 6: Thinking over the last 12 months, how much money, on average, would you spend per session playing poker machines? (Please provide single response only.)

$1-$20	$21-$50	$51-$100	$101-$150	$151-$200	$201-$500	$501-$1000	>$1000
1	2	3	4	5	6	7	8

Several points can be made about this question on gambling expenditure. First, consumer researchers have long been aware of the difficulty obtaining accurate estimates of self-report purchase behaviours. **Specific to gambling, it is recognised that self-reported gambling expenditure estimates are imprecise** as respondents can misunderstand the questions, misinterpret the instructions and there is no guarantee respondents will be honest even if they

do know their expenditures (Walker, 2007). Blaszczynski, Ladouceur, Goulet and Savard (2006) regard the question "how much do you spend gambling" as **ambiguous with multiple and different meanings**. In gambling parlance, spend can be interpreted as: stake, net losses, outlays, average bet (etc). In the absence of instructions estimating "expenditure" **half the sample uses net expenditure and the remainder use turnover** (Blaszczynski et. al., 2006). The CGR (p. 71) provide "**A note of caution is required when considering survey responses on gambling expenditure. Self reported expenditure data in gambling surveys have been consistently unreliable**, with little relationship to real expenditure levels as recorded by official sources"

Second, Caraniche's sixth question does not ask respondents about their last session or their current session of gambling or a direct question asking recall of a particular incidence. Rather, it is expected respondents be able to access long term memory to calculate new knowledge of their average their EGM "spend" for each session spent playing poker machines over a twelve month period. For most consumers playing EGM play is a repeat purchase activity that is characterised by low levels of cognitive involvement. Except in extreme cases, it is an insurmountable challenge to be able to accurately recall each EGM "spend" over a 12 month period and calculate an average. This challenge is exacerbated as participants were expected to provide over 110 responses in "approximately 25-30 minutes to complete" the EGM survey[119]. With reference to self recall expenditure data from prevalence studies, McCready and Adlaf conclude (p8) "there is considerable doubt about subjects' ability to accurately recall and estimate gambling frequency, duration and spending….causing a significant number to consider data unreliable".

Further confounding the accurate recall of EGM spend are conjoint acts of experiential expenditure made by respondents during visits to venues. These acts of consumption that may include alcohol (a product category not

[119] Taken from just below Table 4.5

conducive for accurate recall: e.g. how many drinks and how often, what was the price of drinks etc), food purchases (e.g. dinner, snacks), cigarettes or cigars bought as well as money spent on other entertainment costs (e.g. cover-prices for bands, juke boxes, pool tables, video games) and any number of other-things (e.g. cab fares, parking, raffles, charity donations).

McCready and Adlaf (2006) suggest that gamblers have problems remembering the amount spent over any period of time. Repeat purchase gambling consumption implies slot machine play is a low cognitive involvement or habitual paradigm that can be predicted by the Negative Binomial Distribution model pioneered by Ehrenberg (c.f., Lam and Mizerski, 2008). The existence of prior learning or knowledge, that accurate and unmodified memories have been stored, and these memories are readily accessible and constant over time, and that recall is either consistent between individuals or can be controlled or accounted for are important for the accuracy of self report data (Jacoby, 1978).It is highly unlikely that respondents will be able to recall all of their slot purchase incidents and amounts in a precise 12 month period.

In the absence of existing knowledge, readily available recall or difficult recall memories, respondents are likely to create responses to meet the researchers' needs. There is a significant tendency for recency effects, which is typically manifest by respondents selecting the last choice read to them in surveys (Bishop, 1990; Walonick, 1993; Mullner, Levy, Byre and Matthews 1982). This would suggest bias towards heavier expenditure per session for poker machine play (see Caraniche's Question 6). Moreover, respondents may be more likely to recall incidents of higher numerical expenditure and extrapolate these over a twelve month period, resulting in inflated estimates of gambling expenditure over a twelve month period.

The final observation about Caraniche's Question 6 is that it only provides respondents with space to nominate their "average spend" by category. The results from Question 6 are published in Table 5.25 of the Caraniche report:

Table 5.25: *Average expenditure of gamblers per session playing EGMs.*

$1-$20	$21-$50	$51-$100	$101-$150	$151-$200	$201-$500	$501-$1000
111	120	102	37	30	16	2
26.6%	28.7%	24.4%	8.9%	7.2%	3.8%	0.5%

It is perplexing that Caraniche extend reporting of estimated gambling expenditure to 'average per session expenditure across different classes of EGM player'. For example, Table 5.10 (see below) shows non-problem gamblers spend $35.85 each week on EGMs. There is no disclosure how these estimates were obtained. An enquiry has been made to Caraniche to clarify this point of contention and an unsuccessful request was made to the Victorian government for the study's dataset. However, the lead researchers no longer work with Caraniche. Correspondence with Caraniche resulted in mere speculate that the measures may have been some sort of semi-logarithmic scale. However, there is no mention of log-based scales anywhere in the Caraniche report and the use of this scale is unusual in gambling research.

