The Relationship between Expectancies, Choice and Gambling Behaviour

Mal Flack

A thesis submitted to
The Faculty of Engineering, Health, Science and Environment
for fulfilment of the requirements for the degree
Doctor of Philosophy
EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR

Declaration

I hereby declare that the work herein, now submitted as a thesis for the degree of Doctor of Philosophy of the Charles Darwin University, is the result of my own investigations, and all references to ideas and work of other researchers have been specifically acknowledged. I hereby certify that the work embodied in this thesis has not already been accepted in substance for any degree, and is not being currently submitted in candidature for any other degree.

Signed:

Date:
Acknowledgments

There are several people who have helped make this dissertation possible. All of whom have been a support and a source of inspiration in different ways.

First of all, I would like to thank Dr. Mary Morris for her encouragement and reassurance over the years. Mary has many endearing qualities, but one that always shines through is her ability to make things seem possible. I have had the privilege of being one of Mary’s students since my first year as an undergraduate student. Mary continues to inspire and draw the best out of people and I certainly owe Mary a debt of gratitude in that regard. Thank you Mary for your tireless help, belief in me and guidance whilst I’ve been on this journey.

Dr. Martin Young has also been a valued supporter. Martin’s assistance in the earlier stages of my thesis enabled me to setup a series of studies that have stayed on track - from practical help with ensuring sufficient funding to complete the data collection, through to the opportunities given to explain my work. Through Martin’s efforts, I have had the opportunity to present my work to a diverse group of stakeholders which has helped me solidify and clarify my thinking. Also, I wish to thank the others from the former CDU gambling research unit for their feedback, encouragement and input over the years. In particular, Matt Stevens, who has sat through several of my presentations and provided helpful advice.

Last, but certainly not least, I would like to express my gratitude to my wonderful family. My wife, Niki, has always encouraged and supported me in my endeavours. This last project has lasted a little longer than most and I truly appreciated Niki’s unwavering love and reassurance. Without it, this dissertation would have not been possible. Also, to my two beautiful children, Anthony and Mickala, their understanding that dad has not always been on the planet because of his “PhD” has been priceless.
Abstract

The aim of the current series of studies was to examine the efficacy of gambling motivations, assessed in terms of gambling related beliefs (e.g., gambling outcome expectancies, normative beliefs, and cognitive biases), in predicting and explaining gambling behaviour. To achieve this, a 3-wave longitudinal community-based survey was employed. In the first study (n = 2,033), the role of economic, emotion, and social gambling outcome expectancies in gambling behaviour were examined. The findings revealed the economic, emotion, and social aspects uniquely predicted gambling frequency, whereas only the emotion oriented dimensions of gambling outcome expectancies (excitement, escape, and ego enhancement) were related to gambling problems. These findings were further examined in Wave 2 (n = 870) by testing the comparative predictive ability of gambling outcome expectancies, normative beliefs, and cognitive biases using the Theory of Planned Behaviour (TPB, Ajzen & Madden, 1985). In general, the results supported the efficacy of the TPB with normative beliefs and cognitive biases contributing to the explanation of gambling frequency via gambling intentions. One of the notable findings was the role of perceived social influences (normative beliefs) in determining gambling intentions for low risk and at-risk gamblers. The unique influence of the Wave 2 measures of excitement and ego enhancement on gambling frequency underscored the role of emotion oriented motivations in gambling behaviour. In the final study (n = 495), the ability of the same constructs to predict changes in gambling risk status were examined. One of the major findings was that low risk gamblers who transitioned to an increased level of risk 2 years later scored significantly higher on the emotion dimensions of motivations at Wave 1 than those who remained at low risk. Taken together, the findings indicate that emotional reasons for gambling play an important role in sustained gambling behaviour. The implications for these findings are discussed within the context of a gambling harm minimisation framework.
# Table of Contents

Chapter One .................................................................................................................. 1

1.1 Introduction ................................................................................................................ 1

1.2 Structure of Thesis ...................................................................................................... 2

Chapter Two Gambling, Problem Gambling and the Minimisation of Gambling Related Harms ..................................................................................................................... 6

2.1 Chapter Overview ........................................................................................................ 6

2.2 Gambling Activities, Involvement and Impacts ............................................................ 7

2.3 Conceptualising, Measuring and Identifying Problem Gambling ................................. 10

2.3.1 Pathological gambling: A medical model view of problem gambling .................... 10

2.3.2 Gambling problems: A public health view ................................................................. 12

2.3.3 Differentiating gambling problems from problem gambling .................................... 13

2.3.4 Assessment of problem gambling and gambling problems ....................................... 14

2.3.5 Prevalence and patterns of problem gambling ......................................................... 19

2.3.6 Section summary ..................................................................................................... 20

2.4 Minimising Gambling Related Harms ........................................................................ 21

2.4.1 The public health approach ..................................................................................... 22

2.4.2 Gambling harm minimisation .................................................................................. 23

2.4.3 Educational initiatives ............................................................................................ 25

2.4.4 Section summary ..................................................................................................... 27

2.5 Reasons for Gambling ............................................................................................... 28

2.5.1 General community members’ views and reasons for gambling .............................. 28
2.5.2 Ethnographic research

2.5.3 Problem gamblers experiences

2.5.4 Section summary

2.6 Chapter Summary

Chapter Three Gambling Theories, Motivations and Behaviour

3.1 Overview of Chapter: Identifying Salient Gambling Motivations

3.2 Gambling as a Mood Modifier

3.3 Gambling and Excitement

3.3.1 Excitement and gambling behaviour

3.3.2 Arousal and winning

3.3.3 The impact of arousal on gambling behaviours

3.3.4 Section summary for gambling and excitement

3.4 Gambling and Escape

3.4.1 Research employing direct measures of escape

3.4.2 Summary of escape

3.5 Gambling as a Money Making Pursuit: Section Overview

3.5.1 Cognitive biases as a differentiating variable

3.5.2 Cognitive biases and knowledge of statistics

3.5.3 Section summary for cognitive biases

3.6 Chapter Summary

3.7 Purpose and Objective of Ensuing Studies
Chapter Four Assessing Gambling Motivations: Developing the Gambling Outcome Expectancy Scale (Study 1A) .......................................................................................................................... 79

4.1 Introduction .................................................................................................................................. 79

4.2 The Measurement of Gambling Motivations .............................................................................. 79

4.2.1 Theoretically constructed scales ......................................................................................... 80

4.2.2 Adaption of scales from other domains .............................................................................. 82

4.2.3 Consumer experience ........................................................................................................... 85

4.3 Comparison of The Gambling Motivation Scales ...................................................................... 92

4.3.1 Convergence of motivation types ....................................................................................... 92

4.3.2 Measurement of gambling motivations .............................................................................. 94

4.3.3 Scale specificity and dimensionality ............................................................................... 97

4.4 Chapter Summary and Hypotheses .......................................................................................... 100

4.5 Methods ...................................................................................................................................... 102

4.5.1 Participants ......................................................................................................................... 102

4.5.2 Measures ............................................................................................................................. 105

4.5.2.1 Development of the Gambling Outcome Expectancy Scale ........................................ 105

4.5.2.2 Gambling behaviour and sample characteristics .......................................................... 108

4.5.2.3 Base line measures and variables introduced in subsequent studies ........................................ 110

4.5.3 Procedure ............................................................................................................................ 110

4.6 Results ....................................................................................................................................... 112

4.6.1 Testing the factor structure of Gambling Outcome Expectancy Scale ............................... 112

4.6.2 Preliminary data screening and data preparation ............................................................... 112
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6.3 Exploratory factor analysis</td>
<td>112</td>
</tr>
<tr>
<td>4.6.4 Confirmatory Factor Analyses</td>
<td>115</td>
</tr>
<tr>
<td>4.6.5 Factor discriminant validity</td>
<td>121</td>
</tr>
<tr>
<td>4.7 Summary of Results</td>
<td>122</td>
</tr>
<tr>
<td>Chapter Five The Relationship between Gambling Motivations and Gambling Behaviour (Study 1B)</td>
<td>123</td>
</tr>
<tr>
<td>5.1 Chapter Overview</td>
<td>123</td>
</tr>
<tr>
<td>5.2 Non-Monetary Gambling Motivation and Gambling Behaviour</td>
<td>124</td>
</tr>
<tr>
<td>5.3 Comparisons of Monetary and Non-Monetary Gambling Motivation</td>
<td>127</td>
</tr>
<tr>
<td>5.4 Conclusions and Hypothesis</td>
<td>135</td>
</tr>
<tr>
<td>5.5 Methods</td>
<td>137</td>
</tr>
<tr>
<td>5.6 Results</td>
<td>137</td>
</tr>
<tr>
<td>5.6.2 Correlations between GOES and gambling behaviour</td>
<td>137</td>
</tr>
<tr>
<td>5.6.3 Relative explanatory utility</td>
<td>139</td>
</tr>
<tr>
<td>5.6.4 Group difference</td>
<td>140</td>
</tr>
<tr>
<td>5.6.5 Within group differences</td>
<td>142</td>
</tr>
<tr>
<td>5.7 Discussion</td>
<td>144</td>
</tr>
<tr>
<td>5.8 Criterion Validity</td>
<td>144</td>
</tr>
<tr>
<td>5.9 Explanatory Utility of GOES Dimensions</td>
<td>147</td>
</tr>
<tr>
<td>5.10 Differences Between Frequent and Problems Gamblers</td>
<td>149</td>
</tr>
<tr>
<td>5.11 Practical Importance</td>
<td>151</td>
</tr>
</tbody>
</table>
5.12 Limitations and Conclusions

Chapter Six Predicting Gambling Frequency: The Role of Gambling Outcome Expectancies, Normative Beliefs and Perceptions of Control (Study 2)  

6.1 Introduction

6.2 Theoretical Framework: An Overview of the Theory of Planned Behaviour

6.2.1 Intention

6.2.2 Explaining intention

6.2.3 Extension of the TRA: The Theory of Planned Behaviour

6.3 Gambling Research with the TRA and TPB

6.4 The Current Study and Hypotheses

6.5 Methods

6.5.1 Participants

6.5.2 Measures

6.5.2.1 Baseline measures

6.5.2.2 Repeated measures

6.5.2.3 Modification to the survey instrument from Wave 1

6.5.3 Procedure

6.6 Results

6.6.1 Data preparation and descriptive statistics

6.6.2 Assessment of GOES stability

6.6.3 Hypothesis testing

6.6.4 Post hoc analyses
6.7 Discussion ........................................................................................................................................193

6.7.1 Sample characteristics and GOES temporal properties .................................................. 193

6.7.2 Explaining gambling intentions and predicting gambling frequency ...... 195

6.7.3 The TPB and contemporaneous beliefs by gambling risk status ............ 198

6.7.4 Conclusions and future research ......................................................................................... 200

Chapter Seven The Predictive Versus The Explanatory Utility Of the Belief-Based Constructs (Study 3) ........................................................................................................................................ 202

7.1 Introduction ..................................................................................................................................202

7.2 Methods .........................................................................................................................................205

7.2.1 Participants ...............................................................................................................................205

7.2.2 Measures ..................................................................................................................................207

7.2.3 Procedure ..................................................................................................................................208

7.3 Results ..........................................................................................................................................209

7.4 Respondents’ Self-expressed reasons for change in gambling behaviour ....210

7.5 Predicting and Explaining Wave 3 Problem Gambling .....................................................214

7.5.1 Predictors of gambling frequency and gambling problem.......................... 214

7.5.2 Prediction of change in gambling frequency and problem gambling scores ........................................................................................................................................ 216

7.5.3 Explaining change in gambling frequency and gambling problems....... 216

7.5.4 Summary of hypotheses testing ............................................................................................... 218

7.6 Examining the Role of Gambling Related Beliefs by Risk Status ....................223

7.6.1 Wave 1 low risk group............................................................................................................. 223
7.6.1.1 Between group comparisons ........................................................... 224
7.6.1.2 Within group comparisons ........................................................... 226
7.6.2 Wave 1 moderate risk group ............................................................... 229
7.6.2.1 Between group comparisons ........................................................... 229
7.6.2.2 Within group comparisons ........................................................... 231
7.6.3. Wave 1 problem gambling ............................................................... 233
7.6.3.1 Between group comparisons ........................................................... 233
7.6.3.2 Within group comparisons ........................................................... 235
7.6 Discussion ............................................................................................. 239

7.7 Sample Characteristics ........................................................................ 239

7.8 Predicting Gambling Problems ............................................................ 240

7.9 An Alternative Model: Explaining Gambling Problems ....................... 241

7.10 Similarities and Differences across Risk Cohorts ................................ 243
  7.10.1 Wave 1 low risk gamblers ............................................................... 243
  7.10.2 Wave 1 moderate risk gamblers ....................................................... 245
  7.10.3 Wave 1 problem gamblers ............................................................... 247

7.11 Comparisons of Findings and Implications ........................................... 248

7.12 Limitation, Future Research and Conclusions ..................................... 251

Chapter Eight: General Discussion ........................................................... 254

8.1 Chapter Overview .................................................................................. 254

8.2 Key Findings From The 3-Wave Longitudinal Study ............................ 255
8.2.1 Gambling motivations and gambling behaviour (Study 1) .................. 255
8.2.2 Predicting gambling frequency (Study 2): ....................................... 257
8.2.3 Predicting and explaining gambling problems (Study 3) ................. 259

8.3 Findings in Relation to Educational Initiatives ................................. 261

8.4 Conclusions ................................................................................. 264

References ......................................................................................... 266

Appendix A ......................................................................................... 292
TABLE OF TABLES

Table 4.1 Summary of Studies that Include Constructs Reflecting Specific Types of Gambling Motivation ................................................................. 90

Table 4.2 Demographic Characteristics of Volunteer (n =428), Membership Panel (n = 1,683) and Combined Sample (N = 2,121) ................................................................. 103

Table 4.3 Rotated Pattern Matrix of the GOES ................................................................. 114

Table 4.4 Fit Indices for the 5-Item, One-Factor GOES Congeneric Models ........ 117

Table 4.5 Structure Coefficients of Final GOES ................................................................. 121

Table 5.1 Summary of Gambling Motivations Scales ................................................................. 132

Table 5.2 Correlations between GOES and Indices of Gambling Behaviour .... 138

Table 5.3 Regression Analyses Summary for Gambling Outcome Expectancies Predicting Gambling Frequency and Gambling Problems (n = 1,568) .............. 140

Table 5.4 Goes Means and Standard Deviations for Levels of Gambling Involvement .................................................................................................................. 141

Table 6.1 Wave 2 Respondents and Non-Respondents on Demographic Characteristics .................................................................................................................. 171

Table 6.2 Wave 2 Respondents and Non-Respondents on Gambling Behaviour and Problem Gambling .................................................................................................................. 172

Table 6.3 Correlations, Means, Standard Deviation and Reliability of Scales ........ 179

Table 6.4 GOES Confirmatory Factor Analyses Loadings at Wave 1 and Wave 2 182

Table 6.5 Summary of Fit Statistics for CFA (Wave 1 and Wave 2) and Fit Statistics for Testing Invariance of GOES .................................................................................................................. 183

Table 6.6 Hierarchical Multiple Regression Testing the Mediation Effect of Intention in Predicting Wave 2 Gambling Frequency ................................................................. 185

Table 6.7 Hierarchical Multiple Regression Testing the Effect of Wave 2 Belief-Based Constructs on Wave 2 Gambling Frequency ................................................................. 186
Table 6.8 Hierarchical Multiple Regression Predicting Wave 2 Gambling Frequency by Risk Status

Table 6.9 Fit Indices for Low Risk Gambling Model and At-Risk Gambling Model

Table 7.1 Comparison of Demographic Characteristics for Wave 3 Respondents and Non-Respondents

Table 7.2 Longitudinal prevalence of gambling problems (%)

Table 7.3 Mean, Standard Deviation and Reliability of Major Study Variables

Table 7.4 The Percentage of Respondents Reporting an Increase, No Change, or Decrease in the Time or Money Spent Gambling By Wave Number

Table 7.5 Reasons for Decreasing Level of Gambling Involvement (n = 269)

Table 7.6 Reasons for Increasing Level of Gambling Involvement (n = 67)

Table 7.7 Stability of Gambling Risk Level

Table 7.8 The Percentage of Wave 1 Low Risk Group Who Frequently Participated in Gambling Activities at Wave 1 by Change Status

Table 7.9 Wave 1 Low Risk Cohort by Change Status Baseline Belief-Based Measures

Table 7.10 Belief-Based Measures Means and Standard Deviations for Low Risk No-Change Group (n = 380) at Wave 1 and Wave 3

Table 7.11 Belief-Based Measures Means and Standard Deviations for Low Risk Increase Group (n = 29) at Wave 1 and Wave 3

Table 7.12 The Percentage of Wave 1 Moderate Risk Decrease Group Who Frequently Participated in Gambling Activities at Wave 1 and Wave 3 (n = 25)

Table 7.13 Wave 1 Problem Gambling Cohort by Change Status Baseline Belief-based Measures
EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR

Table 7.14 Belief-Based Measures Means and Standard Deviations for Problem Gambling No-Change Group (n = 17) at Wave 1 and Wave 3 .............................................. 236

Table 7.15 The Percentage of Wave 1 Problem Gambling Decrease-Risk Group Who Frequently Participated in Gambling Activities at Wave 3 ........................................... 237

Table 7.16 Belief-based measures Means and Standard Deviations for Wave 1 problem gambling change group (n = 13) ................................................................. 238
**TABLE OF FIGURES**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Flow chart of participants in 3-wave longitudinal survey.</td>
<td>5</td>
</tr>
<tr>
<td>2.1</td>
<td>The public health model of gambling related harms. Source: Korn and Shaffer (1999).</td>
<td>23</td>
</tr>
<tr>
<td>4.1</td>
<td>Gambling participation rate by activity and sample</td>
<td>104</td>
</tr>
<tr>
<td>4.2</td>
<td>The 5-item, one-factor GOES congeneric models</td>
<td>116</td>
</tr>
<tr>
<td>4.3</td>
<td>Five factor GOES measurement model</td>
<td>120</td>
</tr>
<tr>
<td>5.1</td>
<td>Means and standard errors of GOES dimensions by level of gambling involvement</td>
<td>142</td>
</tr>
<tr>
<td>6.1</td>
<td>The theory of planned behaviour</td>
<td>155</td>
</tr>
<tr>
<td>6.2</td>
<td>Gambling frequency predictive model</td>
<td>168</td>
</tr>
<tr>
<td>6.3</td>
<td>Extended model with Wave 2 belief-based constructs explain unplanned behaviour. Exogenous covariance paths are omitted to improve the model clarity.</td>
<td>169</td>
</tr>
<tr>
<td>6.4</td>
<td>Participation rate in each form of gambling activity by risk status.</td>
<td>187</td>
</tr>
<tr>
<td>6.5</td>
<td>Low risk gamblers path model (n = 632).</td>
<td>189</td>
</tr>
<tr>
<td>6.6</td>
<td>At-risk gamblers path model (n = 187).</td>
<td>190</td>
</tr>
<tr>
<td>7.1</td>
<td>Respondents’ Wave 1 risk profile by change status.</td>
<td>222</td>
</tr>
<tr>
<td>7.2</td>
<td>Unadjusted mean and standard errors of belief-based constructs by risk change status.</td>
<td>230</td>
</tr>
</tbody>
</table>
Chapter One
Chapter One

1.1 Introduction

Typically, the efforts directed towards quantifying the negative consequences of gambling focus on the assessment of the prevalence of pathological or problem gambling (Shaffer, LaBrie, LaPlante, Nelson, & Stanton, 2004). However, within Australia, New Zealand, and Canada there has been a shift towards viewing gambling from a public health perspective (Delfabbro & King, 2012; Productivity Commission, 2010). One of the differences with employing a public health approach to conceptualise and measure problematic gambling is that the impacts of gambling are assessed as they occur across the spectrum of involvement (Korn & Shaffer, 1999). This means gambling behaviour that is associated with negative outcomes, but fails to reach the criteria of problem gambling, is also considered as an important issue. Despite this shift in emphasis, many of the existing models and concepts employed to explain gambling are oriented towards understanding the aetiology of problem gambling. As a consequence, there are gaps in the understanding gambling that does not reach the extreme levels of involvement. This is of particular concern given there are at least twice as many Australians estimated to experience problems as a result of their gambling behaviour than those who meet the classification of problem gambling (Productivity Commission, 2010).

Although there is no agreed theoretical framework to explain non-problem gambling, there is an emerging body of research that explores the reasons people gamble at different levels of intensity. Further, this research indicates there is an array of factors that influence the reasons people decide to gamble. However, due to this research being relative recent, and from varied theoretical positions, it is unknown whether specific reasons for gambling are more important than others in explaining consumers’ gambling behaviours. This is troubling given one of the important areas in problem gambling prevention is the use of educational initiatives. Moreover, the provision of relevant information is reliant on an accurate assessment of people’s reasons for gambling. Interestingly, little research has been directed towards conceptualising and clarifying the salient influences on the choice to gamble and subsequent gambling behaviour.
In light of this, a three wave longitudinal study was designed to examine the influences on community members’ choice to engage in commercial gambling activities. In this way, the current research differs from much of the traditional psychological research in that it was not employed to test a causative model of problem gambling. Rather, the current series of studies were designed to assess the relationship between specific types of gambling motivation, identified in the gambling literature, and gambling behaviour, as assessed in terms of gambling frequency, and gambling problems (i.e., continuous measure of problem gambling). To achieve this, the current studies focussed on assessing gambling behaviour which spanned different points on the continuum of involvement - including those who gamble rarely or not at all, those who gamble often and through to those who continue to gamble in the face of successive and unsustainable losses. The overarching aim was to examine the temporal relationship between gambling motivations, as assessed using belief-based measures, and gambling behaviour. Nonetheless, each of the three studies was employed to test a specific set of propositions. An overview of the rationale for the different studies and an outline of the structure of the dissertation are provided as follows.

1.2 Structure of Thesis

Chapter Two provides an overview of gambling and highlights important issues relevant to the current series of studies. More specifically, after describing the major forms of gambling legally available to the adult population, some of the challenges inherent in the assessment of problem gambling and gambling problems are discussed. Notwithstanding the conceptual difficulties in the assessment of problem gambling, it is apparent that a significant number of consumers experience gambling related harms. It is also evident that problem gambling occurs across socio-demographic boundaries and is more pronounced as participation increases. Next, an overview of the central tenets of a public health approach provides insights into the rationale behind the initiatives employed to minimise gambling related harms. Finally, research that explores consumers’ reasons for gambling is reviewed. What emerges from the discussion is a potential misalignment between the approaches designed to minimise the risk of gambling related harms and the reasons gamblers’ report for gambling.
Chapter Three further explores the potential influence of different motivation factors. More specifically, the central tenets of selected gambling theories are used to explicate the characteristics of distinct types of gambling motivation before reviewing research that employs multidimensional motivation-type constructs. While the mechanisms and processes proposed to sustain gambling behaviour are typically represented in terms of explaining problem gambling, they nonetheless articulate the theoretical role of different types of motivation in gambling behaviour more generally. By drawing on this research, it becomes evident that a multidimensional view of gambling motivations provides one approach to extend the understanding of the influences involved in the initiation and maintenance of gambling behaviour.

The main goal of the first study was to clarify the nature of the relationship between different dimensions of gambling motivation and gambling behaviour. To achieve this, the first study was separated into two chapters. Chapter Four provides a review of the current gambling motivational scales and the rationale for the first study. More specifically, the purpose of Chapter Four is to identify motivational aspects pertinent to understanding both gambling frequency and problem gambling. The ensuing review revealed five commonly assessed aspects of gambling motivation. However, not one of the existing scales measured these five aspects. As a consequence, the Gambling Outcome Expectancy Scale (GOES) was purpose developed to measure these conceptually distinct dimensions of gambling motivation.

The second objective of the first study was to examine the relationship between gambling motivations, as assessed by gambling outcome expectancies, and gambling behaviour. Although the role of specific motivations is advanced in some of the existing studies, many do not account for financial expectancies. In fact, congruent with the premise of cognitive theories, one proposition is that beliefs about winning are the primary reason for continued gambling and that non-financial motivation only serve a secondary role. This idea and the notion that particular aspects of motivation operate differentially depending of the level of gambling involvement were examined in this chapter. Overall, the Wave 1 study provides the basis for the subsequent studies to further examine the influences of the emotion, social, and economic aspects of gambling motivation on gambling frequency and gambling problems with the belief-based gambling outcome expectancies scale.
The second study, reported in Chapter Six, examined the largely overlooked aspect of predictive utility. Namely, much of the existing research is conducted with cross-sectional studies and consequently cannot assess the associations between prior motivations and subsequent gambling behaviour. To this end, The Theory of Planned Behaviour (TPB; Ajzen & Madden, 1986) was employed as a conceptual framework to model the effects of prior gambling motivations, as assessed by the GOES, and gambling intentions on gambling frequency 12 months later. Also, consistent with the TPB, the role of gambling intentions was further scrutinised by including respondents’ perceptions of significant others approval of gambling and respondents’ confidence in their gambling skill and perceived abilities. Finally, one of the more innovative aspects of the study was the inclusion of the Wave 2 TPB constructs into the model to assess the relationship between changes in gambling related-beliefs measures and gambling frequency. In summary, this study is the first to examine the role of gambling motivation, perceived social influences and perception of personal gambling skill in predicting prospective gambling frequency.

Chapter Seven provides a more in depth view of the role of gambling outcome expectancies, social influences, and perceptions of skill and knowledge in gambling behaviour. Of particular interest was whether the “predictor” variables operate as risk, or conversely, as explanatory factors. Specifically, the assumption that emotional focussed motivations, namely excitement and escape, may predispose individuals to progress to riskier levels of gambling behaviour was examined. In contrast, the contention that gambling itself may be a risk factor, as evidenced by changes in motivation and associated belief-based measures, was also tested. Although these two positions are not necessary mutually exclusive, research to date has not allowed this differentiation to be examined.

In the final chapter, potential implications of the key findings from the three wave longitudinal study are discussed. Overall, the findings indicate there is utility in differentiating between dissimilar motivations, social influences, and perceptions of skill in terms of predicting and explaining gambling problems. Several suggestions are advanced on how the knowledge collected may assist informing pragmatic interventions at the different levels of gambling involvement as described in a public health framework. Figure 1.1 shows the design of the 3-Wave longitudinal survey.
Each of the studies depicted in the diagram are discussed in detail in their respective chapters.

Figure 1.1. Flow chart of participants in 3-wave longitudinal survey.
Chapter Two
Gambling, Problem Gambling and the Minimisation of Gambling Related Harms
Chapter Two
Gambling, Problem Gambling and the Minimisation of Gambling Related Harms

2.1 Chapter Overview

Gambling involves risking something of value on an event with an uncertain outcome (Korn & Shaffer, 1999). From this perspective, trading stocks, investing in property, or any other venture pursued to make a profit could qualify as “gambling”. However, there is one fundamental difference between regulated commercial gambling and other activities involving financial risk - consumers of gambling products should expect to lose money in the long term (Walker, 1992). More specifically, in all forms of commercial gambling, the odds are stacked against consumers in order to benefit the purveyor of the product. Thus, from an economic position, engaging in gambling is not economically rational. Despite this, the majority of the adult population participate in at least one form of gambling within a 12 month period (Productivity Commission, 2010). Indeed, gambling is such an integral part of Western society’s economic and social makeup that industry groups, governments and community groups all have vested interests in the sustainability and the impacts of gambling. As such, the focus of this dissertation is limited to exploring commercial or regulated gambling, rather than the range of activities that may be considered as gambling. Of particular interest are the psychosocial influences on people’s decision to gamble and subsequent gambling behaviour.

The current chapter outlines several key areas that need to be considered to contextualise gambling behaviour. To this end, first, an overview is given of the gambling products legally available to the adult population, the associated participation rates and the costs and benefits of gambling. Second, the significant issues around the conceptualisation, measurement, and identification of problem gambling are discussed. The third section focuses on the approaches taken to minimise the negative impacts of gambling, with an emphasis on the education initiatives currently employed. Finally, people’s reasons for gambling are discussed. More specifically, community members’ views of gambling, regular gamblers’ experiences, and inferred motives and problem gamblers’ self-expressed reasons for gambling are reviewed.
2.2 Gambling Activities, Involvement and Impacts

During the 1990s, throughout all Australian jurisdictions, there was a liberalisation of gambling policy that led to a rapid increase in the availability of gambling products (Winters, 2002). The most notable changes included the provision of licenses to clubs and hotels to operate Electronic Gaming Machines (EGMs) in Victoria, Queensland, South Australia, Tasmania, and the Northern Territory. In the same period, sports betting facilities were introduced to all states and territories and Keno was variably introduced across different jurisdictions. Concomitant with increases in availability was a surge in gambling expenditure. More specifically, gambling expenditure, as a proportion of household disposable income (HDI), almost doubled between 1988 and 1998 (Winters, 2002). However, over the last decade, gambling expenditure has stabilised and was last estimated to be at 3.1% of HDI (Office of Economic and Statistical Research, 2011). Nonetheless, across the different forms of gambling, there are significant differences in participation and expenditure.

In terms of participation, lotteries are by far the most popular with the majority of Australians (approximately 60%) engaging in this form of gambling within a 12 month period (Delfabbro, 2008). Lotteries include several types of chance determined number games that vary slightly in the way they are marketed and played. Pools, Lotto, Powerball and instant lotteries (scratchies) are examples of lotteries that are available from various outlets (typically news agencies) (Productivity Commission, 2010). Most lotteries products, with the exception of instant lotteries and Keno, are classified as non-continuous forms of gambling. That is, consumers purchase a ticket and enter a draw where the winning numbers are drawn on a weekly basis. In contrast, consumers of instant lotteries and Keno know the result of their ticket shortly after purchase. Although often considered a less serious form of gambling, together lotteries gross more than $2 billion a year (Productivity Commission, 2010).

Electronic Gaming Machine (EGM) gambling is the second most popular form of commercial gambling. EGMs provide a form of continuous gambling where the consumer can play uninterrupted for extend periods of time. The most common and contentious EGMs are poker machines or pokies as they are more commonly referred to in Australia (Dowling, Smith, & Thomas, 2005). Consumers can bet as little as
one cent per spin (trial) and up to $10 per bet depending on the jurisdiction. By placing maximum stakes on multiple lines, it is possible for consumers to lose up to $1200 per hour (Productivity Commission, 2010). EGM gambling is engaged similarly by males and females, with population surveys estimates indicating between 27% and 32% of the adult population have played a poker machine in a 12 month period and between 4% and 7% play EGM weekly or more often (Delfabbro, 2008). EGM gambling in clubs and hotels attracts the largest percentage of the gambling revenue, accounting for 55% of all regulated gambling revenue (Office of Economic and Statistical Research, 2011).

Australian casinos provide a diverse range of gambling activities in one location. Some games are solely determined by chance (e.g., EGMs, Roulette, Bingo, and Keno) whereas other games involve a level of skill (e.g., Black Jack and Poker). Despite the variety of gambling activities available, casino gambling attracts a smaller percentage of gambling revenue (18.2%) compared to the revenue raised in clubs and hotels revenue (Office of Economic and Statistical Research, 2011). This is largely due to casino gambling only being available in a limited number of locations compared to EGM gambling which is available in more than 5,700 clubs or hotels (Productivity Commission, 2010). Approximately 10% of the adult population is estimated to participate in casino table games, with 18 to 25 years adults old being over represented in this cohort (Delfabbro, 2008).

Wagering attracts a smaller portion of gambling revenue compared to EGM and casino gambling. Regulated wagering encapsulates the betting that occurs via licensed providers on horse and dog racing (either off course or trackside), and sports betting. Together, revenue collected from these forms of gambling is just over $2 billion, representing 14.8% of all gambling revenue (Office of Economic and Statistical Research, 2011). Although between 20% and 25% of the population participates in at least one form of wagering, regular wagering is engaged by a relatively small percentage of the population (4%) and is it largely a male dominated form of gambling (Delfabbro, 2008).

According to the Productivity Commission (2010), the gambling industry, as a whole, delivers a number of benefits to the community. In fact, of the $19 billion revenue generated via gambling expenditure (i.e., losses incurred by gamblers),
approximately $5 billion is returned to the state and territory governments in the form of taxation. Together, this represents 10 per cent of all state tax revenue. Over 50,000 people are directly employed to service the gambling industry and at least another 50,000 jobs are associated with gambling venues. Clubs also directly contribute to community by providing sponsorships, mainly to sporting clubs, from funding derived from gaming revenue. In addition to the tangible financial benefits, are the social and entertainment opportunities provided by some forms of gambling. For example, large social spaces are provided by the 13 Australian casinos and many of the 5,700 clubs and hotels offer facilities to local communities.

Despite the economic, social, and entertainment benefits of commercial gambling, there are significant harms associated with excessive gambling. Moreover, from a community level perspective, the Productivity Commission (2010) estimates even a modest reduction in gambling related harms would result in significant saving to the community. This is, in part, because of the intensity of problems associated with excessive gambling and also, in part, due to the diversity of gambling related harms. At the individual level, the impact of experiencing excessive financial losses is associated with a range of personal negative consequences. These include, but are not limited to, adverse psychological outcomes (depression, anxiety, self-harm); financial difficulties including excessive debt and bankruptcy; contact with the legal system (e.g., for fraud, and theft); relationship problems and employment difficulties (Productivity Commission, 2010).

In addition to the harms experienced by the gambler, there are wider social costs that impact across multiple levels of the community. In terms of more immediate social harms, the Productivity Commission (1999) estimated that five to ten people are directly impacted by one person’s gambling problems. This includes, cost to family members (e.g., negative impact to family finances), burden placed on employers from lost production, and the imposition placed on those affected by larceny and theft. Further costs include the burden placed on community services. For instance, the increased use of both government and non-government service agencies to access mental health, primary health care and criminal-justice services (Productivity Commission, 1999).
In summary, a diverse range of gambling activities is legally available to the Australian adult population, in which most Australians participate in at least one form of gambling yearly or more. Although engaging in gambling is not necessarily problematic, there are advantages in attempting to minimise the negative aspects that flow from commercial gambling. However, first it is necessary to clarify what is meant by problem gambling. The following section considers the construct of pathological gambling, problem gambling and gambling problems and, in turn, the issues related to the measurement and identification of problem gambling in the community.

2.3 Conceptualising, Measuring and Identifying Problem Gambling

Fundamentally, there are two contrasting perspectives on problem gambling: a medical model view and a public health view (McMillen & Wenzel, 2006). From a medical model perspective, problem gambling (pathological gambling) is defined as a maladaptive behaviour that is characterised by the inability to self-regulate one’s gambling behaviour (Diagnostic and Statistical Manual of Mental Disorders, 4th ed., text rev. [DSM-IV-TR]; American Psychiatric Association, 2000). In contrast, from a public health perspective, problem gambling is defined by the harms associated with gambling behaviour, rather than the behavioural characteristics of a person. An overview of these two positions is outlined before discussing the approaches that are typically employed to assess problem gambling at a community level.

2.3.1 Pathological gambling: A medical model view of problem gambling

A medical model view of problem gambling (i.e., pathological gambling) suggests the maladaptive behaviour is caused by an underlying pathology. Although a medical model perspective does not require the origins of pathological gambling to be identified, it is implicit that pathological gamblers become addicted because of a pre-existing vulnerability that impairs the gamblers’ ability to regulate their behaviour (Blaszczynski & Nower, 2002). This means, despite an awareness of the destructiveness of the behaviour, pathological gamblers’ behaviour is resistant to their own attempts at moderating their gambling. Thus, from a medical model perspective, the diagnosis of the mental disorder, pathological gambling, is determined on the basis of the presentation of a threshold of symptoms as identified in the DSM-IV which signifies the presence of a disordered condition (Petry, 2005).
Although pathological gambling is classified as an impulse control disorder, the criteria are more closely aligned with that employed to define substance use disorders (Abbott & Volberg, 2006). In fact, due to the similarities between pathological gambling and substance use disorders symptom presentation, it has been recommended that pathological gambling be re-classified as a behavioural addiction in the DSM-V (Petry, 2010). More specifically, the DSM-IV diagnosis of pathological gambling and substance use disorders employs five criteria that assess the characteristics of preoccupation, withdrawal, tolerance, mood regulation and loss of control (Petry, 2006). In relation to gambling, preoccupation refers to an obsession with reliving past gambling experiences and planning the next gambling session. Withdrawal is characterised as feeling restless or irritable when not being able to gamble, whereas tolerance is evidenced by the gambler needing to gamble more to achieve the same level of excitement that was once reached with less gambling. Mood modification denotes gambling to escape negative mood and loss of control refers to the difficulty in moderating behaviour.

In addition to the assumption that pathological gamblers are in some way qualitatively different from other gamblers, is the view that pathological gambling is a chronic and relapsing disorder (Abbott & Volberg, 2006). Put more simply, from a strict medical model perspective, pathological gambling is considered a progressive disease that requires on-going treatment and compliance for the patient to manage the symptoms (Blume, 1987). Moreover, it is expected the pathological gambler will continue to experience difficulties moderating their gambling behaviour and, therefore, the pathology is only stopped by removing the behaviour (gambling) (Dickerson & Baron, 2000; Jacobs, 1988). This view is also reflected in the way the success of treatment programs is evaluated. More specifically, the ultimate success of treatment programs is typically measured in terms of abstinence (Slutske, Piasecki, Blaszczynski & Martin, 2010).

The contention that problem gambling is best conceptualised as a progressive and intractable disorder has been questioned by some researchers (Dickerson & Baron, 2000). Also, there is emerging research suggesting that pathological gambling is not immutable. For example, LaPlante, Nelson, LaBrie, and Shaffer’s (2008) review of longitudinal problem gambling studies found pathological gambling was largely temporal in nature. More specifically, the review findings did not support the
hypothesis that pathological gambling is chronic or progressive. First, the review revealed those who met the criteria for pathological gamblers at time one were more likely to be classified as subclinical or non-pathological at follow-up (ranging from two to seven years) than to remain at the pathological gambling classification. The second major finding was those who were assessed at subclinical thresholds of pathological were more likely to be classified as non-pathological (or remain at subclinical levels) at the follow-up period than to progress to pathological gambling. According to LaPlante et al., these findings are counter to what many professionals would propose about pathological gambling and suggest that current views may need to be reconsidered.

### 2.3.2 Gambling problems: A public health view

An alternative way to conceptualise problematic gambling is to focus on the negative consequences of excessive gambling, rather than on behavioural characteristics. It is this approach the public health perspective ascribes to. One of the important aspects of the public health model approach is the focus on the assessment of the outcome of gambling as opposed to identifying a single causative factor of problem gambling (Korn & Shaffer, 1999). More specifically, gambling related harms are proposed to occur due to an interaction between the individual characteristics, the nature of the product and the broader environmental influences (Korn, Gibbins, & Azmier, 2003). In other words, the emphasis given to gambling related harms provides a contrast to the medical model approach. However, it is important to note that the public health model involves much more than the assessment of gambling harms. As such, the rationale and scope of the public health approach is outlined later in this chapter.

An advantage of conceptualising problematic gambling in terms of harms is that the focus is shifted from solely identifying those at the severe end of the problem gambling spectrum to considering all gambling behaviour. Moreover, Korn and Shaffer (1999) argue that a diagnostic perspective overlooks the broader population of gamblers. This is an important point because there are potentially many more individuals who experience gambling related problems than those who meet the criteria for pathological gambling. In other words, simply accounting for those classified as problem gamblers may significantly underestimate the number of consumers who are experiencing negative impacts from gambling. For instance, it
estimated that the there are two to three times the number of people who may experience significant problems related to their gambling behaviour than the number who classify as problem gamblers (Productivity Commission, 2010).

Although there are advantages in directly assessing harm as opposed to gambling behaviour, there are some important limitations to consider. First, quantifying harm in an objective manner is somewhat difficult. More specifically, as Svetieva and Walker (2008) argue, what is considered a gambling related harm by some may not necessarily be a direct consequence of gambling. For example, relationship conflicts that arise over how much time or money should be spent gambling may be the result of a clash of beliefs as opposed to harms that actually stem from gambling. Another criticism is that harm-centred measures may miss early signs of problem gambling (Delfabbro, 2008). In other words, the behavioural measures that form the basis of disordered gambling measures may detect the potential for problematic gambling before actual harms emerge. For instance, a person may display behavioural and psychological tendencies that suggest the presence of problem behaviour (e.g., loss of control, withdrawal, and other key markers of addiction) but have not yet experienced any harm. This, of course, would be more pronounced if the individual initially has ample financial and time resources.

2.3.3 Differentiating gambling problems from problem gambling.

The term *gambling problems* is used to denote gambling related problems as they occur across a continuum of involvement (Korn et al., 2003). More specifically, Korn et al. state this term is preferred, from a public health perspective, as it captures the range of gambling related problems from those who are at no or low risk through to those at high risk on the gambling continuum. Although this conceptualisation includes those at the extreme end of the harm continuum, it does not make assumptions of the origin of the harms. Rather, the emphasis is on identifying harms as they occur across the spectrum of gambling behaviour.

Within the Australian context, the term *problem gambling* is typically employed to refer to gambling that occurs at the severe end of the gambling problems continuum. Nonetheless, unlike the clinical diagnostic term pathological gambling, problem gambling does not imply a disease like state or that the individual is constitutionally different from non-problem gamblers (Delfabbro, 2008). More
specifically, Neal, Delfabbro, and O’Neil (2005) advanced a definition of problem gambling for use in the Australian context that encapsulates elements from both medical model and public health perspectives “Problem gambling is characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community.” (p.3). In other words, although there is the assumption that gambling is difficult to control it does not necessarily reflect the severity of loss of control reflected in the clinical diagnosis of pathological gambling. Rather, the definition captures the nexus between gambling more than can be afforded (behavioural tendencies/subjective loss of control) and the ensuing negative consequences (gambling harms).

In summary, it is apparent that problems arise from gambling when individuals gamble more than what they can reasonably afford. From a medical model perspective, problem (pathological) gambling is characterised, in part, by behavioural characteristics. This encourages the view that problem gambling is a chronic disorder and that gambling problems are only experienced by those who are vulnerable to the disorder. In contrast, a public health or harms oriented perspective does not make assumptions about the person, but instead seeks to identify gambling problems in terms of the harms experienced. Although the public health approach takes a whole population perspective, and views gambling problems as occurring across a continuum, it is not specific in terms of defining problem gambling. Nonetheless, as Neal et al. (2005) suggest, problem gambling can be conceptualised in terms of both behavioural and harm-based measures. More specifically, it is not necessary to view problem gambling as a disease like condition; rather an excessive behaviour that is influenced by both internal and external influences.

2.3.4 Assessment of problem gambling and gambling problems

Unsurprisingly, there is an array of different scales employed to assess problem gambling. Three commonly used measures of problem gambling are the DSM-IV criteria, the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) and the Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001). Each of these gambling measures are outlined to demonstrate the manner in which problem gambling and different levels of gambling problems are described and classified.
Although the DSM-IV is typically referred to as the gold standard measure of problem (pathological) gambling (Abbott & Volberg, 2006), it was specifically designed to be used as a clinical assessment tool. Despite this, a checklist format of the pathological gambling criteria is often used in surveys to estimate the prevalence of pathological gambling in the general community (Delfabbro, 2008). The DSM-IV criteria for pathological gambling consist of 10 descriptors. Six of the items reflect the addiction type symptoms (e.g., preoccupation, tolerance, withdrawal, gambling for mood regulation, loss of control, and chasing). The four remaining items refer to the negative consequences associated with gambling (e.g., lying about gambling, committing illegal acts to finance gambling, loss of significant relationships, and needing financial bailouts) (Petry, 2005). Gamblers who endorse less than five of the symptoms are considered non-pathological gamblers, whereas endorsement of five or more of the criteria signifies the presence of the mental disorder pathological gambling. Therefore, pathological gambling is conceptualised as an all or nothing phenomenon.