We note The Commission agreed with ACIL's submission in 1999 that "medians would be an inappropriate basis for calculating the total expenditure". Demonstrating the need for The Commission to read, evaluate and heed the limitations other studies, it must be noted that Caraniche utilised a median estimate from each of the categories of estimated expenditure in their 2004 study.

This section has outlined some of the issues pertaining to the self-recall of gambling expenditure. The extant literature confirms the unreliability of self-report gambling expenditure. Williams and Wood (2005) document self-reported gaming expenditures are 2.1 times higher than actual revenues and reported gambling expenditures to actual revenue varied from a low of 0.77 to

a high of 4.2. Gamblers in Washington State reported losses two to ten times higher than actual government gambling revenues (Volberg et al 1998). It is concluded the estimates in Table 5.10 should be treated with some scepticism. It is these estimates that Livingstone and Woolley use as the bases for their calculation alleging "problem or at-risk gamblers spent about 53% (AU$1.3 billion) of the money expended on hotel and club EGMs in 2005–06 in Victoria".

Table 5.10: *EGM players' frequencies for gambling factors by score on the Canadian Problem Gambling Index.*

Indicator	Non-problem Gambling	Low-risk Gambling	Moderate-risk Gambling	Problem Gambling
Frequencies of gamblers	130 31.1%	69 16.5%	106 25.4%	113 27.0%
Time spent gambling (minutes)	103.57	108.41	146.93	175.18
Time spent in other activities (minutes)	132.04	100.67	70.41	57.49
Frequency of gambling	1.98	2.13	3.35	4.34
Number of smokers	39 19.2%	35 17.2%	54 26.6%	75 36.9%
Fagerstrom Dependence Scale Score	2.41	2.40	2.81	3.35
Age (years)	51.45	50.67	46.01	40.48
Male / Female	49 / 80 26.3% / 34.6%	23 / 46 12.4% / 19.9%	56 / 50 30.1% / 21.6%	58 / 55 31.2% / 23.8%
Expenditure	$35.85	$56.52	$76.32	$103.41
ATM visits	0.33	0.45	1.30	1.86

Caraniche's Definition of Problem Gambling

Caraniche use the CPGI to define problem gamblers for their study. The CPGI is designed a stand-alone scale and the 9-items assessing levels of problem gambling are to be administered first. However, it is now used in Australian epidemiology where no reliability or validity testing on these measures has taken place.

The CPGI is not without criticism. In their review of the CPGI, McCready and Adlaf comment that (p23) "our understanding of gambling problems is so underdeveloped that no gambling instrument, including the CPGI, can be considered valid. They ask how we can measure something we don't understand." Moreover, it has been reported that Canadian research suggests that the CPGI may give rise to false positives in community samples (SACES 2005) and may only be culturally appropriate for English speaking Canadians.

SOGS Incompatibility with CPGI

Caraniche do not collect any data using the SOGS scales and provide reasonable justification for the use of CPGI rather than SOGS in their report. Without any justification or explanation, Livingstone and Woolley (2007) match problem gambling levels from the CGR's SOGS findings with Caraniche's CPGI expenditure levels is conceptually inappropriate and neglects to recognise the fundamental difference in the two scales. The CGR's clear warning of comparing other studies with theirs:

> *"The survey methodology utilised in this particular study differs in a number of ways from previous Victorian community attitude surveys. Thus direct comparability is problematic. Caution is advised when comparing the results of these different surveys."*

McMillen and Wenzel (2006; 147) comment that "different theories or societal conceptions of problem gambling can produce different screening tools, thus generating different empirical findings about the prevalence of the problem". This is reflected in the CGR's findings in (Figure 1) that show the CPGI estimates problem gambling prevalence at 0.97% while SOGS estimates problem gambling prevalence at 1.12% (though both estimates are based on very few respondents n=23 and n=27 respectively suggesting little practical or statistical power in the results). As data existed for CPGI for both studies, and as it was clear SOGS was widely considered inaccurate for Australia, it is ponderous why Livingstone and Woolley chose to compare the chalk and cheese of SOGS and CPGI results.

The Risks of Not Observing Research Limitations

An insurmountable problem with the Livingstone and Woolley paper is that it ignores that both the Caraniche and CGR research has serious methodological problems. Having taken a long and hard look at these studies, it is clear the estimate calculated by Livingstone and Woolley is erroneous. We disagree any evidence is applicable to policy – the claims being made by Livingstone and Woolley are based on some very poor research that is then

used for some overly simplified calculations that ignore the rules of basic statistics. It is of concern this research was ever considered a touch-point by The Commission.

Livingstone and Woolley (2007) advocate change to the present gambling laws being justified by a Millean-type principle of preventing harm to others. However, if “epidemiology is the bedrock on which advocacy should rest” (Chapman 2001, 1227) then epidemiology used for advocacy must be also be recognised as statistically rigorous and reliable as “advocacy that is ethical must never promote claims that are known to be incorrect” (Chapman 2001, 1229).

As stated earlier, reminiscent to The Commission’s approach “triangulating” data, Livingstone and Woolley insist that these two Victorian studies corroborate with other research. However, these claims seems symptomatic with “advocacy” pieces where “they fail to cite any literature that disagrees with their perspective” Walker (2007, p.615). Much of the research cited by Livingstone and Woolley is rooted in advocacy and suffers from the characteristic that “research on the effects of gambling involved empirical estimates based on questionable methodologies” during the 1990s (p615).

Many researchers who have examined the efficacy of gambling studies are disappointed at the objectivity of gambling research (Grinols and Mustard 2001). Many gambling studies disclose “conceptual and methodological flaws that are sufficiently serious to call the resulting estimates into question” Volberg et al (1998, 360). By seeking to “present data in ways that are resonant and memorable to often inexpert target audience” (Chapman 2001, 1229), Livingstone and Woolley draw from two epidemiological studies with acknowledged flaws and limitations without any regard as to the real veracity of their claims.

Banks (2009 p1) attributes the quote that “laws are like sausages: it’s better not to see them being made” to Otto von Bismarck. He also claims the

Australian Prime Minister says “evidence-based policy making is at the heart of being a reformist government” (p3).

Blaszczynski, Ladouceur and Shaffer (2004) claim that most gambling policy recommendations are not based on empirical data. Whether this is true or otherwise, it is clear that relying on self report data in gambling studies is a risky business. Moreover, the limitations of self report data must be clearly stated. More broadly though, it reveals that all sides have a place in this debate and that it is never advisable to dive into muddy waters without considering the depth of the water and what may lie beneath.

8. Response to Draft Finding 4.6

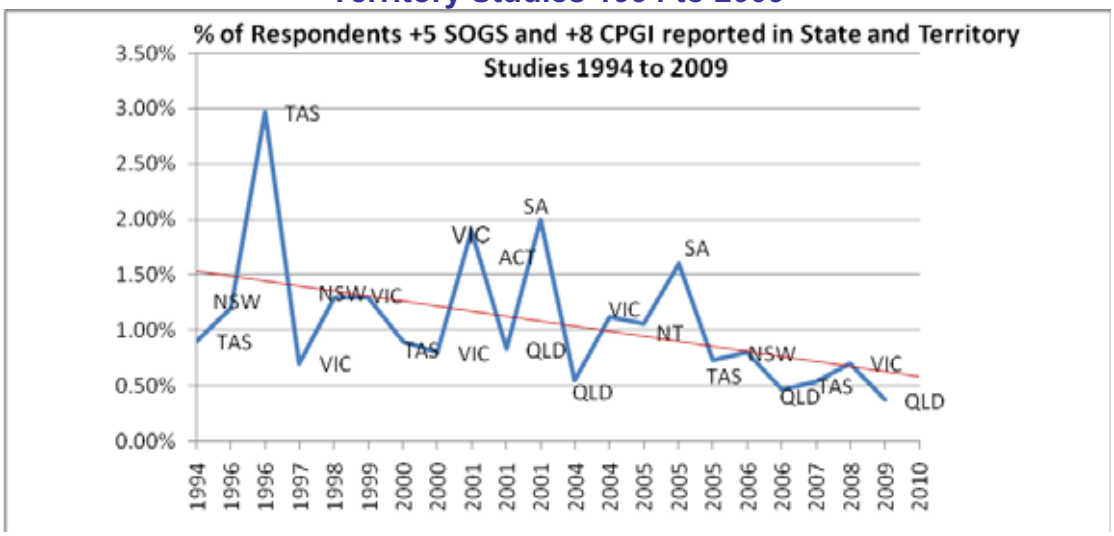
The Productivity Commission state:

While far from certain, problem gambling prevalence rates appear to have fallen somewhat. It is unclear how much this reflects natural adaptation or the impact of government policy, though both are likely to have contributed: adult population prevalence rates can be misleading about the extent of problem gambling — the key concern is the proportion of regular gamblers who have problems.

8.1 The Evidence Problem Gambling has Declined

As presented throughout this report and based on the available data; problem gambling prevalence has fallen in a clear and sustained manner. This trend is clearly affirmed by the release of problem gambling statistics released after The Commission's Draft Report. The last six prevalence studies in Australia place problem gambling prevalence well under the 1% mark, and in two of the last four studies, have fallen to less than 0.5% level. The trend is "certain".

Figure 8: Percentage Change in +5 SOGS and +8 CPGI State and Territory Studies 1994 to 2009



Theory suggests that natural adaptation and societal learning are likely to have played a large role in the ongoing decline in problem gambling prevalence.

In terms of the early benchmarks, it is also very possible that many of the earlier gambling studies were very poor in their design, implementation and analyses, and this artificially inflated their stated level of problem gambling. SOGS had poor validity for the Australian population (e.g. there was 200%+ variance between two gambling studies in 1999 in Victoria). This submission has reviewed a number of studies in depth and concludes they are erroneous and with misleading conclusions.

The research that has taken place in Australia does not make it possible to ascertain if there has been any trigger to this decline through policy decisions. The Commission acknowledges that some of the policy measures introduced (e.g. clocks and windows) are unlikely to have had any meaningful effect. This observation seems very reasonable with hindsight, but several years ago there was considerable passion to drive these changes to policy. At the time, these changes were all well intentioned: the outcome was unnecessary cost and legislation.