As is evident, the DSM-IV criteria not only assesses behavioural or addiction-like tendencies, but also symptoms that encapsulate the negative consequences of gambling. However, consistent with the view that pathological gambling is a chronic and intractable mental disorder, all of the criteria are assessed in terms of lifetime prevalence. That is, while the inclusion of gambling related consequences is congruent with harm based measures, the framing of items as enduring problems is more closely aligned with the person-centred pathology view than a multi-determinant approach promoted by a public health perspective (McMillen & Wenzel, 2006). Another commonly used scale is the National Opinion Research Centre Screen for Gambling Problems (NODS; Gerstein et al., 1999) which is directly modelled from the DSM-IV criteria and subsequently articulates the same view (Abbott & Volberg, 2006).

In contrast to the DSM derived checklists, the SOGS was specifically designed as a screening tool (Leisure & Blume, 1987). Namely, Leisure and Blume argued there was a need to develop a screening tool that could be used by both professional and non-professionals to screen for pathological gambling. To develop the screen, a pool of items was composed by drawing on information gleaned from interviews with pathological gamblers seeking treatment, their family members and counselling
staff. The original item pool was reduced to 20 by selecting those which most clearly identified pathological gamblers seeking treatment. A series of validation studies were conducted by comparing the concordance between the SOGS and the DSM-IIIR scores with diverse samples (e.g., Gambling Anonymous members, hospital staff, and university students). The SOGS and DSM-IIIR criteria were found to be highly correlated ($r = .94$). In terms of face validity, the 20-item SOGS has a greater focus on the aspects of the gamblers perceptions of their gambling and monetary issues (e.g., feeling guilty, and borrowing money) than the addiction or behaviour criteria used in the DSM-III and DSM-IV measures (Abbott and Volberg, 2006). However, similar to the DSM measures, the SOGS retained the focus on life time prevalence of symptoms and the binary scoring of items. A score of 5 or more is used to indicate probable pathological gambling (Leisure & Blume, 1987).

While the SOGS is still employed in its original format, some researchers have modified the scale to suit their specific research needs. One common modification includes changing the criteria to assess pathological gambling symptoms within a six or twelve months period as opposed to lifetime prevalence as originally used (Abbott & Volberg, 2006). However, perhaps the most significant departure from the original design is the use of the SOGS to detect less severe levels of problem gambling. For example, scores between 4 and 5 have been proposed to indicate probable problem gambling (McMillen & Wenzel, 2006). In other words, a distinction is made between pathological gambling and problem gambling with the latter considered a less severe form of gambling problems than the former. While this conceptualisation is consistent with a continuum view of gambling problems, it is quite a shift from what the scale was originally designed for and validated against, and is counter to the DSM-IV position of the all or none view of pathological gambling (Blaszczynski & Nower, 2002; McMillen & Wenzel, 2006). Specifically, from a diagnosis perspective, there is no allowance for a subclinical diagnosis of pathological gambling using the DSM-IV criteria (Petry, 2005).

It is this incongruence between design and use that has been at the heart of criticisms directed towards the SOGS (McMillen & Wenzel, 2006). More specifically, the psychometric properties of the SOGS were established by testing the ability of the scale to correctly identify those diagnosed as pathological gamblers from those who were not. While the SOGS demonstrated good discriminant validity
with divergent samples, it has been suggested it may not function as well in general population surveys which includes gamblers across the spectrum of involvement (Dickerson & O’Connor, 2006). A further criticism is that the SOGS may not be suitable as a measure of gambling problems due to it being designed specifically as a pathological gambling screen (McMillen & Wenzel, 2006). In other words, while it may be valid to estimate pathological gambling, it is unknown how well it assesses gambling problems as a continuous variable. Despite these concerns, the SOGS has demonstrated good psychometric properties and has been widely employed to estimate the prevalence of pathological gambling (Abbott & Volberg, 2006).

In contrast to the DSM inspired scales and the SOGS, the CPGI was developed as a general population survey screen to assess the prevalence of problem gambling and gambling problems. That is, the CPGI was specifically designed to assess a broad range of social and economic harms associated with gambling as they occur across a continuum of involvement (Ferris & Wynne, 2001). However, the main emphasis was given to the 9-item portion of the scale (Problem Gambling Severity Index; PGSI) which was refined to provide an accurate measure of the prevalence of problem gambling. To achieve this, the PGSI included both behaviour and harms measures associated with gambling. While the items included within the PGSI were developed to assess a broader set of harms than previous scales, an effort was made not to include items that were “soft” or, alternatively, only indicative of pathological gambling. The four harms included in the PGSI were designed to measure problems with health or finances, feeling guilty about one’s gambling and others criticising one’s gambling. It is also interesting to note most of the behavioural measures included are not addiction oriented. For example, only two items directly focus on markers of addictive behaviour (e.g., gambling with larger amounts of money to feel the same excitement and chasing losses) whereas the remaining three items refer to general behaviour tendencies (e.g., betting more than can afford to lose, borrowing money to gamble and feeling like one might have a problem with gambling).

Consistent with the aim of developing a screen sensitive to the spectrum of gambling problems, the scoring of the scale PGSI is calculated using a 4-point response scale. That is, as opposed to binary system used in the DSM-IV and SOGS, each of the nine PGSI criteria is scored as either 0 (never); 1 (sometimes) 2 (most of the time) and 3 (almost always) (Ferris & Wynne, 2001). The scores derived from
the nine items are then summed and classified into one of four categories: no risk (0-1), low risk (2-3), moderate risk (3-7) and problem gambling (8 or more) gambling behaviour, respectively. To establish the validity of the scoring schema, the PGSI was trialled on a sample and follow-up interviews were conducted with participants selected from each category to confirm the appropriateness of the PGSI classification. Ferris and Wynne reported that the results from the clinical interviews supported the conceptualisation of gambling related problems categories of no risk, low risk, moderate risk and problem gambling.

Although the PGSI was not specifically designed only to assess gambling related harms (it measures psychological aspects as well as direct harms), it has been criticised for not matching the definition of problem gambling advanced by the authors. For instance, Ferris and Wynne (2001) stated problem gambling is “gambling behaviour that creates negative consequences for the gambler, others in his or her social network, or for the community.” (p. 2). Svetieva and Walker (2008) point out that the design of the scale does not fit with this definition. It is interesting that Ferris and Wynne specifically defined problem gambling solely in terms of harms, but then explicitly state the PGSI is designed to include both behavioural and harms measures. Nonetheless, the scale is credited with making an incremental shift towards a non-medical model view of problem gambling and is largely successful in assessing gambling related problems as they occur across the continuum of involvement (Abbott & Volberg, 2006). Moreover, because of the efforts made at validating the scale with a general population sample, and its emphasis on encapsulating gambling related problems across the continuum of involvement, it has been suggested as the preferred measure of problem gambling in general community samples (Neal et al., 2005).

In summary, the DSM-IV checklist type scales, the SOGS and PGSI share a number of similarities despite quite explicit differences being offered for their purpose and design. For instance, all the scales use criteria that assess behaviour tendencies and gambling related negative consequences. However, there are important differences in the way the criteria are framed. Both the DSM-IV and SOGS are lifetime specific whereas as the PGSI criteria are framed within a 12 month period. Also, the PGSI was specifically developed to include criteria that assessed the less extreme end of the gambling continuum, while purporting to be
valid in assessing problem gambling. Although similar efforts have been made to modify the SOGS to be more consistent with a continuum view of gambling problems, the CPGI design and validation process appears to be superior. More specifically, the assessment of the validity of the behaviour and harm type measures across the continuum of involvement lends support to the appropriateness of the PGSI as a population level measure of gambling problems and as a measure of problem gambling.

2.3.5 Prevalence and patterns of problem gambling

One reason for assessing the prevalence of problem gambling is to estimate the cost or impact of gambling on the community (Productivity Commission, 2010). Another reason is to effectively target those experiencing problems with interventions to reduce the negative effects (Delfabbro, 2008). In terms of prevalence, the percentage of the adult population who are classified as problem gamblers is relatively low. In fact, by drawing on a series of population level studies conducted across different states and territories, the Productively Commission (2010) estimates that between 0.5 and 1.0% of Australian adults could be classified as problem gamblers. In addition, a further 1.4 to 2.1% of adults are estimated to be at risk of experiencing gambling related problems. These problem gambling rates are quite similar to other Western societies. For example, the United States, United Kingdom and New Zealand the problem gambling estimates range between 1.3 - 1.9, 0.6 - 0.8, and 0.6% respectively (Petry, 2005). In other words, similar to other Western societies, most Australians do not experience difficulties due to their own gambling.

In relation to identifying particular groups of people that are at-risk, the task is a little more challenging. This is, in part, because of the low prevalence rate, but is also compounded by the fact that gambling problems occur across most sections of the community. Despite this, there is some support for the idea that problem gambling is more likely to occur in some demographic profiles than others. More specifically, international population level research has found (e.g., Abbott et al., 2004 [New Zealand]; Currie et al., 2006; [Canada]; Welte et al., 2007 [America]) individuals belonging to ethnic minority groups and from lower socioeconomic status are overrepresented in the problem gambling estimates. Similar results have been found in Australian jurisdictions (Delfabbro, 2008). Although the research
suggests some segments of the community are more likely gamble problematically than others, gambling related problems are not confined to specific areas of the population. In fact, when the total variance of age, gender, socio-economic status, and ethnicity is accounted for, only between two and six per cent of the variance in problem gambling is explained (e.g., Currie et al., 2006; Young et al., 2008).

Another approach to identify those at potential risk of gambling problems is to consider the intensity of gambling behaviour as a measure of risk. For instance, Currie et al. (2006) found that gambling intensity (as assessed by participation, money spent and time) predicted problem gambling scores. Similarly, Kessler et al. (2008) found a dose-response relationship between the number of times gambled and problem gambling severity. In other words, those who gambled more frequently were at heightened risk of experiencing gambling related problems. LaPlante et al.’s (2008) secondary analysis of the UK prevalence data found that gambling more frequently on more activities was the most salient predictor of problematic gambling compared to any specific form of gambling. Together, what these studies show is that regular gamblers, or those who gamble more intensely, are an important group to target with interventions. However, as these studies are cross sectional it is not possible to state that more intensive gambling leads to problems, only that gambling problems are over represented in this group.

In summary, prevalence estimates provide a snapshot of the level of gambling and problem gambling at a community level. In addition, population level studies highlight some of the socio-demographic correlates of problem gambling. However, when considered as an explanatory variable, it is clear that problem gambling is not confined to specific aspects of the community, rather problem gambling is a phenomenon that occurs across social and demographic boundaries. More recent population based research suggests it may be more beneficially to consider the level of gambling involvement itself as an identifying factor, but the cause and effect nature of this relationship is not established.

2.3.6 Section summary

Problem gambling is difficult to conceptualise and even more so to measure and identify. This, in part, is due to different views on defining problem gambling. What is apparent is there are two opposing views used to characterise problem
gambling. From a medical model or diagnosis perspective, an emphasis is placed on the individual behavioural tendencies that suggest a subjective loss of control. Moreover, from this perspective the pathological gambler is perceived to suffer from a mental disorder which explains the reoccurring problematic behaviour. In contrast, a public health view does not take a stance on the constitution of the person, rather an effort is made to operationalise problem gambling in terms of the ensuing harms or negative consequence that stem from gambling. What is interesting is the commonly employed measures of problem gambling do not clearly articulate these dissimilarities. Rather, independent of whether the screens are designed to assess pathological gambling as a mental disorder or problem gambling as harms, both include behavioural and harms oriented measures.

Arguably, what is more important, is the need to assess gambling related problems as they occur across the continuum of involvement as opposed to only at the extreme end of the problem spectrum. Similarly, there is emerging evidence that problem gambling is best considered as potentially a transitional phenomenon rather than an intractable disorder. Together, the varying degree of gambling problems and the temporal nature of problem gambling makes identifying and appropriately intervening a difficult task. While there is some support that particular parts of the community are at greater risk of gambling related harms than others, it is also apparent that harms occur across socio-demographic boundaries. Perhaps what serves as a more robust indicator of problem gambling is the intensity of gambling behaviour, suggesting that intervention efforts should be directed towards regular gamblers.

2.4 Minimising Gambling Related Harms

Although, in relative terms, the number of people directly impacted by problem gambling is small, there are, nonetheless, a significant number of people adversely affected by gambling. Therefore, there is a clear need to attempt to mitigate the negative consequences associated with gambling. Within the Australian context, a diverse range of strategies are employed to both minimise the incidence of gambling problems and to reduce the level of problem gambling (Blaszczynski, 2001; Delfabbro, 2008; Fogarty & Young 2008; Rodda & Cowie, 2005). One of the prominent approaches adopted to reduce the risk of problem gambling are educational initiatives. However, before discussing the rationale of educational
strategies, the broader framework used to minimise gambling related harms is briefly outlined.

### 2.4.1 The public health approach

The public health model is perhaps better described as a general perspective as opposed to a specific framework. In relation to gambling, a public health approach considers a variety of stakeholders, including governments, industry, and individuals, as important to the process of minimising gambling related harms (Korn et al., 2003). In particular, a public health perspective on gambling provides a contrast to treatment focussed approaches which primarily seek to identify and offer assistance to pathological or problem gamblers. Instead, the public health approach recognises the full spectrum of gambling involvement (i.e., non-gambling to pathological gambling) and considers a diverse range of factors involved in facilitating or reducing gambling harms. Moreover, the interactions between the individual, the type of gambling product, and the social environment are proposed to be central in understanding the impacts of gambling (Korn & Schaffer, 1999; Peller, LaPlante, & Shaffer, 2008).

The strategies that flow from a public health perspective are typically classified into one of three groups: primary, secondary, and tertiary (Delfabbro, 2008; Korn et al., 2003; Messerlian, Derevensky, & Gupta, 2004). Primary gambling interventions consist of harm prevention measures that are designed to avert potential and current consumers from engaging in gambling practices that may lead to harmful outcomes. Secondary level inventions are specifically directed towards those already exposed to potential harms with the aim of preventing the current level of activity from progressing to riskier levels of involvement. Finally, the third level of interventions is directed towards assisting consumers who are experiencing significant difficulties due to their level of gambling involvement. Figure 2.1 depicts the relationship between each level of intervention and gambling problems.
2.4.2 Gambling harm minimisation

Gambling harm minimisation interventions include specific strategies designed to prevent and ameliorate gambling related harms. More specifically, the aim of gambling harm minimisation strategies is to reduce the adverse health, social, and economic costs arising from gambling (Blaszczynski, 2001; Ladouceur, 2004; Rodda & Cowie, 2005). Although the idea of seeking to prevent and reduce harms is not new, the concept of harm minimisation originated in Australia as a response to the threat of the spread of human immunodeficiency virus (HIV) among injecting drug users in the 1980s. Moreover, it was recognised the existing abstinence type approaches were unlikely to be helpful in reducing the spread of HIV and that a more pragmatic approach was required to combat the risk (Hamilton & Rumbold, 2004). As a result, several strategies were employed including the provision of sterile injecting equipment to injecting drug users. During the 1990s, the idea of harm
minimisation approach was expanded to include strategies to reduce the harms associated with licit drugs (Ryder, Walker, & Salmon, 2006). Such strategies include public health campaigns warning against the health risks associated with alcohol and tobacco use and increased restrictions on the promotion cigarettes. It is important to note that the harm minimisation framework emerged when the public health paradigm was gaining favourability across a number of sectors (Hamilton & Rumbold, 2004). Consequently, the harm minimisation framework largely reflects the public health philosophy.

Harm minimisation strategies are typically classified into groups that signify their purpose. The categories that are employed to describe the broad types of strategies within the alcohol and drug field, and to a lesser extent in the gambling domain, are demand control, supply control, and harm reduction (Cantinotti & Ladouceur, 2008). Within each of these bands are a range of initiatives that target behaviours that occur at primary, secondary, and tertiary levels of involvement. In relation to gambling, demand control strategies include measures adopted to encourage a reduction or moderation in gambling behaviour. The strategies include restrictions on marketing gambling products, providing specific information on different types of gambling products (i.e., the payout rates and chances of winning) and programs for problem gamblers. Supply control strategies refers to regulations imposed on the availability and design of gambling products and includes the restriction on the number of licenses granted, opening hours of venues, and the use of technology (e.g., smart cards that prevent further gambling when a predetermined monetary loss has been reached). The more contentious group of initiatives is harm reduction strategies. Harm reduction strategies, by definition, do not require a decrease in use, rather a decrease in harms (Stockwell, 2006). However, unlike alcohol and other drugs, the use of gambling harm reductions strategies is somewhat more limited. For example, as gambling problems are the direct result of spending too much time and/or money gambling, efforts directed at minimising harm typically also require a decrease in use and are therefore better considered as demand or supply control strategies (Cantinotti & Ladouceur, 2008).

Another schema used to characterise gambling harm minimisation strategies, and one that appears to be more common in Australia, is to classify strategies in terms of their intended target. More specifically, gambling harm minimisation
strategies are either directed towards policy, the product, or the consumer (Blaszczynski, 2001; Delfabbro, 2008; Fogarty & Young, 2008). Although these three classifications do not directly map onto the traditional three bands previously discussed, the policy and product type strategies are similar to the supply control category, and the consumer is similar to the demand control strategies.

Independent of the classification schema, the strategies that form part of a gambling harm minimisation approach are designed to target more than one of the areas identified in the public health approach. More importantly, the strategies that stem from gambling harm minimisation framework work together to form a mosaic of initiatives, which in turn, cover the primary, secondary, and tertiary levels of gambling risk as described by Korn et al. (2003). However, as the focus of this thesis is to explore consumer’s gambling behaviour and associated motivations, only the rationale of the educational initiatives within the consumer or demand band of strategies are discussed. That said, it is acknowledged that supply control and the policy level initiatives provide an important part of in preventing and reducing gambling related harms.

2.4.3 Educational initiatives

Educational initiatives are typically designed to prevent gambling problems from occurring (Williams, West, & Simpson, 2007). That is, the primary aim is to inform potential and current consumers on the nature of gambling to enable consumers to make reasoned choices on the extent of their gambling behaviour as opposed to directing those with problems to treatments services. Moreover, the common thread among the educational inventions is their focus on changing gambling beliefs, attitudes, and behaviours in an attempt to reduce hazardous gambling behaviour (Williams et al., 2007).

Central to preventative level educational initiatives is the role of informed choice (Blaszczynski, Ladouceur, & Shaffer, 2004; Fogarty & Young, 2008). Specifically, Blaszczynski et al. argue that providing potential consumers with relevant and accurate information forms an essential part in enabling individuals to make rational decisions about their gambling involvement and intensity. Although Blaszczynski et al. acknowledge other factors may contribute to the decision to gamble, they maintain that a choice is made to engage in gambling and, to continue
gambling, which is primarily determined by beliefs and attitudes a person holds. As a consequence, it is reasoned that educating consumers of the nature and risks associated with gambling is an important component in guiding gambling behaviour.

A range of strategies are employed to disseminate accurate and accessible information on the nature of gambling activities (Delfabbro, 2008; Hing & Dickerson, 2002; Fogarty & Young, 2008). At a general community level, information is made available via awareness campaigns aired through local media, and in some jurisdictions, information on the nature of gambling is included in school curriculum (Delfabbro, 2008; Fogarty & Young, 2008). The content of the messages tends to centre on one of two themes: increasing the awareness of problem gambling and correcting misconception about gambling (Delfabbro, 2008; IPART, 2004). The first theme concerns providing awareness of gambling related harms. It is argued for potential consumers to make an informed choice, they need to be made aware that risky gambling practices can lead to negative consequences for themselves and those around them (Delfabbro, 2008; Blaszczynski et al., 2004; IPART, 2004).

The second theme is directed towards addressing misconceptions about gambling. More specifically, several strategies are utilised to engender realistic expectations about the profitability of gambling (Blaszczynski et al., 2004; Hing & Dickerson, 2002; IPART, 2004). One approach is to explain concepts such as randomness (i.e., demonstrating that after a series of losses you are not more likely to win). Another method is to make explicit that an individual cannot control the outcome of chance determined games (i.e., knowledge or skill cannot change the outcome of a chance determined game). A different approach is to remind consumers that gambling is designed as a form of entertainment and should not be perceived as a way to make money (i.e., financially the odds favour the gambling provider).

One criticism directed towards education initiatives is their reliance on increasing consumers’ knowledge about gambling as gambling a primary risk prevention strategy (Dickerson & O’Connor, 2006; Williams et al., 2007). More specifically, Dickerson and O’Connor, argue that beliefs in the ability to win at gambling may not be the primary cause of gambling problems and that, in fact, emotional reasons for gambling may be more important. Surprisingly, there is
relatively little research that directly assesses the relative importance of beliefs in skill or ability to win at gambling and with emotional oriented reasons for gambling. Nonetheless, there is a growing body of research that examines the role of gambling cognitions in gambling behaviour and problem gambling more specifically. Of this research, some is directed towards understanding the association between erroneous gambling beliefs and gambling behaviour, whereas other studies focus on factors that may contribute or, conversely, mitigate erroneous perceptions. As this research is directly related to cognitive biases, it is reviewed in the following chapter.