Policy makers and The Commission can learn from this experience with regulated change motivated by emotion rather than fact and properly evaluate evidence and theory before seeking future legislative changes to gambling.

Any modelling or evaluation of the future impacts or social costs alleged to be associated with EGM gambling by The Commission must incorporate a sustained downward trend in problem gambling prevalence rates. It must also be recognised there are many other factors likely to be at play (e.g. they gamble on other forms of gambling, other members of the household gamble, they gamble to escape other problems).

The inclusion of the “at risk” group will artificially inflate claimed levels of social cost. It is our opinion that The Commission fails to justify this methodological change.

Nonetheless, the data does reveal a sustained downward trend for the “at risk” group. This downward trend suggests any policy intervention based on “at risk” is not justified, will be a cost burden, and will merely be “unnecessary regulation”.

There is no evidence to suggest The Commission’s proposed policy solutions changes will have any additional impact on the downward trends for alleged problem gamblers and those supposed to be “at risk”.

The obvious policy conclusion for The Commission to recommendation is the instigation of a “watching brief” to reconsider the evidence at a later time before deciding whether another in-depth review of gambling is warranted. Given the present trends, recommending any “new” policies would seem unnecessary.

9. Appendices

9.1 Lack of Transparency in the Gambling Debate

The first point to note is that The Commission states it provides:

- independent analysis and advice
- diversity of views of those who contribute to our work
- intellectual integrity and commitment of Commissioners and staff.

There is no doubt this submission dissents from the dominant moral paradigm. In doing so, it draws from an extensive range of published literature, working papers and available data. Consistent with The Commission's values and charter, The Commission should provide transparent responses to this dissenting viewpoint, and particularly some of the criticisms of The Commission's 1999 Report and the 2009 Draft Gambling Report.

We agree with Livingstone and Woolley (2007, p371) that decision making by government should be "transparent in their reasoning, ethically defensible and subject to revision as reality unfolds". We also concur with Canada's National Institutes of Health who express the view that:

> "Data should be made as widely and freely available as possible while safeguarding the privacy of participants and protecting confidential and proprietary data"[120]

Data-sharing and transparency in research must become principle foundations in the evidence base in gaming research. What do government bodies who commission gambling research have to hide who do not share data?

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[120] Cited by McCready, John and Edward Adlaf (2006), *Performance Enhancement of the Canadian Problem Gambling Index (CGPI): Report and Recommendations*, Health Horizons Consulting for Canadian Centre on Substance Abuse, p26.

We formally request that The Commission publish all workings and theory pertaining to their analyses. In our view, the “back-of-the-envelope” analyses do not fit with The Commission’s standards and values. We cast reasonable doubt on the veracity of these analyses and request more information.

As an act of principle, The Commission should not utilise data or consider research findings from studies that are not freely available to industry stakeholders. To do otherwise will mean The Commission has “do as I say, not as I do” standards.

The Commission must only draw from third party research and be influenced by submissions that meet stringent ethical standards. This includes the provision of technical information necessary to assure the validity of the results and the sample sizes are sound for high levels of confidence (e.g. 99.9%) and low levels of error (e.g. 1%) as would be expected in large sample surveys.

9.2 The Concerns about the Quality of Gambling Research

A growing and substantial body of literature has been published raising doubt about the quality of gambling studies. Thus, while this submission casts doubt on the veracity of research methods, analysis and reporting of many Australian studies, a growing number of published studies are also revealing poor quality research relating to gambling.

In short, concerns have been documented about:

- The validity and reliability of applying clinical measures outside their intended purpose[121,122]
- The low response rates in most surveys[123]
- A lack of sophistication in the design and analyses of many studies that make inferences about problem gambling from generalized sampling[124].
- An external validity problem as many problem gambling studies fail to take into account the frequent and significant real world phenomena of comorbidity[125,126]
- Survey fatigue: GRP suggest there is **"survey fatigue"** in the Victorian population, and this will further undermine how representative the sample is, and may suggest acquiescent biases are present in order to "speed-up" lengthy surveys.
- Inconsistent data: The 1999 Seventh Survey which reported SOGS 5+ of 0.8% for Victoria, was substantially lower than the PC's Victorian statistic for the same period of 2.14%.

Providing further documentation of flaws, Stucki and Rihs-Middel[127] reviewed 33 prevalence studies between 2000 and 2005 and identified:

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[121] Wiebe, J., E. Single, and A. Falkowski-Ham (2001), *Measuring Gambling and Problem Gambling in Ontario*. Responsible Gambling Council, http://www.responsiblegambling.org [downloaded 6 August 2007].

[122] Stinchfield, Randy (2002), "Reliability, Validity and Classification Accuracy of the South Oaks Gambling Screen (SOGS)," *Addictive Behaviors*, 27, 1-19.

[123] Abbott, Max, Rachel A. Volberg and Sten Ronnberg (2004), "Comparing the New Zealand and Swedish National Surveys of Gambling and Problem Gambling, *Journal of Gambling Studies*, 20 Fall, 237-258.