2.4.4 Section summary

The response adopted to combat the risks associated with gambling in Australia is consistent with a public health approach. From this perspective, gambling problems are considered as a general community priority. As such, a range of measures are employed to prevent gambling related problems, promote balanced attitudes and behaviour, and protect vulnerable groups. In practical terms, this means that the product, agent, and environment are considered as having an important role in shaping the impacts of gambling and that government, industry, and individuals have a role maximising the benefits while minimising the costs. At a strategy level, the ensuing initiatives fit within a harms minimisation framework which is characterised as an overarching goal to reduce the social, economic, and cost of gambling. One of the central aspects of this approach, although not in isolation from policy and supply control measures, is to provide potential and current consumers with appropriated information to facilitate an informed choice.

The main objective of educational measures is to engender realistic attitudes and, in turn, reasoned gambling behaviours. Specifically, educational interventions aim to increase consumers understanding of gambling as a non-profitable activity and awareness that gambling should be pursued as a recreational activity. However, it is largely it is unknown whether the information provided to non-problem gamblers is relevant or effective in changing gambling behaviour or preventing gambling problems. One approach to assess the fit between the information provided in educational initiatives and consumers’ understanding of gambling is to examine their reasons for gambling. The following section discusses research that canvasses non-gamblers, gamblers, and problems gamblers perceptions towards gambling and some of the reasons given for gambling (or not gambling).
2.5 Reasons for Gambling

While there are numerous theories that provide insights into the potential reasons for problem or pathological gambling, relatively little research has been directed towards understanding the specific reasons for recreational gambling (Lee, Lee, Bernhard, & Yoon, 2006). This means there is a gap in understanding the reasons why some people gamble at a certain level of intensity as opposed to another. Nonetheless, there is a diverse body of research which examines people’s perception of gambling or self-expressed reasons for gambling. By drawing on this research it is possible to identify similarities and differences in the reasons for gambling at dissimilar levels of involvement. To this end, the ensuing section presents research that has examined the views of those who report they gamble occasionally or not at all, through to those who report they are problem gamblers. The relevant research is organised into one of three sections on the basis of the different research methodologies employed. First, studies that have explored general community members’ perceptions and experiences of gambling are reviewed. This is followed by studies that have used observational approaches to infer gamblers motives. Finally, studies that have conducted in-depth interviews with self-identified problem gamblers are discussed.

2.5.1 General community members’ views and reasons for gambling

Community members’ reasons for gambling or not gambling have been investigated using various techniques. One of the more common approaches employed is forced-choice questionnaires. Typically, these quantitative instruments are designed to assess people’s general views, experiences, or expectations of gambling using preselected questions. In contrast, other studies have adopted a qualitative approach, which allows respondents to report their perceptions or experiences in an open response format. Independent of the different approaches, together the studies provide insights into people’s decision to gamble or not to gamble. Thus, studies that have either (1) assessed people’s views on gambling and their associated gambling participation, or (2) explored the specific reasons community members report gambling are described below.

Attitudinal studies are one example of research that employs forced-choice instruments. From a theoretical perspective, attitudes reflect an individual’s views or subjective evaluations of a target behaviour or object (Fishbein & Ajzen, 1975).
More importantly, positive attitudes are purported to suggest a readiness to act (Glasman & Albarracín, 2006; Olson & Zanna, 1993). While attitudes are considered to be relatively stable over time, they are also proposed to be influenced by experience, the views of significant others and broader environmental influences (Olson & Zanna, 1993). Thus, attitude based measures are theoretical valuable in understanding general community members gambling behaviours (Orford, Griffiths, Wardle, Sproston & Erens, 2009).

Several studies have examined the relationship between gambling attitudes and gambling involvement. However, the manner in which gambling attitudes are proposed to influence behaviour and the way the construct is measured varies across studies. For example, some of the existing attitudinal research frame attitude constructs within multi-dimensional conceptual models (e.g., Lee, 2013, Martin et al, 2010; Moore & Ohtsuka, 1997; 1999; Oh & Hsu, 2001), whereas others simply employ attitudes a direct explanatory variable. While the former studies add to the body of knowledge on the reason people gamble, they are nonetheless primarily designed to answer specific theoretical questions rather than assess the impact of general attitudes on gambling behaviour. Thus, these studies are discussed within the relevant sections of Chapter Six.

One of the few studies to report the association between general perceptions of gambling (attitudes) and gambling involvement was conducted in Petersburg, Russia. Kassinove, Tsytsarev and Davidson (1998) were interested in assessing attitudes towards gambling given Russians’ relatively recent exposure to a range of gambling opportunities. Moreover, they argued that attitudes provide important insights into the reasons why people engage in gambling activities. One hundred and seventy one students were recruited from a university in Petersburg to complete a survey about their attitudes towards gambling, their gambling participation and associated attitudinal measures. The findings revealed those who reported previously engaging in at least one form of gambling held more positive attitudes towards gambling compared to non-gamblers. Although gambling attitudes were partly explained by views on liberalism and the tendencies for risk taking; gender and religiosity were not significantly related to attitude. Kassinove et al. interpreted their findings to support the validity of attitudes as an explanatory variable of gambling involvement.
In a more recent study, Orford et al. (2009) assessed the relationship between general population members’ gambling attitudes and behaviour. The data were obtained from the 2006 British Gambling Prevalence Survey data which comprised 9,003 participants. The results revealed that, on average, residents’ perception of gambling was negative, with most community members perceiving gambling as foolish, dangerous, and of greater harm than benefit to the community. However, those who gambled intensely (i.e., gambled on five or more activities at least weekly), were found to hold positive attitudes towards gambling. Further analyses showed attitudes served as an independent predictor of the number of gambling activities engaged when the socio-demographic variables were taken into account. Orford et al. argued the study’s findings support the premise of attitude-behaviour theories and suggested that attitude measures may have utility in assessing changes in gambling behaviour over time.

One study that has assessed the stability of gambling attitudes and behaviour used a longitudinal descriptive survey employing a convenience sample of community members. Martin, Lichtenberg and Templin (2011) proposed that perceptions towards gambling at casinos may provide an understanding of the temporal nature of casino gambling frequency. A total of 247 community members, over the age of 60 years, responded to a two-stage survey. Only older adults were sampled as the authors claimed this cohort are at an increased risk of experiencing gambling related problems compared to the general population. The baseline survey assessed participants’ attitudes toward gambling, with five broad casino attitudinal type questions, and the frequency participants gambled at casinos. A follow-up survey was conducted the following year to assess the stability of gambling attitudes and behaviour and to further probe the reasons for gambling. Counter to the author’s expectations, the results indicated the respondents gambled less frequently at the follow-up period, whereas gambling attitudes remained relatively stable. More specifically, there were no changes in three of the five attitude questions over time and the remaining two items displayed conflicting results (one endorsed more often, the other less often). In relation to the specific reasons for participating in casino gambling, the majority of respondents reported they gambled for the entertainment, to win money, because of the excitement, to be around other people and because it was easy to do. Martin et al. concluded that the relationship between attitudes and
behaviours was more complex than expected. Further, they suggested future research may be enhanced by examining the relationship between aspects of motivation and different levels of gambling involvement as opposed to general perceptions of gambling.

Several cross sectional studies have examined the association between different domains of motivations and gambling involvement. In fact, similar to the attitudinal research, a number of studies have investigated the relationship between specific aspects of motivation and gambling involvement (e.g., Clarke, 2004; Fang & Mowen, 2009; Lee, Chae, Lee, & Kim, 2007; Steward & Zack, 2008). Again, as these studies focus on testing the utility of specific models as opposed to exploring the general reasons for gambling, they will be discussed in chapters Four and Five. In contrast, the few studies that have adopted more of a descriptive analysis of the reasons for gambling are discussed here.

Using a multi-dimensional motives questionnaire, Platz and Millar (2001) compared recreational and pathological gamblers’ self-reported gambling experiences. Platz and Millar proposed that comparing what recreational gamblers value most from gambling with that reported by pathological gamblers, may provide insight into why some people become pathological gamblers and others do not. To examine this premise, 996 university students with prior gambling experience (inclusion criteria is not provided) were recruited to complete a survey assessing 23 motivational domains. Assessment of their gambling status revealed 111 students were pathological gamblers (SOGS of 5 or more), 536 problem gamblers (SOGS = 1 to 4) and 349 recreational gamblers (SOGS = 0). In order to identify the most salient motivations, the top ten motivations for recreational and pathological gamblers were compared for commonality. Seven common domains were identified: winning, excitement, risk, autonomy, escape daily routine, exploration, and being with friends. Further analysis revealed pathological gamblers endorsed the seven motivational domains to a greater extent than non-problem gamblers. Platz and Millar suggested that opposed to having distinct gambling motivations, pathological gamblers appear to perceive aspects of their gambling experience as more important compared to recreational gamblers.
Also examining gambling motivations, Clarke et al. (2007) assessed the extent to which a community sample of gamblers endorsed a preselected set of reasons for gambling. The central purpose of the study was to compare regular gamblers (i.e., those who gambled at least weekly without problems; SOGS scores < 3) and problem gamblers (those who gambled at least weekly with problems; SOGS of 5 or more) reasons for gambling. In addition, the gamblers were asked to rate the extent they agreed to questions pertaining to the reasons they started gambling (retrospective measure) and the reason they currently gamble. Compared to regular gamblers, problem gamblers scored significantly higher on items referring to the social, excitement and entertainment, and escape reasons for starting and continuing gambling. In contrast, there were no differences between problem and regular gamblers on the hope to win money. In relation to within group differences, problem gamblers endorsed the item “gambling to escape from troubles” for their current gambling more than when they started gambling. Conversely, both problem and non-problem gamblers reported gambling less for social reason than when they first started and recreational gamblers reported that gambling was less exciting than it was at first.

In contrast to employing closed questions, Neighbors, Lostutter, Cronce and Larimer (2002) used an open ended response format questionnaire to ascertain the salient reasons for gambling. One hundred and eighty four university students with gambling experience were requested to think about what motivates them to gamble and to record, in rank order, the top five reasons. Qualitative analysis revealed the ensuing responses could be coded into 16 distinct reasons. More than 70% of the responses given comprised reasons that could be classified as gambling to obtain money; for enjoyment and fun; for the rush and excitement; to be with friends and socialise; or to alleviate boredom. In addition, further analysis revealed the top four primary reasons (first response given) were gambling for money, enjoyment, socialisation and excitement, respectively. Neighbors et al. considered the range of self-generated motivations expressed supported the biopsychosocial views of gambling. The authors also noted the salience of the social aspect of gambling and remarked that this dimensions of motivations is usually overshadowed in most of the existing gambling theories.
Also using an open response format, McGrath, Stewart, Klein, and Barrett (2010) investigated whether general community members’ self-generated reasons for gambling could be classified in accord with the tenets of the alcohol use model developed by Copper, Russell, Skinner, and Windle (1992). More specifically, Copper et al.’s model proposes that alcohol use motivation can be largely represented by a combination of three distinct motivations: coping (e.g., to avoid negative emotions), enhance (increase positive emotion) and social (increase social affiliation). Using data collected as part of Canadian gambling prevalence surveys, the responses of 3,634 participants, who gambled at least once in the previous 12 months, were used in a qualitative analysis. The data included respondents’ answers to open ended questions about the reasons they gambled. McGrath et al. attempted to code the first response given, or the response given in relation to their favourite form of gambling, into one of the three pre-determined categories. However, while there was some support for Copper et al.’s model, the majority of responses could not be classified into one of the three categories. Subsequent analysis found three other designations were required to capture the essence of the reasons given. These were financial, charitable, and recreational. The authors reasoned that while Copper et al.’s model provides a suitable platform to capture aspects of gambling motivation, it is too restrictive and that the financial reasons for gambling need to be considered.

In summary, the research cited shows the reasons for gambling are many and varied. Attitudinal research suggests those who report less favourable views of gambling are less likely to gamble than those who hold more positive perceptions of the outcomes of gambling. However, while general evaluations of gambling gives some insight into the reasons for gambling, they do not identify specific aspects that help explain gambling behaviours. In contrast, specific measures of the reasons for gambling afford a more targeted examination of the gambling motives. Together, the quantitative and qualitative approaches suggest people gamble for a complex set of reasons. In particular, the chance or hope of winning money was a prominent aspect, although the social and emotional reasons for gambling also emerged as important reasons for gambling.

2.5.2 Ethnographic research

Another approach employed to elucidate the reasons for gambling is ethnographic research. The defining feature of this research is that data are collected
within the gambling context. In relation to the participant observer approach, researchers embed themselves within a gambling context over an extended period of time without revealing their purpose or their status as researchers. In other cases, informants may consent to participating in an unstructured interview while gambling or between gambling sessions. Independent of the approach employed, the qualitative data collected from observing gamblers are used to develop working models or themes that identified the salient reasons for gambling. One advantage of this approach is that researchers are able to record people’s comments and behaviours while gambling as opposed to relying on gamblers to recall their gambling experience and motives.

Using a participant observations approach (i.e., while working as a black jack dealer in a Canadian casino), Ocean and Smith (1993) developed a conceptual model to explain regular casino gamblers behaviour. In essence, their model underscores the social nature of regular casino gambling and proposed that regular gamblers (i.e., gambled at the casino at least three times a week) find casinos socially rewarding. More importantly, Ocean and Smith describe the process whereby the casino becomes an integral part of the regular gamblers life. The gamblers sense of identity, emotional wellbeing, and self-esteem are proposed to be catered for via the social interactions and status they gain from being regular gamblers. However, while regular gamblers are establishing an identity and sense of purpose within the casino, they simultaneously let connections to the outside world diminish. Ocean and Smith claim, that for the regular gamblers, casino gambling operates as both a positive and negative reinforcer. First, casino gambling is positively reinforced by the social recognition received and second, the conflict experienced in the outside world is avoided (negative reinforcement) by gambling. Based on their observations, Ocean and Smith reasoned that regular gamblers experiencing problems may find it difficult to re-establish social connections outside of the casino without assistance.

In contrast to investigating regular casino gamblers, Cotte (1997) observed recreational casino gamblers to ascertain their reasons for gambling. Cotte frequently visited a large casino as a participant observer over a six month period. Only gamblers who placed small wagers, moved between gambling activities and took breaks were observed, as it was believed these gamblers were unlikely to be pathological gamblers. The data were collected by taking notes after having brief
conversational exchanges with other gamblers or overhearing conversations between other gamblers. Interpreting her data from an experiential consumption perspective, Cotte suggested casino patrons’ motives occur across continua that involved purpose, focus and consumption experience. In essence, gamblers experiences were considered to encompass a diverse range of instrumental motivations (e.g., desire to learn, compete, develop skills, and win), emotional drives (e.g., seeking a rush, and enhancing self-image), and social elements (e.g., communing with others). Cotte’s study made a theoretical contribution to understanding recreational gambling by underscoring the diversity and complexity of gambling motivations.

Another study has also illuminated the diverse motives associated with casino gambling. Loroz (2004) interviewed 20 patrons, while either gambling or between games, from two casinos in Colorado. Loroz specifically approached patrons who appeared over the age of 55 and who preferred the low skill games (e.g., EGMS and Keno). A further seven older gamblers, contacted via personal contacts, were interviewed off-site. The rationale for limiting the sample to this age group was the belief many of these consumers will be transitioning in their life roles and thus be seeking out new activities and interests. Analysis of the informants’ responses revealed gamblers experiences could be categorised into three broad types of characteristics. More specifically, it was concluded casino gambling provided a range of psychological benefits including experiencing lift (e.g., the fun and excitement from gambling), escape (e.g., getting away from normal routines), and control (e.g., setting limits, making choices, and changing their luck). Loroz concluded that gambling served as a recreational activity that enhanced the seniors’ sense of self and psychological wellbeing.

Other ethnographic research that has focussed on specific gambling activities also points towards the diverse rewarding aspects of the gambling experience. Consistent with the participant observer approach, Neal (2005) collected data while visiting several betting shops and racecourses over 1 and 5 years, respectively. His aim was to establish himself as a regular among the other bettors and engage in the banter and conversations held by the regular gamblers. Neal’s findings revealed that most gamblers typically embraced the fact they were likely to lose in the long term, stating making money was not their long term goal. Rather their wagering was viewed as a sustainable leisure activity which was exciting, highly sociable and an
escape from normal circumstances. Neal stated while most punters’ gambling is, in part, sustained by the hope of winning, it is not irrational but grounded in an acknowledgement they are likely to lose.

Using both participant observation and unstructured interviews, Lalander (2006) investigated people’s reasons for EGM gambling. As a participant observer, Lalander engaged 130 EGM players in brief conversations across various gambling settings in Sweden (e.g., restaurants, local clubs, and hotels). In addition, Lalander interviewed nine regular EGM players recruited from gambling venues. Similar to the previous studies, analysis of the data revealed EGM gamblers reported gambling for diverse reasons. However, while a social element was evident in some of the accounts given, it was not as salient as other aspects of the gamblers experience. Interestingly, despite EGMs in Sweden being limited to relatively small wagers and payout, consumers still perceived their play as exciting, a way to escape, and a way to demonstrate mastery, and prove their worth to others and themselves.

In summary, the ethnographic studies provide a rich source of information. Although usually viewed through a relatively abstract lens of consumer experiential behaviour, the strength of the approach is its emphasis on explicating the reasons for gambling from the gamblers perspective and within the gambling setting. Moreover, the ethnographic research underscores the diversity of the gamblers experience. It is interesting to note the emphasis given to the non-financial aspect of gambling and, in some cases, the acknowledgement that gambling is unlikely to result in making money. In some ways, this is counter to the prominence given to the hope of winning in the survey designed studies. Nonetheless, it is implicit in many of the gamblers accounts they hope to win and that the chance of winning is an important aspect of maintaining behaviour.

2.5.3 Problem gamblers experiences

One limitation of the previously cited qualitative research is that it assumes that gamblers immediately report the reasons they gamble. In fact, some researchers suggest in-depth interviews are a useful approach to further explicate and clarify gamblers’ reasons for gambling (e.g., Wood & Griffiths, 2007). The following section reviews research that has employed semi-structured interviews with individuals and/or groups. The first three studies have employed a grounded theory
approach which aims to reveal salient themes to build and test a conceptual model of behaviour (Strauss & Corbin, 1998). The final study discussed uses a content analysis to determine dominant gambling motives.

Using a grounded theory approach, Ricketts and Macaskill (2003) interviewed 14 male treatment-seeking problem gamblers to examine and conceptualise their experiences. All the participants met the DSM-IV criteria for problem gambling. The qualitative analysis of the interviews revealed gambling was largely employed as an emotional management strategy, which included three non-mutually exclusive dimensions. The first aspect involved gambling to increase arousal which was experienced as excitement. These experiences were typically described as a rush or a buzz and were related to different aspects of the gambling experiences: from picking a winner, the activity itself, or the anticipation of the next gamble. The second facet of emotional management was gambling to avoid or shut out negative emotional states. Although sometimes associated with excitement, the primary purpose of gambling was to experience escape from negative thoughts or a distraction from current problems. The source of their discomfort was related to either their gambling behaviour (losing money and lack of control over gambling) or external stressors (e.g., an interpersonal dispute or stressful situation). The third dimension referred to gambling to increase positive mood via a sense of achievement. Even though those who preferred EGM gambling were aware that the outcomes were determined by chance, they reported the intermitted wins made them feel they were good at something. Ricketts and Macaskill reasoned that the gamblers may use one or more of these strategies as a form of emotional management and the strategy adopted may change depending on the need of the individual at the time.

Also using a grounded theory approach, Wood and Griffiths (2007) categorised the reasons expressed for gambling of 50 self-identified problem gamblers (43 male and 7 female). All the participants were interviewed about their current and past gambling behaviours to elicit responses about their reasons for gambling. Analysis of the responses revealed gambling to escape as the core theme. Moreover, most of the gamblers (46/50) were aware that gambling would not solve their financial problems and gambled as a means to temporarily manage negative mood states. Similar to Ricketts (2003), different processes were identified in the management of emotional states. For example, gambling to experience a buzz or excitement was considered as
a distraction from boredom or unpleasant emotional states for most, although some gamblers reported gambling only for the buzz. Others reported gambling as a way to distract their attention from problems or negative mood states. Yet others reported gambling to escape feeling lonely and/or as a way to seek approval from other gamblers. Further, independent of the form of gambling preferred (e.g., EGM, casino table games, off-course, and on course betting etc.), the gamblers’ experiences centred on the concept of escape.

Thomas, Sullivan, and Allen (2009) argued, that although previous qualitative research supports the idea problems gamblers gamble as a form of emotional management, it is unclear what role the setting plays. To address this gap, the authors interviewed 13 self-reported EGM problem gamblers and six counsellors to identify the reasons that help sustain EGM gambling involvement. As expected, the main theme that emerged was gambling served as a way to manage problems and negative emotions which is consistent with Wood and Griffiths (2007). However, central to the experience was the role of the gambling venue. More specifically, the gambling venues were often perceived as an oasis (a place to get away from life stresses) and a social place to seek adult company. In addition, gambling itself was perceived as an effective way to distract attention from unpleasant thoughts and emotions. Thomas, Allen, and Phillips suggested that the gambling environment is an important aspect in understanding the role of gambling as an emotional and social coping strategy.

In contrast to using a grounded theory approach, Rockloff and Dyer (2006) interviewed problem gamblers to identify the general behavioural tendencies that may predispose gamblers toward experiencing gambling problems. To achieve this, Rockloff and Dyer conducted focus groups with self-identified problem gamblers attending Gamblers Anonymous. By drawing on the existing literature and categorising the responses obtained in the interviews, the authors determined four themes best represented the responses. The themes that emerged were escape (avoiding unpleasant emotions and social situations), esteem (avoiding negative self-appraisal), excess (difficulty controlling impulses), and excitement (action seeking). Rockloff and Dyer used these broad themes to develop a trait-based forced-choice scale to assess risk of problem gambling. Their subsequent work supported the validity of the four dimensions. More specifically, exploratory and confirmatory factors analysis confirmed the presence of four aspects of behavioural tendencies
which, in turn, were found to be positively associated with problem gambling severity as assessed by the PGSI.

In summary, qualitative studies have probed the reasons behind problem gamblers’ sustained gambling using semi-structured interviews. In contrast to the ethnographic qualitative methods, gamblers’ reasons were not inferred from the responses obtained on an open ended question format or from behavioural observations and/or informal conversation with gamblers. Rather, interviews were used to build working models that are refined and tested using information gained from subsequent interviews. A dominant theme within all these studies is reliance on gambling as a form of emotional management. In particular, compared with the ethnographic and self-report data of the earlier studies discussed, gambling behaviour features more as a way to relieve negative emotions than as a social or an exciting activity. Of course, the need for escape may be largely due to the problems created by gambling and not be the original reason for gambling.

2.5.4 Section summary

Taken together the surveys, consumer reported experiences, and qualitative studies suggest people engage in gambling activities for a variety of reasons. While the data from these various sources sheds light on the array of reasons people gamble, it is not possible to draw firm conclusions on the relationship between distinct gambling motivations and level of gambling involvement. However, there are some patterns that emerge that are worth noting.

First, the survey type studies found community members who gambled perceived gambling as offering them a way to win money, as a form of entertainment, a social event, and as a way to wind down and relax. In terms of rank order or the prominence of specific reasons for gambling, Neighbors et al. (2002), McGrath et al. (2010) and Platz and Millar (2001) found gambling to win money emerged as the most popular reason. In relation to differences across levels of gambling problems, Platz and Millar (2001) and Clarke et al. (2007) found that non-problem gamblers tended to endorse the same aspects of motivation as problem gamblers, but to a lower extent. While these studies indicate the hope to win is a central interest in gambling, it is also apparent that other aspects of consumers gambling is important.
In contrast, the ethnographic research, which typically focused on those who were described as regular or recreational gamblers, found the social and entertainment aspects of gambling were salient features of the gamblers experiences. What is interesting to note is that the hope or expectation to win or profit from gambling did not emerge as a dominant theme. Rather, there was a general acceptance that they were likely to lose money, but nonetheless valued gambling as a social and rewarding activity.

Finally, the qualitative studies involving problem gamblers indicated a further narrowing of interests. Prominent in these studies is the notion that gambling is largely pursued as an emotional management strategy even amid the realisation that they were likely to lose rather than win money. Moreover, there was often an acknowledgment from the gamblers that gambling would add to their difficulties, but at the same time gambling was employed as an immediate release or an escape from unpleasant emotional states.

### 2.6 Chapter Summary

Legalised gambling provides a mix of costs and benefits. For instance, gambling venues provide a place for people to socialise, relax, and have a good time; employment is generated for thousands of people who are either directly or indirectly employed to service the gambling industry; and the community benefits from sponsorships and funding sourced from gambling revenues and taxes collected. However, there are risks associated with gambling opportunities. These include the emotion problems, social dislocation, and vocational hardships that occur due to individuals spending more money and/or time than they can reasonably afford. In addition, these negative consequences emanate to effect family, friends, and the broader community.

Given the potential cost and benefits of gambling, there is an ongoing need to develop practices that enhance the benefits to the community while minimising the costs. From a public health perspective, efforts can be pursued to facilitate both safe gambling behaviours while attempting to reduce the incidence of problematic gambling. Within an Australian context, a diverse range of gambling harm minimisation strategies are adopted including regulatory, product, and consumer awareness oriented initiatives. One of the consumer awareness strategies is the use of
educational initiatives which are designed to provide potential and current consumers with relevant information on the nature of gambling products.

Implicit in the educational approaches is that consumers’ attitudes and beliefs play a central role in determining behaviour. From this perspective, promoting realistic expectations of the profitability of gambling should help engender rational views and associated reasoned gambling behaviour. Despite the apparent face validity, it is also possible that the decision to gamble may be influenced by additional factors. Moreover, the findings from research cited in the preceding section suggest there is a diverse range of reasons associated with occasional, regular and potentially problematic gambling. One question that emerges from these observations is whether the current educational initiatives sufficiently canvass the non-financial aspects of gambling motivation.

One way to determine the relative importance of different reasons for gambling is to compare the relationships between dissimilar aspects of gambling motivation and gambling behaviour. As is discussed in Chapters Four and Five, there is a diverse and emerging body of research which investigates the role of emotional, social and pecuniary reasons for gambling. Despite this area of research indicating gambling motivation may be more than financially oriented, the area is still relevantly new and it is uncertain how these different aspects of motivation influence gambling behaviour. In other words, while several dimensions of gambling motivations have been identified, their comparative explanatory utility is largely unknown. In essence, it is argued that to better understand the role of motivations on the decision to gamble, and gambling behaviour, it is necessary to examine the role of specific aspects of gambling motivation within a longitudinal design.

Before reviewing the gambling motivation oriented research, the gambling theories and associated research that detail the theoretical function of gambling is discussed. Although the theories and research are predominantly concerned with explaining pathological gambling, they nonetheless illustrate the role of specific elements of the gambling experience and the role they may play in reinforcing continued gambling. To this end, some of the major components of the psychological explanations of problem gambling are reviewed in the next chapter to provide a context for the review of gambling motivation research in Chapters Four and Five.
Chapter Three

Gambling Theories, Motivations and Behaviour
Chapter Three
Gambling Theories, Motivations and Behaviour

3.1 Overview of Chapter: Identifying Salient Gambling Motivations

To effectively inform problem gambling prevention education strategies it is necessary to understand how motivational factors relate to gambling behaviour (Lee, 2013; Martin et al., 2010). One method to identify the role of gambling-related motivational characteristics in gambling behaviour is to examine the central tenets of major psychological gambling theories. Although the majority of existing theories and associated research are concerned with explaining problem or pathological gambling (Lee et al., 2006), they nonetheless provide insight into the motivational aspects involved in gambling behaviour (Neighbors et al., 2002).

The way in which problem gambling theories are portrayed, in psychological literature reviews, varies. For example, Lamberton and Oei (1997) classified the empirically tested explanations of problem gambling into affect, behavioural, arousal, and cognitive approaches. Conversely, in the Australian Psychological Association position paper, Blaszczynski, Walker, Sagris, and Dickerson (1999) argued that most psychological explanations of problem gambling can be considered from either learning or cognitive perspectives. In a different approach, Griffiths and Delfabbro (2001) propose gambling theories can be viewed from two general perspectives: psychological and biological. According to Griffiths and Delfabbro, the psychological determinants include behaviourist, need-state/addiction, and cognitive approaches, whereas biological perspectives emphasise dispositional characteristics as measured by genetic or personality differences. Raylu and Oei (2002) employ another schema again, dividing individual level factors into personality, biology/biochemistry, cognitions, and psychological states.

Despite the diverse representations employed, explanations of problem gambling can be grouped by the main reasons implicated in the initiation or maintenance of gambling episodes. In other words, it is possible to classify approaches by what they propose draws a person back to begin another session. One advantage of exploring the psychological explanations from this perspective is that it allows potential influences on the decision to gamble to be identified. This, of course, is important from an educational perspective. Moreover, as reasoned by
Blaszczynski et al. (2004), a decision is made to engage in gambling (or not to gamble) at some point. This is not to suggest that other influences are not involved, rather that a decision to gamble is central to a person initiating a gambling session.

The emphasis of the current chapter is to highlight the role of potential motivational factors associated in sustained gambling behaviour. To this end, the focus is on quantitative research that has sought to explain why some consumers gamble regularly and/or problematically and others do not. However, rather than focussing on higher order dispositional influences as explanatory variables, the underlying “functional” aspects of gambling itself are investigated. To achieve this, first, a broad distinction is made between explanations that propose gambling is pursued to optimise mood or emotional states and those that focus on the perceived financial utility of gambling (Ladouceur & Walker, 1996). Consequently, the first sections will review the emotion oriented approaches to understanding gambling behaviour, whereas the second section will discuss cognitive approaches.

3.2 Gambling as a Mood Modifier

One commonly cited theory that underscores the mood regulation aspects of gambling behaviour is Jacobs’ (1986) General Theory of Addiction. Jacobs’ theory comprises two main propositions. First, it is posited that the problem gambler gambles to moderate abnormal and unpleasant levels of arousal. That is, the gambler is either chronically over or under aroused and gambling serves as a way to return the gambler’s level of arousal to a normal level. The problem gambler’s abnormal physiological arousal state is proposed to be the result of a genetic predisposition and/or the influences of environmental factors during an individual’s developmental period. The second proposition is that the problem gambler is considered to be psychologically vulnerable which is characterised as feeling a deep sense of inadequacy. Again, this deficit or psychological vulnerability is considered to be pre-existing and the result of childhood experiences. Together, the sense of inadequacy and need to moderate arousal converge to foster a potential for seeking out gambling (or other potentially addictive activities) to distract their attention from a painful reality.

Central to Jacobs’ (1986) theory is that gambling serves as a means to feel normal as opposed to a way to feel euphoric. In other words, gambling is pursued as
a way to dissociate from a negative emotional state (abnormal level of arousal and sense of inadequacy) rather than to experience a rush or an heighten emotional state. Jacobs suggests that vulnerable individuals could function normally without gambling (addiction) if they did not experience the relief provided by the behaviour. However, once the relief provided by gambling is experienced, vulnerable individuals are unable to abstain from gambling without feeling a profound sense of anxiety. This, of course, leads to cycle of gambling behaviour that spirals out of control which is perpetuated by the accruing negative consequence and, in turn, the need to escape.

In contrast, Brown (1986) suggested that the central motivation for gambling is to reach a subjective state of excitement. Specifically, Brown argued the action of gambling (e.g., staking money on an uncertain outcome and the hope of winning) produces arousal that is perceived as exciting. From this perspective, the arousal experienced while gambling is not necessarily contingent on making a profit; rather gambling may be exciting whether gambling results in a profit or loss. In other words, gambling is pursued to facilitate an increased sense of wellbeing and positive mood, regardless of the financial outcome.

According to Brown (1987), two reasons make gambling a desired activity: boredom (i.e., feeling under aroused) or a state of over arousal experienced as anxiety. That is, an under aroused individual gambles to augment arousal, whereas an over aroused individual gambles to convert the negative arousal to positive arousal such as excitement (Brown, 1987). Although Brown conceptualises excessive gambling as an addiction, the mechanisms propelling behaviour are not necessarily biological or dispositional in nature. Rather, gambling is purported to be engaged to maintain a peak emotional experience and this need may change depending on the situational or environmental circumstances of the person.

Evident in both theories are the principles of learning theory. Jacobs’ (1986) theory is consistent with the notion of negative reinforcement: gambling as a means to avoid an unpleasant emotional state. In contrast, Brown’s (1986) theory draws on the role of positive reinforcement of arousal, as experienced as excitement. However, the causal factors in Jacobs’ explanation are dispositional (premorbid) in nature and the learning processes are secondary. In contrast, Brown’s theory clearly illustrates
the process of positive reinforcement without the need to reference a pre-existing pathology or vulnerability.

Although Jacobs’ (1986) and Brown’s (1986; 1987) views are conceptually different, together they underscore the major constructs incorporated in many of the mood or emotion oriented problem gambling theories and associated research. Moreover, Lamberton and Oei, (1997) claim the majority of the empirically tested psychological explanations of problem gambling propose gambling is pursued to moderate emotional states. Although there are several approaches and subgroups of explanations, a qualitative distinction can be made on the basis of the type of emotional change that is sought (Rickwood, Blaszczynski, Delfabbro, Dowling, & Heading, 2010). For example, as reflected in Brown’s position, gambling may be pursued or reinforced because of the excitement experienced. Alternately, as advocated by Jacobs, the need to dissociate from unpleasant emotional states may necessitate continued gambling. These two different propositions and associated research is considered separately in the ensuing sections.

3.3 Gambling and Excitement

In general, research that explores gamblers self-expressed reasons for gambling support the premise that the excitement experienced while gambling is a major reinforcer. More specifically, gamblers seeking treatment (Blaszczynski & McConaghy, 1989; Ricketts & Macaskill, 2003; Rockloff & Dyer, 2006; Wray & Dickerson, 1981) and regular gamblers (Dumont & Ladouceur, 1990; Griffiths, 1991; Titiz, Andrus, & Miller, 2002) commonly report they gamble because of the excitement experienced. Research findings have also indicated the act of placing a wager, waiting for the result (Dickerson, 1979) and experiencing near wins may increase subjectively experienced excitement (Griffiths, 1991; Reid, 1986).

Although Brown (1986) did not specifically articulate the processes that engender gambling as an exciting activity, excitement is often considered a conditioned reinforcer. That is, via the principal of classical conditioning, the excitement experienced from placing the winning wager becomes paired with gambling and the activities performed leading up to the act of placing a wager (Walker, 1992). In other words, gambling itself, independent of whether a win has
occurred, is experienced as exciting. As long as occasional wins are experienced, the association between gambling and excitement is maintained.

From a strict learning perspective, the reinforcement of excitement (or escape) is not considered a motivation or reason to gamble. More specifically, learning theories posit that behaviour is determined by stimuli, not internal motivational states or cognitions (Czerny, Koenig, & Turner, 2008). Nonetheless, others argue that learning explanations implicitly reveal the reasons gambling remains attractive (e.g., Neighbors et al., 2002; West, 2006) and, therefore, can be used to elucidate the motivations underpinning gambling behaviour. With this in mind, research that has explored the nature of the relationship between excitement and gambling behaviour will be examined. First, approaches that attempt to determine if there is a link between excitement and gambling behaviour are discussed. Second, studies that attempt to ascertain whether gambling is intrinsically exciting or if positive arousal states are dependent on winning are reviewed. Finally, studies that manipulate levels of excitement to probe the nature of the excitement-gambling behaviour relationship are discussed in the last subsection.

3.3.1 Excitement and gambling behaviour

The excitement experienced while gambling is typically assessed either by physiological and/or self-report measures. Physiological measures of arousal are purported to reflect autonomic and/or cortical activity (Goudriaan, Oosterlaan, de Beurs, & Van den Brink, 2004). Changes at this level are claimed to reflect variations in affect states and are often referred to as objective measures of arousal (Griffiths, 1995). One of the more common physiological measures used is heart rate, which is considered to be more sensitive to reward than punishment (Goudriaan et al., 2004; Ladouceur, Sevigny, Blaszczynski, O'Connor, & Lavoie, 2003). Heart rate, as a measure of arousal/excitement, has the advantage of enabling researchers to assess changes over a period of time with minimal interruption to the gambler and is also not subject to response bias. In contrast, participants are sometimes requested to report their level of arousal or excitement experienced while gambling using brief self-report measures. Although not all studies use the same self-report measure, one commonly employed measure of arousal consists of the 4-item subscale from the state portion of the State Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, &
Lushenea, 1970). The 4-item subscale assesses arousal in terms of how calm, tense, at ease and over-excitied an individual reports to be on a four point Likert type scale.

Both physiological and self-report measures of arousal have demonstrated effectiveness in detecting variance in arousal states during gambling. For instance, elevations in heart rate from baseline have been found while gamblers play black jack at casinos (Anderson & Brown, 1984; Meyer et al., 2000; Meyer et al., 2004). Likewise, studies have found that playing EGMs in both gambling venues (Diskin, Hodgins, & Skitch, 2003; Griffiths, 1993) and laboratory settings (Coulombe, Ladouceur, Densharnais, & Jobin, 1992; Diskin & Hodgins, 2003; Leary & Dickerson, 1985) is associated with an increase in heart rate. Similar results have been found with race betting as gamblers experience an increase in heart rate from placement of their bet and throughout the race broadcast (Coventry & Norman, 1997). In addition, individuals’ self-report measures of arousal have been found to indicate an increase in excitement while playing EGMs (Dickerson & Adcock, 1987; Diskin & Hodgins, 2003, Diskin et al., 2003; Griffiths, 1995) and while engaging in computer simulated gambling tasks (Hills, Hills, & Dickerson, 2001).

Several of these studies have compared arousal rates across different levels of gambling involvement. Griffiths (1995) found problem and frequent EGM gamblers experienced greater levels of subjective excitement, as assessed by a single item, compared to non-frequent players. Similarly, Diskin and Hodgins (2003) found problem gamblers reported higher levels of subjective excitement during EGM gambling compared to non-problem gamblers. Leary and Dickerson (1985) found both non-frequent and frequent EGM gamblers experienced significant increases in heart rate from baseline measures while playing an EGM, although the increase for frequent gamblers was significantly greater than non-frequent gamblers. Meyer et al. (2004) reported similar results with black jack players. Both non-problem and problem gamblers experienced increased heart rate while gambling at a casino, but the problem gamblers heart rate increase was more pronounced.

However, other studies have not found differences between level of gambling involvement and arousal measures. Coulombe et al. (1992) and Griffiths (1993) failed to find a significant difference between regular and occasional EGM players’ heart rates while gambling. Similarly, Diskin and Hodgins (2003) and Diskin et al.
(2003) found that non-problem and problem EGM gamblers could not be distinguished by changes in heart rate during a gambling episode. Likewise, Coventry and Norman (1997) did not find a significant difference between high and low frequent gamblers heart rates while wagering at an off course betting agency. One reason proposed for the mixed findings across the various studies is the inconsistencies in the way the groups are identified (Goudriaan et al., 2004; Baudinet & Blaszczynski, 2012).

A different concern with arousal-type studies is that physiological measures of arousal cannot differentiate between types of emotional (e.g., Brown, Rodda, & Phillips, 2004; Coventry & Constable, 1999; Hills et al., 2001). Specifically, Hills et al. state, in order to understand the reinforcement contingencies of continued gambling, it is important to differentiate between positive and negative states of arousal. That is, a high level of arousal which is perceived positively is experienced as excitement whereas a high level of arousal that is perceived negatively indicates an anxious state. This, of course, suggests psychological measures of arousal, by themselves, may confound quite dissimilar emotional experiences.

Another approach to explore the relationship between excitement and gambling behaviour is to investigate recreational gamblers self-reported motivation for gambling. Pantalon, Maciejewski, Desai, & Potenza (2008) argued it is necessary to examine potential risk factors for recreational gamblers and proposed the over-reliance on gambling as a way to enhance mood may be such a factor. More specifically, they hypothesised that those who gamble for excitement would be more likely to experience gambling problems compared to those who do not gamble for excitement. To examine this premise, the authors employed data from the United States National Gambling Behaviour Survey (1999). To obtain a sample that reflected recreational gambling, the authors excluded individuals who did not gamble in the past year and those at-risk of problem gambling (NODS > 2). Participants were then classified as either excitement seeker gamblers (n = 533) or non-excitement seekers (n = 923) based on their response to how important excitement was as a reason to gamble. The findings revealed that those who gambled for excitement were more likely to report one or two criteria on the problem gambling scale compared to those who did not report gambling from excitement. Pantalon et al. (2008) suggested the gambling motivation of excitement may have utility in
predicting of at-risk gambling behaviours and argued their findings have specific relevance to interventions targeted at a public health level.

In summary, there is strong support that gambling is associated with an increase in heart rate. However, the inability of physiological measures to distinguish between positive and negative affect means the explanatory utility of these findings are limited in terms of understanding why consumers may return another day. Nonetheless, Pantalon et al.’s (2008) findings suggest that those who gamble because they find it exciting are more likely to experience gambling related harms compared to those who do not gamble for excitement. As suggested by Pantalon et al., relying on gambling as a means of increasing positive mood may be an indicator of the early stages of gambling problems. However, further research is required to test this assumption.

### 3.3.2 Arousal and winning

Other researchers have examined the primacy of arousal and subjective measures of excitement in relation to gambling with and without money. More specifically, the proposition advanced is that changes in arousal may be primarily a consequence of the expectations of winning money, rather than the result of the action of gambling (Wulfert, Roland, Hartley, Wang, & Franco, 2005). From this perspective, the central variable to understanding gambling behaviour is not arousal per se, but perceptions of winning. The following section reviews studies that have examined the relationship between winning, arousal, and gambling behaviour.

Coventry and Constable (1999) examined whether EGM players who reported a win during a session of EGM gambling experienced an increase in arousal compared to gamblers who did not report at least one win. The authors recruited 34 female EGM players from bingo or amusement halls in the UK who were willing to have their heart rate measured while playing at their preferred machine with their own money. Only females were recruited as Coventry and Constable argued much of the existing research had not specifically investigated the role of arousal in female gambling. The researchers recorded if players had won or lost each trial and participants’ heart rate was recorded at 5-second intervals during the EGM gambling. The findings revealed there were no significant differences in heart rate between those who gambled frequently (at least once a week) and those who gambled less
than weekly. However, as expected, further analysis revealed a significant increase in heart rate from baseline measures for those who experienced a win on at least one trial. In contrast, there was no change in heart rate for those who did not experience a win during play. Coventry and Constable suggested that experiencing wins is central to increase arousal.

Coventry and Hudson (2001) set out to extend the finding of Coventry and Constable (1999) by employing both male and female EGM players. Forty two EGM players (22 male; 20 female) volunteered to have their play observed and heart rate measured during three minutes of their normal play in an amusement arcade in England. The authors found no gender differences in heart rate during play. In addition, there were no differences between frequent gamblers and at-risk gamblers as assessed by impaired control (difficulty in self-regulating gambling behaviour). As expected, those who experienced at least one win were found to experience a significantly higher increase in heart rate during play than those who did not experience any wins. However, in contrast to Coventry and Constable (1999), non-winners also experienced a modest increase in heart rate. Coventry and Hudson suggested the reason their study found increases on heart rate for those who did not experience a win may be due to sample and environment dissimilarities between the studies. First, their sample included a broader range of gamblers (diverse in terms of loss of control continuum), and second, the EGMs used had a wider range of sound and light features compared to Coventry and Constable (1999) study.