[124] Abbott, Max, Rachel A. Volberg and Sten Ronnberg (2004), "Comparing the New Zealand and Swedish National Surveys of Gambling and Problem Gambling, *Journal of Gambling Studies*, 20 Fall, 237-258.

[125] Nathan, Peter E. (2005), "Methodological Problems in Research on Treatments for Pathological Gambling," *Journal of Gambling Studies*, 21 (Spring), 111-116.

[126] Kearney, Melissa Schettini (2005), "The Economic Winners and Losers of Legalized Gambling," *National Tax Journal*, LVIII (June), 281-302.

[127] Stucki, Stephanie and Margret Rihs-Middel (2007), "*Prevalence of Adult Problem and Pathological Gambling between 2000 and 2005: An Update*," Journal of Gambling Studies, 23, 245-257.

- Varying time frames (e.g., reported behaviour may be in the gambler's lifetime, past year, or last month) making comparisons difficult,
- A lack of accessibility of studies which may suggest publication bias,
- Selection bias (as more women are at home),
- Sampling bias in excluding various groups,
- The redundancy of conventional telephone networks among some people.

Another study revealed that Maryland's gambling study used:

- Incorrect sampling,
- Inferences drawn from small numbers of probable pathological (n=11) and problem gamblers (n=18),
- Flaws with the analytical techniques used,
- The existence of other potential confounds that may lead to over-estimates of compulsive gambling[128].

Replication of methods does not imply accuracy. In the case of most gambling research, replication implies publication bias and systematic flaws. Flaws in gambling studies are clearly apparent in Australia. These flaws would have seriously impacted The Commission's original intention of undertaking a meta-analysis.

9.3 Flaws in Australian Gambling Research

This submission does not intend to review every gambling study in Australia. Rather cases have been used demonstrate the poor quality standards at play in gambling research in Australia. We have formed the opinion that many

[128] Yaffee, Robert A. and Robert M. Politzer (1990), *A Review of Prevalence Estimates,* Report for the Maryland Task Force on Gambling Addiction, http://www.nyu.edu/its/socsci/Docs/task_force_6.html [downloaded 7 April 2006)

Australian gambling studies typically demonstrate poor research practices and are unsuitable for evidence base policy. Reliance on studies such as the one's reviewed below can only result in flawed outcomes and inappropriate public policy. This Report also makes extensive reference to the *2003 Victorian Longitudinal Community Attitudes Survey* as another Australian gambling project that has extensive flaws.

9.3.1 Case One: Tasmania's 2008 Study

One case examines the June 2008 Social and Economic Impact Study into Gambling in Tasmania[129]. A number of issues have been identified in this research that suggests substantial error that includes (but is not restricted to):

- Ethically tenuous claims pertaining to levels of statistical significance without revealing or discussing the analysis[130],
- Misleading respondents about the length of time the responses would take (another ethical issue) thereby artificially increasing very low rates of response (that probably resulted in respondent bias)
- A lack of transparency about claims made in the study and no co-operation by the Government and researchers to verify the claims (including denying access to data),
- A very limited and poor quality review of the literature that results in the study's conceptual framework being myopic (evidence of publication bias),
- A lack of justification for the conceptualization, development and testing for validity and reliability of the items they use in the Tasmanian report (see Ferris and Wynne's 2001 development of CPGI as a contrast).

[129] The Productivity Commission may contact The Gaming Technologies Association for a full copy of this report by Harvestdata.

[130] According to the Australian Social and Market Research Code of Conduct: "Researchers must not knowingly allow the dissemination of conclusions from a market research project that are not adequately supported by the data. They must always be prepared to make available the technical information necessary to assess the validity of any published findings."

  - This is particularly relevant as cultural differences is acknowledged to be of concern with the CPGI and it is clear that Australian and Canadian cultures are different,

- The unexplained and perceptible imbalance in the treatment of submissions (particularly the treatment of industry submissions which were often qualified, whereas submissions from social organisations appear to be accepted without any critical review),
- An assumption of causality between gaming and problems: however this was not established in the study (and no reference was made to any study that has empirically established causality between gambling and problems),
- Failure to account for pre-existing co-morbidity and mental health issues among respondents that would distort the results (this was an obvious issue with submissions made by other stakeholders),
- Unjustified assumptions leading to the inflation of costs in the economic model,
- A poorly conceptualised economic model in which many of the economic test results were not reported and a number of assumptions made in the model not explained adequately, if at all,
- Economic analysis that do not appear to be rigorous, suggesting the regression model is most likely miss-specified,
- Miss-specification and claims that the CPGI was used (when only 9 of the 31 items were used)
- Poor survey design with the problem gambling items preceded by leading questions (in stark contrast to the published CPGI study) that likely resulted in negative attitudes pertaining to gambling becoming overstated and levels of problems associated with gambling being inflated (a priming effect outlined in later sections).
- The addition of questions that were irrelevant to the terms of reference

- The likely existence of self selection bias as approximately 60 percent of those contacted for this research refused to co-operate.
- Too small a sample for meaningful policy inferences to be drawn: only **n=22 problem gamblers are identified by the screening tool used**.