Gee, Coventry, & Birkenhead (2005) compared the effects of winning and losing on arousal for individuals gambling on their preferred activities. The authors recruited 17 regular gamblers who gambled at least weekly on any gambling activity. Twelve of the 17 participants scored five or more on the impairment of control scale (ICS; Corless & Dickerson, 1989), indicating they were likely to be problem gamblers. All participants were provided with a mobile phone and were requested to call a computer automated service immediately prior to the gambling session and on completion of the subsequent gambling episode. Prior to a gambling session, the participants indicated the form of gambling they planned to gamble on, the amount they intended to spend and their emotional state, as assessed by the 4-item portion of the state STAI subscale. On completion of their gambling, the participants phoned and reported if they won or lost, and how they felt while gambling and after
gambling (i.e., completed the STAI subscale). The authors found that subjective arousal (STAI scores) was higher during and after gambling compared to baseline measures. However, there were no significant differences in subjective arousal during play between those who won and those who had lost at the gambling episode.

In addition to experiencing wins, Moodie and Finnigan (2005) argued that winning of bonuses, nudge, and features (specialist play characteristics available on fruit machines in the UK) could also lead to an increase in arousal. The authors recruited 63 participants: 21 regular EGM players (visited gambling establishments more than 3 times a week), 21 infrequent players (gambled approximately twice a month) and 21 non EGM players (participants with no gambling history) to play an EGM in a gambling venue. The participants were given £6 to gamble and heart rate was assessed prior to and post 20 plays on the EGM. As expected, winning was related to increased arousal during play, with the magnitude of the wins positively associated with heart rate. Also, winning nudges, bonuses, and features was related to an increase in arousal. The authors reasoned, in addition to winning, the interactive game features play an important role in elevating the sense of excitement experienced while gambling.

A more direct approach to determine if winning is necessary to evoke arousal is to control the ability to win in a gambling episode. Ladouceur et al. (2003) examined if the expectancies of winning, or whether the activity itself, was the source of arousal and excitement while playing an EGM in a laboratory setting. Thirty four participants, with experience playing EGMs, were recruited from a university student population (none of the participants were classified as problem gamblers; SOGS < 5). The participants were randomly assigned to a low expectancy group (believed they were only playing for points) or a high expectancy group (who played for money). All participants played a pre-programmed EGM and were informed (after a trial period) that the payout ratio would increase by 200%. Heart rate was assessed during the trial period, after being informed of the payout ratio increase, and during and after play. A subjective measure of excitement (items about how excited they felt while gambling) was taken at the end of the session. The findings revealed heart rate increased for both low expectancy and high expectancy groups while playing. However, the high expectancy participants’ heart rate was significantly higher after being informed about the increase in payout ratio compared
to the low expectancy group. Similarly, the high expectancy group were more likely to report feeling excited during the 200% payout period than the low expectancy group. Ladouceur et al. (2003) considered the findings support the contention that arousal is largely due to the expectancy of winning.

Wulfert et al. (2005) suggested it was necessary to examine if Ladouceur et al.’s (2003) findings could be generalised to other forms of gambling. More specifically, the authors reasoned that other types of gambling may be more interactive and intrinsically exciting. Wulfert et al. designed a study in which non-wagering/wagering and win/lose conditions were controlled while wagering or predicting the outcome of a video recorded horse race. Heart rate was assessed during the race and up to 30 seconds after the race. Self-report excitement (how excited are you at this moment - not at all to extremely on a 10-point scale) was assessed twice during the race and immediately after the race. Eighty university students were assigned into either a non-wagering group (requested to predict the outcome) or the wagering group who bet $1 for the chance to win $7 on the outcome of a recorded horse race. To create the win/lose condition participants were assigned a horse that ultimately either won the race or came runner-up. Wulfert et al. hypothesised: 1) participants who wagered for money would experience an increase in arousal and excitement compared to those who predicted an outcome; and 2) and those who won would be more aroused and more excited than those who lost.

The findings supported the first hypothesis with the wagering group displaying higher levels of physiological and subjective levels of excitement compared to the control group during the race. Also, wagers’ heart rate remained significantly higher after the finish of the race (30 seconds post the race finish) compared to non-wagers, although this was not reflected in the subjective measure of excitement. The hypothesis that those who won their wager would demonstrate significantly higher levels of arousal compared to those who lost had mixed findings. That is, the winning group had significantly higher heart rates, but not self-report level of excitement compared to those who lost their wager. Authors speculated the lack of difference in subjective measure of excitement could be due to the lack of the sensitively in the measurement of excitement and/or the under-powered design. Wulfert et al. (2005) suggested their results support the idea the arousal and
EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR

excitement experienced during gambling are the consequence of the expectancy to win money, not because gambling is intrinsically exciting.

Wulfert, Franco, Williams, Roland, & Maxson, (2008) designed a subsequent study to determine if arousal is subject to a dose-response relationship. That is, the authors investigated if the amount of money wagered leads to increases in the level of arousal experienced. Similar to the previous study, university students were assigned to win or loss (unknown until the end of race) and wagering or non-wagering conditions and watched a video of a horse race. However, there were three wagering conditions. All participants wagered $1, but the payout varied depending on the condition they were assigned to: the potential payouts were $2, $7, or $15. In total, there were eight groups of 27 students included in the analyses: two non-wagers ($0 win and $0 loss), and six wager groups. Using the same protocols as in the earlier study, heart rate and subjective excitement was assessed. The findings supported the hypotheses with the wagering groups ($7 & $15) experiencing an increase in heart rate during the race compared to small and no pay off conditions ($0 and $2). Further, heart rate after the race was significantly higher for both those who won or lost the $15 compared to their respective win or loss groups. In contrast, excitement was only significantly higher for the $15 winner group as compared to the other win condition. There were no differences in excitement between the losing conditions. Wulfert et al. (2008) interpreted their findings to support the idea that monetary expectancies are important in determining excitement. Moreover, as monetary expectancies increase so does the level of arousal and excitement.

In summary, the previous research employs two different approaches for teasing apart the role of winning and arousal. One approach examines the effect of experiencing a win on arousal and the other focusses on differences between engaging in gambling activities with and without money. The first approach revealed mixed findings. Coventry and Constable (1999) found only those who experienced a win reported an increase in arousal, whereas Coventry and Hudson (2001) and Gee et al. (2005) found both non-winners and winners showed increases in arousal. In contrast, Ladouceur et al. (2003) and Wulfert et al. (2005; 2008) findings appear to be more conclusive. That is, the findings from these experimental studies suggest when money is not a factor, gambling is no longer perceived as exciting. Wulfert et
al. (2005) describes their findings as supporting the notion that the expectancy of winning money is necessary to increase arousal.

While Ladouceur et al. (2003) and Wulfert et al. (2005) do not dispute that excitement and gambling behaviour are related, they do suggest excitement is largely dependent on the expectation of winning. In other words, the central idea is that excitement is best considered a secondary reinforcer. Hence, excitement is purported to be the result of the perception of winning, not a consequence of gambling. According to this interpretation, the role of arousal in gambling becomes relegated to a secondary concern and the beliefs about the chances of winning take primary position. Overall, the results from the simulation studies lend some support to this idea. Both Ladouceur et al. (2003) and Wulfert et al. (2005) found arousal was largely diminished when money was not involved. Moreover, the dose-response relationship found between wager amount and arousal in Wulfert et al.’s (2008) subsequent study is informative, in that, arousal increases as a function of bet size.

However, as noted by Wulfert et al. (2005; 2008), the findings may be limited in terms of ecological validity. More specifically, the authors suggested the student sample may not represent the general community of gamblers and the findings may not extend to naturalistic gambling settings. However, another notable point that is not considered, is the gambling experience, in itself, may not represent what actually occurs for most gamblers. That is, most people who gamble at least occasionally are likely to experience wins, even though the outcome of a session may often result in a net loss. Therefore, the idea that excitement or arousal is contingent of the expectancy of winning may need to be clarified. In fact, Coventry and Hudson’s (2001) and Moodie and Finnigan’s (2005) findings suggest it is only necessary to experience a win to increase arousal, as most of those classified as winners in these studies were not winners per se, as they actually lost money over the session. Thus, the idea that the expectancy of winning is important to sustain arousal and excitement may need to be separated from the idea of gambling to make a profit. More importantly, it is apparent that excitement experienced while gambling (with money) is somewhat independent of the financial outcome.
3.3.3 The impact of arousal on gambling behaviours

Another attempt to establish the importance of excitement or arousal in maintaining gambling behaviour is to examine the impact of manipulating arousal on within-session gambling behaviours. Again, although not directly relevant to why consumers may return to gambling another day, this level of investigation further explores the link between excitement and gambling behaviour.

Rockloff, Signal, and Dyer (2007) examined the role of induced arousal on gambling behaviours. The authors recruited 69 university students who were given $20.00 credit to wager on a simulated EGM task. Students’ gambling intensity was assessed by average bet size placed and arousal levels were measured by Galvanic Skin Response (GSR). The students were randomly assigned to either the treatment condition, exposed to 80 db of white-noise condition every 120 seconds (to induce arousal) or the control condition (no noise). Rockloff et al. expected those in the treatment condition to experience elevated levels of arousal and to gamble more intensely compared to the control group. In addition, it was expected that gambling intensity would be more pronounced for those with many gambling problems compared to those with few gambling problems (determined by a medium split of PGSI scores). Although the white condition displayed elevated levels of arousal compared to the control group, the finding were largely counter to the hypotheses. Those with more gambling problems in the white-noise group placed smaller bets compared control group. In contrast, those with fewer gambling problems in the white-noise condition placed larger bets compared to the control groups. The authors speculated those with gambling problems may have associated the arousal induced by the white noise with losing.

In a subsequent study, Rockloff and Greer (2010) tested the moderating effect of valance on the relationship between arousal and gambling behaviour. More specifically, Rockloff and Greer argued that the influence of arousal on gambling behaviour may change depending of the phenomenological experience of arousal. To test this assertion, visitors to a crocodile farm (n = 103) were recruited to participate in a simulated EGM task. The participants were randomly assigned to a treatment group (participants handled a crocodile as part of a tour immediately before participating in the gambling simulation) and a control group who handled a crocodile after the participating in the experiment. The participants also completed a
positive and negative affect scale (PANAS, Watson et al., 1988) at the conclusion of play. The arousal manipulation was demonstrated to be effective with the treatment group’s average arousal (measured with GSR) level shown to be higher than the control group. In relation to the hypotheses, those in the treatment group, who reported no gambling problems (PGSI = 0), placed smaller average bets compared to their counterparts in the control group. That is, the increased arousal led to more cautious gambling for non-problem gamblers. In contrast, at-risk gamblers’ (PGSI of 1 or more) behaviour changed dependent of the interpretation of arousal. Those who experienced the arousal as negative placed smaller average bets compared the control group, whereas those who did not experience the arousal as negative placed larger bets. Interestingly, the control group of at-risk gamblers who experienced high negative mood (but low arousal) also placed higher average bets. Taken together, Rockloff and Greer considered the findings to support the contention that non-negatively perceived arousal increases the intensity of gambling for at-risk gamblers.

A different approach employed to assess the role of emotions in gambling behaviours is to manipulate affective states by controlling prior wins and losses. Cummins, Nardorff, and Kelly (2009) set up a two stage computer simulated card game experiment that involved fixing the outcome of the first tournament to result in either a majority of wins or a majority of losses. The second tournament was played under normal conditions. One hundred and eight university students were recruited to participate in the study with approximately half experiencing a majority of wins from the first tournament and the other half a majority of losses. Central to Cummins et al.’s argument was that prior wins or losses and the resultant emotional states could influence reckless gambling (operationalised as wagering too much on hands they were likely to lose). Their finding revealed those who won at the first round reported higher positive affect as assessed by the PANAS compared to the group who lost. In terms of subsequent gambling behaviour in the second tournament, positive affect was related to more reckless gambling. However, further analysis revealed that affect did not mediate the effects of the prior grouping into loss or win groups. Thus, the authors suggested the findings indicate that both prior gambling experiences (winning or losing) and emotional states have a direct relationship on subsequent behaviour. In other words, although earlier gambling experiences influence
subsequent gambling behaviour, affective states independently influence gambling behaviour.

Although the studies investigating the impact of arousal or emotions on gambling behaviour are relatively scarce, they do provide another view on the importance of excitement and emotional experiences on gambling behaviour. Rockloff and Greer’s (2010) findings support the idea that emotional states may have a significant influence on the relationship between arousal and gambling behaviour, especially for at-risk gamblers. Similarly, Cummins et al. (2009) indicate positive affect is associated with increased reckless gambling behaviours.

**3.3.4 Section summary for gambling and excitement**

Several issues emerge from the previous literature on excitement and gambling. First, Brown’s (1986) contention that gambling is exciting has received some support. This is reflected in the findings that show heart rate or self-reported measures of arousal increase while gambling. However, while it appears the gambling is experienced as exciting, it is not possible to claim that measures of arousal are able to differentiate between dissimilar levels of gambling involvement. Despite this, some researchers suggest (e.g., Diskin & Hodgins, 2003; Griffiths, 1995; Pantalon et al., 2008) arousal measures can be enhanced by including reference to the valence dimension of arousal.

The second area examined the importance of wins in inducing excitement. Although there is little doubt that gambling, without money, is unlikely to engender the same amount of arousal as gambling with money, the primacy of money remains a debated issue. Previous research suggests the excitement generated from gambling is dependent on the experience of at least some wins, but not necessarily on making a profit. What remains to be explored is how gambling expectancies of winning and excitement compare in terms of explaining consumers gambling behaviour. The hope of making a profit may supersede the desire to enhance mood, or conversely, gambling may be largely sustained by the desire to feel good no matter the cost.

The final subsection on arousal and/or emotional states considered the influences of emotional states on within-session gambling behaviour. Although not directly relevant to understanding the motivations to return to gambling another day, the research does pose an interesting premise. That is, despite arousal or excitement
during play not consistently differentiating between non-at-risk and at-risk gambling, emotions do nonetheless seem to influence gambling at the time. In short, it appears that if positive mood states are elevated then gambling is more likely to become more reckless or risky (i.e., increased bets) compared to experiencing negative mood states. Again, this underscores the need to consider excitement as a potential motivation in gambling behaviour more generally.

### 3.4 Gambling and Escape

In contrast to conceptualising excitement or arousal as a positive reinforcer of gambling behaviour, it is possible that positive changes in emotional states operate as negative reinforcers. Moreover, as reasoned by Jacobs (1986), an increase in positive emotional experience may be primarily desired to relieve unpleasant mood as opposed to create subjective feeling of euphoria. In fact, most of the research cited in the previous section could be taken to support either Jacobs’ or Brown’s (1986) view of gambling as means to regulate emotional states. Given that excitement is central to both positions, it is impossible, without further assessment, to differentiate the motivation of gambling to increase a positive hedonic state from gambling to escape dysphoric emotional states.

One method used to elucidate the primary reason for gambling is to examine links between depressed mood, or other associated negative psychological states, and problem gambling severity. For example, problem gamblers have been found to exhibit higher rates of depressed mood (Källmén, Andersson, & Andren, 2008; Turner, Jain, Spence, Zangeneh, 2008), psychosocial stress (Bergevin, Gupta, Derevensky, & Kaufman, 2006; Elman, Tschibelu, & Borsook, 2010; Thomas, Allen, Phillips, & Karantzas, 2011), and psychiatric disorders (Giddens, Stefanovics, Pilver, Desai, & Potenza, 2012) compared to general population samples or non-problem gamblers. The association between these negative psychological states and problem gambling supports the notion that gambling serves as a way of coping with the adverse conditions (Wohl, Matheson, Young, & Anisman, 2008). However, apart from the difficulties with demonstrating causality, these findings do not directly assess the proximal or experiential reasons for gambling.

An alternative approach is to examine studies that investigate the role of perceived benefits or functions of gambling as a way to reduce negative mood or
self-awareness. For example, instead relying on distal constructs like depression, stress and coping styles to infer gambling motivations, the more proximal measures of gamblers’ experiences may provide more accurate views of gambling motivations. In light of this, the following section reviews studies that indicate gambling is a way experience a subjective sense of escape or negative reinforcement. In other words, the focus is on studies that measure phenomenological aspect of escape or behavioural tendencies that reflect escape as central to the gamblers’ experience as opposed to pre-existing negative psychological states or measures of arousal. Specifically, studies that have assessed constructs such as dissociation, attention narrowing, and escape motivation are reviewed next.

3.4.1 Research employing direct measures of escape

According to Jacobs (1986), the consequence of an abnormal physiological resting state, and the sense of inadequacy, interact to predispose an individual to the risk of establishing addictive pattern of behaviour. In general terms, Jacobs proposed gambling serves as a way to relax and relieve stress or as a way to escape unpleasant feelings and live out fantasies of success and social acceptance. Later, Jacobs (1988) outlined three specific attributes that are proposed to be obtained via gambling. First, is the ability to blur out reality. That is, while gambling, the problem gambler is proposed to be distracted from the coexisting negative emotional states and sub-optimal circumstances. Second, gambling also functions as a way to feel less self-conscious and self-critical. Again, this is proposed to occur mainly due to the cognitive distraction or diversion away from self and may be facilitated by the acceptance often experienced in gambling venues. The third attribute proposed is that gambling provides a medium whereby fantasies and self-perceptions of control and importance are allowed to manifest. Jacobs (1988) states that as the intensity and salience of these attributes increases, so does the likelihood that a person will experiences a state of dissociation characterised as an altered sense of identity.

Central to Jacobs’ (1986) theory is that problem gamblers will experience significantly more dissociation like experiences compared to non-problem gamblers. Jacobs (1988) subsequently tested the ability of dissociation to differentiate between problem gamblers and a control group of adults. Participants’ level of dissociation was assessed with a purpose developed 4-item questionnaire that assessed how often participants felt like they were in a trance, a different person (altered identity),
outside of them-self and how often they experienced a memory blackout while engaging in gambling. The sample included 121 problem gamblers (members from Gambling Anonymous and others gamblers seeking treatment from an in patience facility) and a control sample of 168 adults. As expected, the findings revealed problem gamblers endorsed the dissociation-like reactions more often than the control group.

Kuley and Jacobs (1988) also employed the same short dissociation scale to examine the reasons for gambling. The authors recruited 30 problem gamblers (endorsed 7 or more criteria on the Gamblers Anonymous Twenty Questions and gambled at least twice weekly) and 30 social gamblers (endorsed less than 7 criteria on the Gamblers Anonymous Twenty Questions and gambled no more than twice weekly). Similar to Jacobs (1988), the findings revealed problem gamblers reported more dissociation like experiences than social gamblers. Further analysis revealed that experiencing memory blackouts and trance like states were endorsed more frequently than the feeling outside of one’s self. Kuley and Jacobs suggested the findings lend further support to the idea that dissociation like reactions are positively associated with gambling behaviour.

Another approach to investigate the phenomenon of escape is to assess narrowing of attention while gambling. Diskin and Hodgin’s (1999) argued that the time taken to respond to irrelevant external stimuli during playing on an EGM provides a behavioural measure of the intensity of focus, which may be experienced as dissociation. The authors set up an EGM in a laboratory that was modified to include a series of lights attached adjacent to the display of the EGM (within the players peripheral vision) and response bar in front of the machine for the participants to press when one of the lights were illuminated. Twelve problem gamblers (SOGS scores > 5) were recruited from an ongoing recovery program and 11 non-problem gamblers (SOGS scores < 4) were recruited from the community. The average time to respond to an illuminated light was used as the dependent variable. Subjective measures of dissociation were also used, including the modified form of Jacobs’ (1988) dissociative scale (a fifth item was added that assessed losing track of time). Each of the participants was asked to play the EGM as they normally would but, in addition, they were requested to press the response bar when they recognised that a light was illuminated. The results were largely consistent with the
authors’ expectations. Problem gamblers were significantly slower at responding to light stimuli compared to non-problem gamblers and were also more likely to report experiencing losing track of time and feeling like they had taken on another identity compared to the non-problem gamblers. Considered together, the finding supported Diskin and Hodgins’ contention that problem gamblers were more deeply “entranced” than non-problem gamblers.

In a subsequent study, Diskin and Hodgins (2001) argued their previous findings could be examined more rigorously. More specifically, it was reasoned a baseline measure of response time and a larger sample would strengthen the design. Accordingly, Diskin and Hodgins used a counter-balanced design where half of the participants’ baseline response time was assessed prior to the EGM play (responding to the illuminated light while not playing the EGM) and the other half during the EGM trial session. A sample of 20 problem gamblers (SOGS of 5 or more) and 22 non-problem gamblers (SOGS < 5) EGM players were recruited from the general community. Besides the changes in assessing baseline response times, the same protocols were employed in this study as with the previous study. In contrast to their previous finding, the authors did not find a difference between response time between problem and non-problem gamblers. However, when order effects of baseline assessment were taken into consideration, an interaction effect was found. Further analysis revealed that problem gamblers who received the prime first, responded, on averaged, approximately 10 times faster to the light during the EGM play compared to problem gamblers that completed the baseline measure during the EGM trial period. Conversely, non-problem gamblers did not display a significant difference in reaction time between the conditions. The authors reasoned that the problem gamblers, who received the prime first, may have perceived responding to the light as relevant to the task. The findings in relation gambling-related dissociation scale were similar to their previous study, in that the problem gamblers scored significantly higher than the non-problem gamblers.

In an experiment designed to manipulate feelings of self-worth, Rockloff, Greer, Fay, and Evans (2011) examined Jacobs’ (1986) contention that gambling provides a distraction from negative emotional states. Central to Rockloff et al.’s reasoning was the notion that participants who are prompted to think more negatively about themselves will be motivated to gamble more intensely than those who were
not. One hundred and five members were recruited from the general community to participate in a simulated EGM gambling task that was programmed to produce losses after an initial period that included wins. The participants were randomly assigned into one of three groups. One group audio recorded things they liked about themselves and another group recorded things they did not like about themselves immediately prior to playing the EGM. The third group served as a control condition. As expected, the findings revealed those in the negative recall condition gambled more intensely (larger average bet size, increased speed of play and played more trails) compared to the control group, whereas the positive recall group did not differ on the same play characteristics from the control group. Rockloff et al. reasoned these behavioural tendencies are consistent with the notions that gambling is at least partly motivated by the escape from negative self-perception.

Another approach to examine the role of escape in problem gambling behaviour is to test the mediating effect of escape motivation or dissociation on the relationship between stressors and gambling behaviour. Two studies have directly explored this premise with EGM gambling. Thomas et al. (2011) recruited 347 EGM gamblers from the general community to complete a questionnaire to assess respondents’, stress, avoidant coping, support, gambling motivations (escape, social, accessibility) and gambling frequency and gambling problems. Thomas et al. hypothesised that stress and avoidance coping would influence escape and accessibility motivations and these motivation would, in turn, positively relate to gambling frequency and problem gambling scores. Using path analysis, the relationships between these constructs were tested and the results supported the proposed model. That is, stress and avoidance coping were positively associated with perceptions of gambling as an effective means to temporally cope with life stressors. In relation to problem gambling, gambling frequency, escape motivation and perceptions of accessibility were positively related to PGSI scores.

McCormick, Delfabbro, and Denson (2012) investigated the utility of dissociation and psychological vulnerabilities to explain problem gambling for EGM players. More specifically, the ability of dissociations to explain gambling severity (PGSI scores) and the influence of physiological and psychological vulnerabilities on the dissociation was examined. One hundred and ninety regular EGM players (who gambled at least twice monthly) were recruited from the general community to
complete a battery of tests assessing sensation seeking, life stressors, psychological maltreatment, dissociation and the PGSI. Consistent with Jacobs’ (1986) theory, dissociation was positively related to problem gambling scores and trauma history and psychological vulnerability (assessed by depression anxiety and stress scores) independently explained dissociation. In other words, the path analysis supports the central premise of Jacobs’ theory that gambling is pursued to provide an escape from unpleasant psychological states.

3.4.2 Summary of escape

The notion that gambling serves as a means to regulate emotional states is central to many explanations of problem gambling (Lamberton & Oei, 1997). However, the emotional experience sought can be broadly classified into one of two types: gambling primarily to increase arousal which is experienced as excitement or gambling to escape from negative emotional states (Rickwood et al., 2010). Although there is likely to be overlap in these experiences (Wood & Griffiths, 2007), they are conceptually two different phenomenological states.

The research that has explicitly examined the role of dissociation or escape-like constructs lends support to the idea gambling is pursued to experience a relief from stressors or undesirable emotional states. Moreover, the different attempts to demonstrate the association between escape and gambling behaviour support the notion advanced by Jacobs (1986) that gambling provides a medium by which psychological relief is obtained. However, what is not typically examined is how the construct of escape compares with expectations that gambling provides a sense of excitement. More importantly, it is not possible to determine from the research cited whether the constructs of excitement and escape function differentially or if they are largely one and the same. Nonetheless, there is an emerging body of motivation oriented research that allows this premise to be explored further. This research is reviewed in the subsequent chapters. Before examining this research, the role of cognitive biases is discussed in the following section.

3.5 Gambling as a Money Making Pursuit: Section Overview

The hope of winning money is undoubtedly a motivation for most who gamble. However, from a cognitive perspective, it is the degree of certainty in achieving this goal that differentiates problem from non-problem gambler (Ladouceur & Walker,
1996). Namely, it is proposed that persistent gamblers hold more optimistic expectations about the long term financial outcomes of gambling compared to occasional or infrequent gamblers. Walker (1992) claimed that the persistent gamblers have taken up the challenge to win, despite the fact consumers should reasonably expect to lose money in the long term.

While the perception that commercial gambling has financial utility appears counter intuitive, it is not if one believes he or she has the ability to beat the system. It is this sentiment that is at the heart of cognitive theories’ approach to explaining regular and persistent gambling. In essence, cognitive explanations posit that the regular gamblers misunderstand the nature of the independence in gambling events (Delfabbro, 2004; Ladouceur & Walker, 1996). This involves both a misunderstanding in terms of what effect personal actions may have on the outcome of gambling and a misunderstanding about the relationship between previous outcomes and future gambling results. Although several types of erroneous processes and gambling cognitive constructs have been identified, collectively these beliefs are referred to as cognitive biases (Ladouceur & Walker, 1996). Nevertheless, commonly a distinction is made between perceptions of illusion of control and the gambler’s fallacy (Ladouceur & Walker, 1996; Steenbergh, Meyers, May, & Whelan, 2002).

In relation to gambling, illusion of control refers to the tendency to overestimate one’s ability to control (or predict) the outcome of an event (Langer, 1975; Toneatto, Blitz-Miller, Calderwood, Dragonetti, & Tsanos, 1997). These perceptions are clearly misplaced in the context of chance determined gambling activities (e.g., lotteries, poker machines, roulette) where the action of the gambler cannot influence the outcome of the activity. Nonetheless, even in the context of gambling activities that involve an element of skill (e.g., race and sports betting) gamblers are shown to overestimate their ability (Cantinotti, Ladouceur, & Jacques, 2004; Ladouceur, Giroux, & Jacques, 1998). Although this overestimation of ability may be reflected in several behaviours or actions (e.g., holding a lucky coin or placing bets using a favourite system), the underlying assumption is that these behaviours reflect an unrealistic expectation that their system will work.
Gambler’s fallacy is the second broad type of cognitive biases mentioned by Ladouceur and Walker (1996). This is characterised by the tendency to interpret independent chance-determined outcomes as interrelated. For example, if a coin is tossed 10 times and has shown heads on each occasion, the tendency to rate the chance of the eleventh toss being less likely to show heads violates what objective probability dictates and reflects the erroneous understanding of probability. In relation to gambling, the gambler’s fallacy is reflected in the belief they are coming closer to a win after experiencing a series of losses and, therefore, explains the gambler’s persistence in the face of successive losses. Although this belief is not always reflected in gamblers pattern of gambling behaviour (e.g., Delfabbro & Winfield, 1999), research has shown that the gamblers tend to report erroneous perception that are consistent with the gambler’s fallacy while gambling (e.g., Griffiths, 1994; Ladouceur, 2004). However, it largely unknown whether these erroneous beliefs are involved in sustaining gambling behaviour or a justification of persistent gambling (Delfabbro, 2004).

3.5.1 Cognitive biases as a differentiating variable

One approach to assess the role of cognitive biases on the decision to gamble is to examine whether there is a positive relationship between cognitive biases and problem gambling severity. More importantly, the beliefs individuals hold may be useful in explaining why consumers return another day despite incurring mounting losses. Although this research is relatively recent, several studies indicate there is a positive relationship between measures of gambling biases and gambling behaviour.

Joukhador, MacCallum and Blaszczynski (2003) argued there was a need to examine whether erroneous gambling beliefs could differentiate problem from non-problem gamblers. Their subsequent research examined this premise by comparing cognitive biases of 56 treatment seeking problem gamblers (SOGS of 10 or more) with a convenience sample of 52 social gamblers (SOGS < 5). To measure cognitive biases, the researchers used a purpose developed 65-item questionnaire which assessed 12 categories of irrational beliefs towards gambling. The respondents endorsed each item to reflect the strength of their beliefs on a 5-point scale from not at all to very much. Consistent with the authors’ expectations, problem gamblers were found to endorse all the categories of beliefs, with the exception of denial, to a significantly greater extent compared to social gamblers. Joukhador et al. suggested
their preliminary work lent support to the cognitive models explanation of problem gambling. Subsequent studies employing the instrument developed by Joukhador et al. (2003) have supported the scale’s content validity (Moodie, 2007) and explanatory validity (Moodie, 2009).

At about the same time Joukhador et al. (2003) published their research, Jefferson and Nicki (2003) identified a need for a scale to quantitatively assess cognitive biases. Moreover, they proposed that a psychometrically validated scale was required to assess the efficacy of cognitive oriented treatments in restructuring irrational cognitions. By drawing on the existing thinking aloud research and interviews with four regular EGM players, Jefferson and Nicki developed an item pool of 48 statements designed to reflect the cognitions of EGM gamblers. The items were framed on a 7-point Likert type scale from don’t agree to strongly agree. A total of 96 EGM players (mean SOGS scores = 5.67, S = 4.71) were recruited from hotels to complete the purpose developed questionnaire. Preliminary screening resulted in 23 items being eliminated and the remaining 25 items were subjected to principal components analysis. A one factor solution emerged, which the authors interpreted as supporting Ladouceur and Walker’s (1996) view that gambling biases reflect a general misconception on the nature of randomness. Further, analysis found the Information Biases Scale (IBS) was significantly correlated with SOGS scores and measures of depression and anxiety. Taken together, the findings support the notion irrational cognitions are assessable, interrelated, and associated with gambling problems.

Raylu and Oei (2004) also advocated that cognitive related cognitions are central to understanding problem gambling and subsequently developed the Gambling Related Cognitions Scale (GRCS). Raylu and Oei reasoned it would be beneficial to have a scale that assessed different categories of erroneous cognitive perceptions as well as beliefs concerning the ability to stop gambling and gambling expectancies. To achieve this, the authors constructed a 53 item scale and recruited 968 community members to complete the purpose developed scale and associated measures. Exploratory factor analysis was employed to refine the scale (remove items with cross loading and low communalities) and to reveal the final factor structure. A 23-item, five factor solution, was retained and was subjected to further analysis using confirmatory factor analysis (CFA). The CFA supported the
appropriateness of the 5-factor GRCS. Three factors were interpreted to reflect Toneatto’s (1997) classification of cognitive biases of illusion of control, predictive control and interpretive bias. The remaining two factors related to the inability to stop gambling and gambling expectancies. All factors were interrelated and significantly correlated to SOGS scores. However, the multiple regression analysis showed predictive control did not make an independent contribution to the statistical prediction of SOGS scores and illusion of control displayed a negative regression coefficient. In light of this, Raylu and Oei suggested the full scale may be the more appropriate measure of gambling related cognitions as opposed to using the subscales separately. Subsequent research employing the GRCS has found it is a reliable statistical predictor of gambling problem scores (e.g., Emond & Marmurek, 2010; Oei, Lin & Raylu, 2007; Oei & Raylu, 2008; Young & Wohl, 2009).

In contrast to explaining problem gamblers’ beliefs, Wood and Clapham (2005) contended it is also necessary to assess cognitive biases relevant to general community members. Consequently, Wood and Clapham designed the Drakes Beliefs about Chance (DBC) scale to assess non-problem gamblers misunderstandings about gambling. Using a postal survey, 239 community members were recruited to complete the 26-item DBC scale and measures assessing residents gambling frequency and expenditure. Before analysing the relationship between cognitive bias and gambling behaviour, the DBC was subjected to a principal component factor analysis. The findings revealed a two factor structure which was interpreted as illusion of control (e.g., there may be magic in certain number) and superstition (e.g., there are secrets to successful casino gambling that can be learned). Both the subscales were positively related to gambling frequency, expenditure, and time spent gambling. A follow up study of treatment seeking gamblers (n = 68) found the treatment group scored significantly higher on superstitious beliefs compared to the community sample, although there was no significant difference on the illusion of control subscale.

A more widely used and scrutinised scale is the Gamblers’ Beliefs Questionnaire (GBQ; Steenbergh et al., 2002). The GBQ was designed to assess the two dimensions of irrational beliefs identified by Ladouceur and Walker (1996). More specifically, Steenbergh et al. constructed a pool of 25 items to assess the constructs of illusion of control and luck/perseverance (gamblers fallacy). The GBQ
was evaluated by employing a sample comprising 200 community members and 203 undergraduates. A preliminary principal-axis factoring was used to identify poorly performing items (loading below .4). Four items were removed and the retained 21 items were subjected to a final principal-axis factoring to determine the factor structure. As expected, a two factors solution emerged reflecting the erroneous beliefs dimensions of illusion of control and luck/perseverance. In support of the GBQ criterion validity, problem gamblers (SOGS of 3 or more) scored significantly higher on the two subscales compared to non-problem gamblers (SOGS < 3) and the two factors were found to be strongly correlated (r = .62).

More recent studies also suggest the erroneous cognitions, as assessed by the GBQ, are reliably associated with gambling behaviour across diverse cohorts. For instance, cognitive biases were positively associated frequency of EGM gambling (Strickland et al., 2006), and problem gambling severity (Myrseth, Brunborg, & Eidem, 2010; King, Abrams, & Wilkinson, 2010; MacKillop, Anderson, Castelda, Mattson, & Donovick, 2006; Mattson, MacKillop, Castelda, Anderson, & Donovick, 2008). In addition, the GBQ has been employed to explain problem gambling scores for poker players (Mitrovic & Brown, 2009) and those who frequently gamble on the internet (Mackay & Hodgins, 2012). There is also some support the GBQ has utility in non-western populations. Specifically, the GBQ factor structure has been replicated in a Chinese population and the full scale scores were positively related to SOGS scores (Wong & Tsang, 2012).

In summary, research employing survey instruments to assess cognitive biases indicates that problem gamblers hold more optimistic views on their ability to influence or predict a successful outcome from gambling than non-problem gamblers. In addition, it appears cognitive biases are strongly interrelated, indicating a general tendency for problem gamblers to overestimate their ability to win and misunderstand randomness. However, what remains less clear is whether cognitive biases are the result of gambling exposure or whether cognitive biases play a role in establishing risky gambling behaviours. Although the research to examine this premise is scarce, there is emerging research that provides further insight into the associations between cognitive biases and gambling behaviour.
3.5.2 Cognitive biases and knowledge of statistics

In relations to preventing gambling related problems, some research has investigated whether an enhanced understanding of probability or gambling odds may help prevent or ameliorate cognitive biases. This has clear implications for strategies that assume gambling problems occur because of a misunderstanding of the nature of commercial gambling. Despite the apparent importance of this type of research, relatively few studies have directly examined the links between numerical reasoning skills, cognitive biases, and gambling behaviour. Nonetheless, a handful of studies provide insight on the association between statistical knowledge and erroneous beliefs, and a similar number of experimental studies have assessed the effectiveness of educational initiatives.

One of the earlier studies to investigate the relationship between statistical knowledge and erroneous gambling beliefs employed a simulated gambling task to elicit gambling beliefs. Benhsain and Ladouceur (2004) recruited 15 university students, who had completed at least two statistics related courses, and 15 students who were enrolled in programs without statistical courses. Pre-test measures confirmed the appropriateness of group designation with the statistics group scoring significantly higher on a probabilities questionnaire compared to the control group. All the participants were given $100 worth of chips and completed a computer simulated roulette game. The participants were instructed that they could keep 10% of their winnings. At five different times throughout the gambling task, the participants completed a short questionnaire about how they selected their bets. The responses were coded into either adequate or erroneous based on whether they referenced chance or randomness in their explanations. The findings revealed both groups reported more erroneous than accurate perceptions and that the statistics group did not differ from the control group in the proportion of erroneous beliefs elicited. Benhsain and Ladouceur interpreted the findings to suggest that knowledge of probability may not be a protective factor against cognitive biases within a gambling session. Moreover, Benhsain and Ladouceur suggest their findings are consistent with Ladouceur’s (2004) notion of cognitive switching, which suggests gamblers attend to personally relevant information (i.e., the need to win) as opposed to objective reasoning.
Using both an open and closed type questionnaire, Pelletier and Ladouceur (2007) also assessed the influence of prior statistical knowledge on gambling related cognitions. Sixty university students were purposely sampled (30 recruited from programs that include a strong emphasis on mathematics and 30 from non-mathematic focussed programs) to participate in the study. All the participants completed a survey that assessed their statistically reasoning skills (probability questions relating to card and dice games) and a measure of cognitive biases. Subsequently, the participants were requested to complete a task that required them to generate a random sequence of 100 heads or tails. On completion of the task, the participants were asked to describe how they generated the random sequence. The elicited responses were coded into either erroneous or accurate depending on whether the answers reflected the tendency to avoid repetitious patterns or trying to balance number of heads or tails. Initial testing confirmed that students from mathematic inclusive programs performed significantly better on the statistics test compared to the non-mathematical program students. However, counter to expectations, the mathematics group scored significantly higher on the cognitive bias questionnaire and reported the same percentage of erroneous beliefs compared to the non-mathematic students. In other words, similar to Benhsain and Ladouceur (2004), these results question the utility of increased knowledge of gambling odds and probability in correcting or preventing misinformed gambling beliefs.

An alternative approach to examining the influence of mathematical knowledge on erroneous beliefs is to compare problem and non-problem gamblers’ perceptions on both measures. To this end, Lambos and Delfabbro (2007) investigated problem gamblers and non-problem gamblers understanding of probability and perceptions of cognitive biases. More specifically, Lambos and Delfabbro recruited 44 treatment seeking EGM problem gamblers (SOGS = 5 or more) and 91 non-problem EGM gamblers (46 gamblers who play EGMs weekly or more and 45 infrequent gamblers) to complete a custom developed survey. The survey included questions that assessed knowledge of gambling odds (e.g., chances of winning lotto and return rates of EGMs), numerical reasoning, questions pertaining to irrational gambling beliefs and measures of gambling behaviours. Initial testing found no significant differences between problem, regular, and infrequent gamblers in the understanding of gambling odds, although infrequent gamblers
scored higher on numerical reasoning compared to regular and problem gamblers. There was no significant difference between problem and frequent gamblers numerical reasoning scores. In contrast, compared to regular gamblers, problem EGM gamblers scored significant higher on the cognitive biases scale while regular gamblers scored significantly higher than infrequent gamblers. Lambos and Delfabbro reasoned that an increased understanding of gambling odds and numerical reasoning is not likely to prevent further problem gambling because problem gamblers are likely to pick and choose the information as required.

While these studies do not support the contention that misinformed beliefs are the result of a lack of understanding of gambling odds, the studies do not directly assess whether efforts directed at correcting misconception about gambling reduce cognitive biases. From a cognitive perspective, directly challenging erroneous beliefs should help mitigate the presence of cognitive biases and reduce the risk of experiencing gambling related problems. The following studies have examined this premise as it may apply to preventative problem gambling initiatives.

Steenbergh, Whelan, Meyers, May, and Floyd (2004) argued, while cognitive problem gambling interventions have been demonstrated to be efficacious in reducing gambling problems, there is no evidence base to support the use of education initiatives to reduce cognitive biases or gambling behaviour with non-problem gamblers. Thus, the authors employed an experimental design to assess the efficacy of tailored information in correcting cognitive bias and reducing gambling behaviours. A total of 101 participants, who reported previous gambling experience, were recruited from a university student population. All the participants completed the GBQ, a questionnaire on gambling odds and other gambling related measures prior to being assigned to a treatment or control group and beginning the simulated roulette gambling task. The experiment included three conditions (two treatment conditions and one control group). The first group (n = 33) received specific instructions on setting limits and information to challenge common gambling misconceptions (11 minute audio-visual presentation). The second group (n = 35) received a brief warning message on the problems associated with problem gambling and the odds of winning (22 second presentation), and the control group received generic information on gambling. After receiving their assigned induction, the participants were given $125 credit and informed that the money retained at the end
of the session could be used to purchase raffle tickets for a chance to win one of a number of prizes.

On completion of the task (limited to a maximum of 45 minutes), the participants completed the GBQ and associated gambling knowledge questions. As expected, the two treatment groups answered a greater portion of the knowledge questions correctly compared to the control group. Also as predicted, the treatment group subjected to the specific information reported significantly lower mean GBQ scores (cognitive biases) compared to the warning and control groups after adjusting for pre-test scores. There was no significant difference between the information only and the control group on GBQ scores. However, in contrast to expectations, gambling behaviour (e.g., time, wagering size, and money left at end of session) did not significantly differ between groups. In other words, while the intervention was effective in terms of changing beliefs, this change was not associated with gambling behaviour.

Williams and Connolly (2006) sought to extend the research conducted by Steenbergh et al. (2004) by employing a more comprehensive educational program and non-laboratory based measure of gambling behaviour. More specifically, Williams and Connolly’s study involved delivering a modified statistics course, which used gambling examples and discussed the influence of cognitive biases, to a group of university students. To assess the efficacy of the program, the study comprised three conditions: a treatment group of 198 students who received the modified statistics course and two control groups. One control group (n = 134) received the non-gambling specific statistics course and the other control group consisted of students who were enrolled in courses without statistics components (n = 138). All participants completed a baseline and a 6-month follow-up survey which assessed gambling maths skills, cognitive biases, gambling behaviour and problem gambling. In general, the findings were consistent with expectations. The experimental group significantly improved in their knowledge of gambling maths and held fewer cognitive biases at follow-up compared to baseline. In contrast, the control groups did not change. However, contrary to expectations, the experimental groups’ improved understanding of gambling did not translate to a decrease in gambling behaviour or problem gambling scores. The authors suggested that informing students on the nature of gambling may be analogous to informing
consumers of the harms associated with alcohol. That is, more comprehensive measures may be required to bring about behaviour change.

A more direct, but less controlled approach is to assess the effectiveness of education initiatives used in gambling venues. To this end, Boutin, Tremblay, and Ladouceur (2009) assessed the changes in casino visitors’ (n = 67) beliefs about EGMs after engaging in educational activities at an Onsite Casino Information Centre (OCIC). To provide a compassion group, a sample of casino visitors (n = 74), who attended an OCIC at a different casino without specific educational initiatives, was employed. Participants from both groups completed a pre-test questionnaire which assessed their current gambling behaviours (e.g., frequency, time, and money spent gambling) and a 10-item questionnaire about their perceptions of randomness (e.g., there is nothing you can do to increase your chances of winning at an EGM). At the completion of the visit to the OCIC, participants completed the perception of randomness questionnaire again as a post-test measure. In addition to pre-test and post-test measures, the participants completed a mail out survey three months later to assess their gambling behaviour and beliefs. As expected, only the visitors to the OCIC with educational activities showed an improvement in their understanding of EGM gambling at the post-test and three month follow-up period. In contrast, there was no change in perceptions of randomness for those who visited the OCIC without the educational activities. However, contrary to expectation, there were no significant changes in either the education or control group’s gambling behaviour (time or money spent) at the three month follow-up. Although this finding was counter to Boutin et al.’s hypothesis, they reasoned that the idea behaviour should change after an education intervention may not be realistic. Rather, gambling behaviour measures may not be a relevant metric to assess the success of prevention programs which target occasional or moderately frequent gamblers.