9.3.2 Case Two: Australian Institute for Primary Care

The other recent Australian study reviewed was from Australian Institute for Primary Care on behalf of the Independent Gaming Authority of South Australia that was undertaken by Livingstone, Woolley, Zazryn, Bakacs and Shami. In their review of this study, Nower and Blaszczynski observed that:

- The cross-sectional methodology used was insufficient to support the assumptions (including causality) of the authors
    - Moreover, it was not possible to quantify the number or proportion of problem gamblers in a gaming venue and correlate this proportion with gaming machine features
- The telephone survey (that presents its own limitations) used a very small sample (n=180) from a highly skewed cross-sectional convenience sample: that was clearly non-representative,
- Erroneous assumptions were made regarding gaming machine play
- Issues with the assumptions of expenditure attributed to problem gamblers, and unsupported use of the “regular” to mean fortnightly
- Definitional issues relating to problem gamblers

Many of flaws identified in these two Australian studies are commonly found in other Australian studies. For example, the 2003 Victorian Longitudinal Community Attitudes Survey not only contained many of the issues described above but was debilitated by multiple and conflicting objectives[131] and poor project planning that meant budgets were insufficient to generate the number

[131] For example, McMillan and Wenzel’s development of the VGS.

of positive responses required for any meaningful (statistical) interpretation of the data.

Interestingly enough, but relevant to The Commission who originally intended undertaking a meta-analysis in 2009, the GRP[132] (p.112) note that because different methods and measures have been used in various studies to collect prevalence data, only limited comparisons can be made with other studies:

> "Comparisons with the Productivity Commission and ACT survey findings are limited because these surveys did not ask questions on many of the correlates investigated in this Victorian survey. Comparisons with the *Queensland Household Gambling Survey* are also limited because that survey used only the CPGI and different sampling procedures."

However, there are many other issues within this study that undermine the validity and reliability of the Victorian 2003 study. It is also quite interesting to have study titled "longitudinal" when only one time period is considered.

Gambling prevalence data-sets are generally drawn from very large samples (such as The Commission's 1998 study). As statistical significance is a probabilistic statement it is important to set stringent levels of significance for large datasets. Some top blind refereed journals limit reports of significance to 0.001, and at times only allow values of .0001 or greater to be reported in order to help avoid overvaluation of small effects that can only be found in large datasets. As gambling prevalence screens indicate only very small numbers of respondents have high enough scores on screens to be declared at risk or possibly suffering a problem, then it is imperative that high levels of confidence are used in these studies. This is especially the case as policy should not be derived from loose or inaccurate research.

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[132] Gambling Research Panel (2004), *2003 Victorian Longitudinal Community Attitudes Survey*.

It is recommended that failure to publish appropriate statistical tests should exclude studies from the studies being considered by The Commission[133].

It is unusual to read details of statistical testing methods or levels of statistical significance applied to gambler and non-gambler comparisons, or between respondents with SOGS5+ scores and those without a SOGS rating. Similarly, it is rare to read reports of statistical significance in any study that alleges high SOGS and behavioural variable such as expenditure and frequency of play. By not testing and reporting whether or not differences were significantly different, researchers are not explicitly monitoring whether or not a statistic has occurred by "chance".

As "chance" cannot be ruled out, it is not possible to express any confidence there is any relationship between two variables.

Taking "Depressed" as an example, Table 78 shows there were n=40 respondents to this question from the total sample. No statistical tests were undertaken. How does n=40 from an overall sample of several thousand manage to qualify within the statement "Problem gamblers are most likely to have the following characteristics"?

Similarly, n=25 have a history of gambling, and somehow qualify in the statement that "Problem gamblers are most likely to have the following characteristics"?

Serious questions need to be asked about the funding of research that makes these sorts of claims. It also follows that policy informed and formulated based

[133] According to the Australian Social and Market Research Code of Conduct:

"Researchers must not knowingly allow the dissemination of conclusions from a market research project that are not adequately supported by the data. They must always be prepared to make available the technical information necessary to assess the validity of any published findings

on such low numbers of responses and poor quality analysis should be discarded.

Table 78: Correlates of problem gambling: problem gamblers by age and gender

Statements	Male %(n)	Female %(n)	18–24 %(n)	25–34 %(n)	35–49 %(n)	50–64 %(n)	65+ %(n)
In the last 12 months, have you gambled while under the influence of alcohol or legal or illegal drugs?	53.7 (22)	29.6 (8)	50.0 (2)	58.3 (7)	47.8 (11)	32.0 (8)	40.0 (2)
In the last 12 months, have you been under doctor's care because of physical or emotional problems brought on by stress?	21.4 (9)	34.6 (9)	0.0 (0)	16.7 (2)	26.1 (6)	40.0 (10)	20.0 (1)
In the last 12 months, have you felt seriously depressed?	59.5 (25)	57.7 (15)	75.0 (3)	83.3 (10)	47.8 (11)	60.0 (15)	25.0 (1)
Have you seriously thought about or attempted suicide as a result of your gambling?	9.8 (4)	14.8 (4)	0.0 (0)	8.3 (1)	4.3 (1)	24.0 (6)	0.0 (0)
In the last 12 months, have you wanted help for problems related to your gambling?	51.2 (21)	57.7 (15)	25.0 (1)	66.7 (8)	65.2 (15)	40.0 (10)	50.0 (2)
Have you sought assistance from any source for other problems? (collapsed multiple responses)	15.0 (6)	38.5 (10)	25.0 (1)	33.3 (4)	19.0 (4)	20.0 (5)	25.0 (1)
Has anyone in your immediate family ever had a gambling problem?	41.5 (17)	30.8 (8)	50.0 (2)	50.0 (2)	50.0 (11)	28.0 (7)	0.0 (0)
In the last 12 months, if something painful happened in your life, did you have the urge to gamble?	33.3 (14)	57.7 (15)	25.0 (1)	50.0 (6)	47.8 (11)	44.0 (11)	0.0 (0)

Source: QH1, QH17, QG6-QCO4. Problem gamblers. Weighted n = 68. Firm conclusions cannot be drawn from this table because of small sample sizes.

9.4 Overview of Past Prevalence Studies

Name of Study	Year	Commissioned by	Screening Tool	Researchers	Survey Instrument	Actual Sample	Prevalence	Total EGM expenditure (in Millions)	EGMs	Regular Gamblers	Non Regular Gamblers	Problem Gamblers <5 /<8
ACT												
Survey and the Nature and Extent of Gambling and Problem Gambling in the ACT	2001	The ACT Gambling and Racing Commission	South Oaks Gambling Screen (SOGS)	Australian Institute for Gambling Research	questionnaire	2,011	1.90%	192.306	38.1%	432	851	38
New South Wales												
Study 2 - An Examination of the Socio-economic Effects of Gambling on Individuals, Families and the Community, including Research into the Costs of Problem Gambling in NSW	1996	The Casino Community Development Fund	South Oaks Gambling Screen (SOGS)	Australian Institute for Gambling Research	Questionnaire (not provided) 12 SOGS questions	1,390	1.25%	3,062.35		525	588	82
A repeat of Study 2 - An Examination of the Socio-economic Effects of Gambling on Individuals, Families and the Community, including Research into the Costs of Problem Gambling in NSW	1998	The Casino Community Development Fund and the Department of Gaming and Racing	South Oaks Gambling Screen (SOGS)	Australian Institute for Gambling Research	Questionnaire (not provided) 13SOGS questions	1,209	1.30%	3,769.60	34.0%	459	423	30
Prevalence of Gambling and Problem Gambling in NSW - a Community Survey 2006	2006	NSW Office of Liquor, Gaming and Racing, Department of the Arts, Sports and Recreation	Canadian Problem Gambling Index (CPGI)	AC Neilson	96-item questionnaire	5,026	0.80%	5,023.55	31.0%	324	802	111
Northern Territory												
Northern Territory Gambling Prevalence Study	2005	Community Benefit Fund	Canadian Problem Gambling Index (CPGI) and South Oaks Gambling Screen (SOGS)	Charles Darwin University	20-item SOCS) and 9-item (CPGI)	1,873	1.06%	191.105	27.0%	369	1217	54
Queensland												
Queensland Household Gambling Survey 2001	2001	Queensland Department of Treasury and Department of Corrective Services	Canadian Problem Gambling Index (CPGI)	Office of the Government Statistician	115-item questionnaire	16,537	0.83%	2,714.66	48.0%	1475	12072	137
Queensland Household Gambling Survey 2003-04	2004	Queensland Treasury	Canadian Problem Gambling Index (CPGI)	Office of the Government Statistician	115-item questionnaire	30,000	0.55%	2,421.89	32.2%	2190	21600	165
Queensland Household Gambling Survey 2006-07	2006	Queensland Treasury	Canadian Problem Gambling Index (CPGI)	Office of the Government Statistician	122-item questionnaire	29,923	0.47%	2,472.45	30.0%	2250	20190	141
South Australia												
Gambling Prevalence Study in South Australia	2001	Department of Families and Communities and South Australian Independent Gaming Authority	South Oaks Gambling Screen (SOGS)	Population Research and Outcome Studies Unit of the South Australian Department of Health	142-item questionnaire	6,045	2.00%	623.545	36.4%	333	4117	120
Gambling Prevalence Study in South Australia	2005	Department of Families and Communities and South Australian Independent Gaming Authority	Canadian Problem Gambling Index (CPGI)	Population Research and Outcome Studies Unit of the South Australian Department of Health	142-item questionnaire	17,140	1.60%	773.215	30.2%	2486	9310	67
Tasmania												
Social and Economic Impact Study into Gambling in Tasmania	1994	Tasmania Department of Health and Human Services	South Oaks Gambling Screen (SOGS)	Australian Institute of Gambling Research and Roy Morgan	questionnaire	1,220	0.90%	0	27.0%	295	878	11
Social and Economic Impact Study into Gambling in Tasmania	1996	Tasmania Department of Health and Human Services	South Oaks Gambling Screen (SOGS)	Australian Institute of Gambling Research and Roy Morgan	questionnaire	1,211	2.97%	0	32.0%	192	1078	36
Social and Economic Impact Study into Gambling in Tasmania	2000	Tasmania Department of Health and Human Services	South Oaks Gambling Screen (SOGS)	Roy Morgan	questionnaire	1,233	0.90%	73.892	27.0%	313	1012	11
Social and Economic Impact Study into Gambling in Tasmania	2005	Tasmania Department of Health and Human Services	Canadian Problem Gambling Index (CPGI) and South Oaks Gambling Screen (SOGS)	Roy Morgan	questionnaire	6,048	0.73%	129.735	29.0%	328	3479	42
Social and Economic Impact Study into Gambling in Tasmania	2007	Tas Department of Treasury and Finance	Canadian Problem Gambling Index (CPGI)	South Australian Centre for Economic Studies	120-questionnaire	4,051	0.64%	n/a	28.5%	304	2904	22
Victoria												
Survey of Community Gambling Patterns	1992	Victorian Gaming Authority	none used		Not provided	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Second Survey of Community Gambling Patterns	1994	Victorian Gaming Authority	none used		Not provided	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Third Survey of Community Gambling Patterns	1995	Victorian Casino and Gaming Authority	none used		Not provided	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fourth Survey of Community Gambling Patterns	1996	Victorian Casino and Gaming Authority	none used		Not provided	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fifth Survey of Community Gambling Patterns and Perceptions Combined With Second Positive And Negative Perceptions Of Gambling Survey	1997	Victorian Casino and Gaming Authority	South Oaks Gambling Screen (SOGS)	Market Solutions	51-item questionnaire	1,712	0.70%	1,835.56			1473	11
Sixth Survey of Community Gambling Patterns and Perceptions	1999	Victorian Casino and Gaming Authority	South Oaks Gambling Screen (SOGS)	Roy Morgan	51-item questionnaire	1,737	1.30%	2,432.61	30.0%	225	1083	26
Seventh Survey of Community Gambling Patterns and Perceptions	2000	Victorian Casino and Gaming Authority	South Oaks Gambling Screen (SOGS)	Roy Morgan	51-item questionnaire	1,760	0.80%	2,639.13		209	1212	12
2003 Victorian Longitudinal Community Attitude Survey	2004	Victorian Government and Community Support Fund	VGS	The Centre for Gambling Research, Australian National University	21 - item questionnaire	1,758	1.12%	2,421.89	33.5%	433	717	68

9.5 Requests for Data

Requests for access to data sets were made to the following State and Territory authorities:

- Mr Ross Kennedy, Executive Director - Gaming and Racing, Office of Gaming and Racing, Department of Justice, Victorian Government for 2003 Victorian Longitudinal Community Attitudes Survey on Gambling data set.
- The Hon. Tony Robinson MP, Minister for Gaming, Consumer Affairs and Minister Assisting the Premier on Veterans' Affairs for 2003 Victorian Longitudinal Community Attitudes Survey on Gambling data set.
- Mr Michael Foggo, Commissioner, NSW Office of Liquor, Gaming and Racing, Sydney for the Prevalence of Gambling and Problem Gambling in NSW - a Community Survey 2006 data set.
- The Hon. Kevin Greene MP, Minister for Gaming and Racing, Minister for Sport and Recreation, NSW Government for the Prevalence of Gambling and Problem Gambling in NSW - a Community Survey 2006 data set.
- Mr Mike Sarquis, Executive Director, Office of Liquor, Gaming and Racing, Queensland Government, for access to the data set for the Queensland Household Gambling Survey 2001, the Queensland Household Gambling Survey 2003-04 and the Queensland Household Gambling Survey 2006-07.
- Mr Peter Crossman, Government Statistician, Executive Director of the Office of Economic and Statistical Research, Government Statistician, Queensland Government for access to the data set for the Queensland Household Gambling Survey 2001, the Queensland Household Gambling Survey 2003-04 and the Queensland Household Gambling Survey 2006-07.
- The Hon. Andrew Fraser MP, Treasurer, Queensland Government, for access to the data set for the Queensland Household Gambling Survey 2001, the Queensland Household Gambling Survey 2003-04 and the Queensland Household Gambling Survey 2006-07.
- Ms Joslene Mazel, Chief Executive, Department of Families and Communities, South Australia for access to the data set for the Gambling Prevalence Study in South Australia in 2001 and 2005.
- Ms Robyn Power, Executive Officer, Northern Territory Licensing Commission for access to Northern Territory Gambling Prevalence Study 2005.
- Hon Konstantine Vatskalis MLA, Minister for Health, Minister for Primary Industry, Fisheries and Resources, Minister for Racing, Gaming and Licensing, Minister for Alcohol Policy Commission for access to Northern Territory Gambling Prevalence Study 2005.
- Mr Greg Jones, Chief Executive, ACT Gambling and Racing Commission for access to the data set for the Survey and the Nature and Extent of Gambling and Problem Gambling in the ACT in 2001.