In summary, several studies have examined the relationship between knowledge of the nature of gambling (in terms of probability and gambling odds) and cognitive biases. Counter to expectations, the existing research suggests cognitive biases are not an artefact of a lack of information about randomness but more a failure to apply the knowledge to one’s own gambling. Thus, it appears the generic information on gambling may not assist in correcting misinformed or irrational gambling beliefs. However, the findings of the few studies that have examined the
efficacy of directly targeting cognitive biases are more favourable. More specifically, the Steenbergh et al. (2004) and Williams and Connolly (2006) experimental studies and Pelletier and Ladouceur’s (2004) comparison study all lend support to the notion that cognitive bias can be reduced via targeted interventions. Although what remains less clear, is whether the changes in cognitive biases are sufficient to help prevent problem gambling or assist moderate risk gamblers moderate their behaviour. In light of this, several of the theoretical and practical limitations of cognitive explanations and the findings from the cited studies are discussed.

3.5.3 Section summary for cognitive biases

The notion that gambling problems stem from a misunderstanding of gambling as a profitable activity has two important implications. First, it means all consumers of gambling products are potentially susceptible to gambling problems as opposed to only those with a pre-existing vulnerability. Second, the implicit assumption is that if consumers are provided with relevant information then they are able to make reasoned and rational choices about the extent of their gambling behaviour. As discussed in Chapter Two, the latter point has implications for how educational interventions are designed and disseminated to gamblers across the spectrum of gambling involvement.

Despite the clear theoretical position, the existing research is somewhat mixed on the potential utility of a cognitive explanation of gambling problems. In short, there is support for the assumption that cognitive biases are related to gambling behaviour, but whether cognitive biases are the result of a misunderstanding of the nature of gambling remains questionable. Also, the issue of whether interventions designed to correct cognitive biases is an effective means to prevent problem gambling remains unknown. More specifically, interventions have only demonstrated utility in minimising cognitive biases, not a reduction in gambling behaviour or gambling related problems.

Another issue is the lack of research that compares the explanatory value of cognitive biases with other cognitive based or motivation-type constructs. That is, while some studies (e.g., Oei & Raylu, 2008) demonstrate that erroneous beliefs explain gambling problems over and above socio-demographic characteristics, other competing motivations are not included in these models. In other words, it is unclear
whether cognitive biases explain gambling problems over and above other perceived rewards such as the anticipated emotional or social experience or whether they form part of broader set of influences in determining gambling behaviour. Apart from being important from a theoretical perspective, the ability of cognitive biases to explain gambling behaviour, beyond other motivational constructs, has practical implications for the type of education information provided to potential and current consumers of gambling products. Moreover, several researchers have also commented on the need to consider a range of potential reasons for sustained gambling behaviour (e.g., Delfabbro, 2004; Dickerson & O’Connor, 2006; Griffiths, 1999; Petry, 2005; Ladouceur & Walker, 1996; Czerny, Koegig, & Turner, 2008).

One scale that provides some insight into the relationship between cognitive biases and other gambling motivations or expected outcomes is the GRCS (Raylu & Oei, 2004). More specifically, Raylu and Oei argued that beliefs concerning the anticipated emotional outcomes of gambling may also be an important aspect of gambling related cognitions. As reported earlier, their research supports this assertion, with gambling outcome expectancies (e.g., gambling to escape) featuring as a distinct factor within the 5-factor scale of gambling related cognitions. In addition, gambling expectancies made an independent contribution to the prediction of gambling severity. While the idea that gambling expectancies may be helpful in explaining gambling behaviour is not new (e.g., Walters & Contri, 1998), the relationship between a diverse range of gambling expectancies, cognitive bias, and gambling behaviour is unexplored. The research pertaining specifically to gambling expectancies, as opposed to cognitive biases, is reviewed in the ensuing chapters and provides support for considering different aspects of gambling expectancies.

Despite these limitations, it is evident cognitive biases are associated with gambling behaviour. Thus, it appears cognitive biases should feature in models used to explain gambling problems as they occur across the continuum of involvement. Moreover, as stated by Blasszczynski et al. (2004), cognitive factors are likely to be pre-eminent in the decision to gamble. Nonetheless, the nature and salience of consumers’ beliefs regarding the outcomes of gambling are likely to be more diverse than perception of skill or misunderstandings of the financial utility of gambling.
3.6 Chapter Summary

The problem gambling theories and associated research advance contrasting views on the reasons for persistent gambling. For instance, the emotion focussed theories posit gambling is engaged to moderate arousal or emotional states, whereas cognitive explanations propose that overly optimistic expectations about winning are the main reason for problem gambling. Although some studies attempt to determine the primacy of arousal or monetary expectancies (e.g., Ladouceur et al., 2003; Wulfert et al., 2005; 2008), the competing positions are generally not directly compared. Therefore, the studies discussed do not allow the salience of the different gambling motivations to be determined.

Another issue that makes determining the importance of specific motivations difficult is the lack of research that concurrently assesses dissimilar aspects of emotion-oriented motivation. For instance, although the mood modification explanations suggest gambling is not pursued to make a profit, the role of gambling as a way to experience excitement or relief from boredom is quite different from gambling to relax or escape. That is, while it is possible these two aspects may be related (Wood & Griffiths, 2007), it is also possible they are different motivations and may vary depending on the level of gambling involvement (Clarke et al., 2007). However, before these ideas can be tested, it is necessary to separate the components of excitement and escape at a measurement level and incorporate them into models of gambling behaviour.

Similarly, from a cognitive perspective, the notion that gambling is viewed as a profitable activity also requires further investigating. First, the assumption that erroneous beliefs reflect a more optimistic view of winning at gambling in the long term needs to be tested. For example, if gamblers perceptions of skill do not directly relate to an unrealistic view of profiting from gambling then cognitive biases may not be an important aspect. Rather, it may be more worthwhile to educate consumers on practical ways to limit spending as opposed to correcting misinformed beliefs.

In summary, the problem gambling theories illuminate a diverse range of reasons for gambling and are largely congruent with the ideas portrayed in the descriptive research reviewed in Chapter Two. However, research has not simultaneously assessed the role of different aspects of gambling motivations and
cognitive biases in one model. In addition, it is unknown how the anticipated benefits from gambling relate to community members choice to gamble and subsequent gambling behaviour. Thus, the following series of studies seeks to address this gap.

### 3.7 Purpose and Objective of Ensuing Studies

The ensuing studies were designed to assess the relationship between gambling expectancies, choice to gamble, and subsequent behaviour. The central argument is that it is necessary to assess consumers’ reasons for gambling across the full spectrum of gambling involvement to effectively inform educational harm minimisation strategies. To this end, the current studies employ a belief or expectancy based approach to assess gambling related motivations. The rationale and theoretical basis is discussed in detail in the proceeding chapters. However, it is suffice to say that the approach closely aligns with the cognitive biases model discussed, where the reasons for gambling are purported to be reflected in a person’s beliefs or gambling related expectancies.

The objective of the subsequent studies can be summarised into three broad components. The first objective involves the identification and assessment of meaningfully different aspects of gambling expectancies. This is, in part, informed by the research discussed in the current chapter. However, there is also a broad body of disparate research that has measured specific gambling motivations. Together, the results from the literature review of gambling motivation scales (Chapter Four) and the concepts identified within this chapter, namely excitement, escape, and monetary expectancies are used to inform the approach taken to measure gambling outcome expectancies. The findings of the review of the gambling motivation scales and the ensuing analysis are discussed in Chapter Four, whereas the relationship between the identified motivations and gambling behaviour is examined in Chapter Five. The analyses conducted in Chapters Four and Five employs the data collected from the Wave 1 survey (see Figure 1.1).

The second objective is to test the utility of gambling outcome expectancies and associated constructs to predict gambling behaviour. More specifically, respondents gambling behaviour 12 months from the first survey is employed as the criterion variable. The Theory of Planned Behaviour (TPB; Ajzen and Madden, 1986) is used as a framework to model gambling expectancies and to introduce the
constructs of normative beliefs, cognitive biases, and gambling intention. Of particular interest is whether intentions to gambling predict subsequent gambling behaviour and the role of gambling expectations, social influences (normative beliefs), and beliefs in skill (cognitive biases) in explaining gambling intentions. These findings and the associated theoretical implications are discussed Chapter Six.

The final objective, is to investigate the predictive versus the explanatory utility of gambling outcome expectancies, normative beliefs, and cognitive. The analyses draw on the data collected over the three waves of data collection and also allows issues identified in the previous studies to be further explored. Central to this chapter is the notion that gambling behaviours are not necessarily static and that gambling problems may either increase or decrease over time. The results from this study offer some preliminary findings that assist in understanding the temporal nature of gambling related beliefs and gambling problems.

First, the following chapter (Chapter Four) provides a review of the current multidimensional gambling motivation scales employed.
Chapter Four
Assessing Gambling Motivations:
Developing the Gambling Outcome Expectancy Scale
Chapter Five
The Relationship between Gambling Motivations and Gambling Behaviour
(Study 1B)
Chapter Six
Predicting Gambling Frequency:
The Role of Gambling Outcome Expectancies, Normative Beliefs and Perceptions of Control
(Study 2)
Chapter Seven
The Predictive Versus The Explanatory Utility of the Belief-Based Constructs
(Study 3)
Chapter Eight:
General Discussion
8.1 Chapter Overview

There is an emerging body of research that suggests gambling behaviour is determined by a diverse set of influences. However, this research is still predominantly focussed on explaining problem gambling and is typically conducted within cross-sectional designed studies. In contrast, the current series of studies were designed to assess the salient types of gambling-related beliefs and examine their utility in explaining and predicting gambling behaviour as it occurs across the continuum of involvement.

The findings from these studies serve two primary purposes. First, they enable a greater theoretical understanding of the role of gambling motivations in gambling behaviour. More specifically, the role of emotion, social, and financial aspects of gambling motivation have been explored in relation to gambling frequency, gambling problems, and changes in problem gambling risk status. By considering these different aspects of gambling motivation and associated beliefs concurrently, it is possible to identify the influences that may be involved in the progression to gambling problems and those aspect that are not. Moreover, the current findings provide some insights as to why some people are more likely to experience gambling related problems than others.

Second, these findings have direct relevance to harm minimisation education strategies employed at a general community level. Although the range and scope of gambling harm minimisation is much broader than educational initiatives, such approaches are, nonetheless, a central part in preventing gambling related harms. Interestingly, relatively little research has examined the role of personal perceptions towards gambling, the influences of significant others and the role of personal beliefs of gambling skill in determining gambling behaviour. Understanding the linkages between these constructs and gambling behaviour can inform the design of educational initiatives and the way they are deployed. To this end, this chapter provides a review of the overarching findings from the three studies and their specific relevance to harm minimisation education strategies.
8.2 Key Findings From The 3-Wave Longitudinal Study

The overarching aim of the three studies was to examine the role of gambling motivations in gambling behaviour. Of particular interest was whether specific aspects of motivation predicted or explained why people chose to gamble and why some, but not others, transitioned to increased levels of gambling risk. Although the findings from the three studies have already been discussed in relation to their directly relevant research, the findings can also be interpreted in light of the broader themes discussed in Chapters Two and Three. Also, the similarities and differences across the three studies will be discussed within the context of the major assumptions enunciated in the previous chapters.

8.2.1 Gambling motivations and gambling behaviour (Study 1)

The primary objective of the first study was to develop the Gambling Outcomes Expectancies Scale (GOES) to assess the relationship between gambling behaviour and the emotion, social, and economic aspects of gambling motivations. Of particular interest was the relative importance of non-economic and economic gambling outcome expectancies in explaining gambling problems. The findings from this first study supported the proposition that gambling problems are not primarily determined by optimistic expectations that gambling is a profitable activity. Rather, the perceived excitement, escape, and ego enhancement aspects of gambling emerged as having the more dominant associations with gambling problems. In other words, gambling problems were best explained by the perceptions of gambling as a way to experience excitement, promote self-importance and to escape from negative emotions. These findings are consistent with the contention that winning expectancies may not be important for those who gamble as a means to moderate undesirable emotional states (Wood & Griffiths, 2007; Young & Hodgins, 2009).

Another approach to examine whether gambling for affect regulation is a salient aspect of gambling problems is to determine the role of the same gambling outcome expectancies in explaining gambling frequency (Steward & Zack, 2008). Central to this premise is that gambling more intensely (frequently) may be related to internal rewards (emotion oriented expectancies) as well as external rewards (socialisation and chance of winning money). Conversely, problematic gambling could be primarily maintained by the need to moderate emotional states. The different pattern of association between the five facets of gambling expectancies and
gambling frequency and gambling problems provided some support for this proposition. Specifically, the findings from Study 1B indicated that the emotional (escape), monetary, and social expectancies independently contributed to the explanation of gambling frequency. In contrast, the emotion focussed dimensions of gambling expectancies (excitement, escape, and ego enhancement) were preeminent in explaining gambling problems. Taken together, it appears that gambling frequency is better explained by a diverse range of motivations, whereas gambling problems are predominately emotion oriented.

In addition to comparing the monetary and non-monetary dimensions of gambling motivations, an emphasis was also placed on differentiating the emotion oriented aspects of gambling outcome expectancies. This is important as it allows two different views of the role of gambling, as a mood modifier, to be explored. The first position is consistent with Jacobs’s (1987) contention that gambling is pursued as a distraction from unpleasant emotional states. From this perspective, the excitement experienced while gambling operates as a form of negative reinforcement (Wood & Griffiths, 2007). Namely, the excitement from gambling serves as way to escape (dissociate) from everyday problems as opposed to a way enhance positive affect. An alternative view is that excitement and escape function as separate types of motivation (Steward & Zack, 2008; Young & Wohl, 2009). Specifically, gambling for excitement (positive reinforcement), for relief from negative emotional states (negative reinforcement), or both, may help sustain continued gambling in the face of successive losses. The ability of the GOES to psychometrically differentiate these dimensions was the first step in being able to assess the role of excitement and escape as potentially different influences on gambling behaviour. More important, the findings from the first study support the contention that gambling for excitement and gambling for a sense of escape operate as related, but separate, types of motivation.

Together, these finding raise the possibility that the gambling motivations of those experiencing gambling related problems may be different to those who are gambling at non problematic levels. However, it was not possible to determine whether these differences in gambling motivation are the result of gambling (i.e., gambling related problems lead to the need to gamble more to deal with the associated stress) or whether pre-existing differences in gambling motivation
predisposed gamblers to a problem gambling trajectory. These two possibilities were further explored in Study 3.

8.2.2 Predicting gambling frequency (Study 2):

Before examining the efficacy of the emotion oriented expectancies to predict problem gambling, Study 2 was employed to test the ability of gambling outcome expectancies, normative beliefs, and cognitive biases to predict gambling frequency. The purpose of including these diverse types of beliefs in one model is that it allowed the relative importance of different influences on the decision to gamble to be directly explored. More specifically, according to the Theory of Planned Behaviour (TPB; Ajzen & Madden, 1987), the propensity to enact a behaviour is not only governed by perceptions towards the activity, but also by the perceptions of significant others and the belief in one’s own ability to perform the behaviour. The findings from Study 2 supported the view that personal perceptions towards the outcomes of gambling, the perceived influence of others and beliefs in skill converge to predict gambling frequency. Thus, these findings support the utility of the TPB in predicting gambling behaviour.

One of the novel findings from Study 2 was that both the low risk and at-risk gamblers were, in part, influenced by social factors. For instance, the perceptions of significant others gambling was independently and positively related to the gambling intentions for both cohorts. This implies, irrespective of problem gambling status, the decision to gamble is congruent with people’s perceptions of their family and friends gambling attitudes and gambling behaviour. Perhaps this reflects that an interest in gambling is, in general, influenced by significant others. This could include early influences from family or the influences over time of family and friends. Nonetheless, this does not suggest that gambling problems are directly related to the gambling problems of family and friends. Rather the frequency of gambling is associated with the perceptions of how often family and friends gamble; not other’s problem gambling status. The role of social influences in problem gambling was explicitly examined in the third study.

Despite the perceived social influences consistently relating to gambling intention, the prominence of gambling expectancies and cognitive biases differed for the low risk and at-risk gambling groups. In relation to the low risk gamblers,
gambling intentions were also informed by beliefs pertaining to the anticipated outcomes of gambling. That is, the more favourably low risk gamblers perceived the emotional, social, and financial outcomes of gambling and the more they believed others approved of gambling (and gambled), the more the respondents intended to gamble and subsequently gambled. These findings were largely consistent with Study 1B indicating gambling frequency is determined by a broad range of influences. Notably though, beliefs in skill did not independently explain gambling intentions or behaviour.

For the at-risk cohort, the belief in skill and the perceptions of other’s gambling informed gambling intentions. In other words, the confidence in winning at gambling and the perceived influence of others overshadowed the effects of the anticipated benefits (or costs) of gambling. Perhaps, for this group, gambling is a prominent aspect of their social lives and their relatively high gambling frequency (i.e., gambled more frequently than the low risk group) leads to an elevated sense of confidence in gambling knowledge and skill. Nonetheless, while gambling intentions predicted subsequent gambling behaviour, it is unlikely these gamblers intended to exacerbate their gambling problems. Rather, the results indicate that gambling is likely to be continued as a social activity with the hope that an improvement in their gambling skills may provide an opportunity to recoup previous losses, or at least, help minimise losses.

The results from the extended models (i.e., inclusion of the Wave 2 belief-based constructs) provided another perspective on the potential differences between the low risk and at-risk gambling cohorts. For instance, for the low risk gamblers, the discrepancy between prior plans to gamble (at Wave 1) and actual gambling behaviour (at Wave 2) was best accounted for by changes in perceived social influences. Conversely, for the at-risk gamblers, the difference between prior plans to gamble and subsequent gambling behaviour was best explained by a change in emotional oriented gambling outcome expectancies (excitement and ego enhancement). Taken together, this indicates that gambling behaviour that departs from prior gambling intentions is largely socially determined for low risk gamblers, whereas it appears to be predominately related intrinsic reasons (i.e., perceived emotional rewards) for at-risk gamblers.
8.2.3 Predicting and explaining gambling problems (Study 3)

The association revealed between belief-based constructs and gambling behaviour in the previous two studies was further examined in the final study. Specifically, the nature of the relationship between gambling outcome expectancies, in particular the emotion oriented measures, and gambling problems was further scrutinised. Also, the role of perceived social influences and personal beliefs in gambling confidence was examined in relation to problem gambling. In essence, the main aim was to determine whether the associations identified in the previous studies could be further elucidated by examining their temporal relationship to gambling problems.

The relationship between emotion oriented gambling expectancies and gambling problems in Study 1B and, the latter finding in Study 2, suggest that gambling may be perpetuated by the desire to manage affect states. However, these findings do not directly answer whether prior gambling motivations are a risk factor in the development of gambling problems or if gambling to regulate mood states is a consequence of gambling problems. Study 3 provided some support for the premise that gambling, to manage undesirable emotional states, may predispose a person to problematic gambling. In particular, the ability of the emotion focused motivations to predict the transition from low risk gambling to moderate risk or problem gambling is congruent with this assumption. This was contrasted by the absence of differences on the other baseline measures. Specifically, the belief-based measures of monetary and social expectancies (external rewards) did not differentiate the remain-low risk from the increased risk group. Also, there were no significant differences between the remain-low risk group and increased group on the perceptions of family and friends gambling and confidence in gambling skill. In general, these findings concord with the qualitative findings reported in Chapter Two (e.g., Wood & Griffiths, 2007; Ricketts & Macaskill, 2003) which revealed those who were gambling problematical were aware they are unlikely to recoup their financial losses but continue their gambling as a means to moderate emotional states.

Also of interest were the findings that the low risk gamblers, who increased in gambling risk, could be differentiated on excitement, escape, and ego enhancement. That is, in addition to extending the findings from study 1B, in a longitudinal design, these results indicate the anticipated positive and negative reinforcement aspects of
gambling contribute to making gambling a difficult behaviour to moderate. In other words, rather than gambling only serving as a way to manage negative emotions, those who are reliant on gambling as a way to increase positive emotional states may also be at increased risk of experiencing gambling related problems.

In terms of the explanatory model, cognitive biases emerged as the dominant dimension of beliefs to co-vary with gambling risk levels. Those who increased from low risk to at-risk shared a concomitant change in their confidence in skill. Similarly, the problem gamblers who showed a decrease in risk level reported a decline in the perceptions of skill. Although it is not possible to determine whether the changes in skill are simply a reflection of the justification for their change in behaviour, the changes are consistent with a cognitive perspective of problem gambling. The salience of these changes is further enhanced when considered in light of the other belief-based measures. That is, if the change in perception of skill was only a justification for a change in behaviour, then the other dimensions of gambling beliefs should have also changed.

One of the major differences to emerge between predicting gambling frequency (Study 2) and predicting gambling problems (Study 3) was the association between normative beliefs and gambling behaviour. For instance, the perception of others gambling behaviour (and approval of gambling) was a dominant influence in the gambling frequency models for both low risk and at-risk gamblers. However, when the influence of significant others gambling is directly assessed, in relation to gambling problems, the association diminished. In other words, the consistency between views of significant others gambling and people’s own gambling behaviour did not help explain why gambling became problematic for some and remained “social” for others. This tendency was also reflected in the social dimension of gambling outcome expectancies. Namely, the perceived social utility of gambling was not a predictor of an increase in gambling risk status for the low risk gamblers.

The failure of social influences or expectancies to predict or explain gambling problems does not necessarily imply that social aspects of gambling are not an important component of problematic gambling. As suggested by Thomas, Allen, et al. (2009), the social dimensions of gambling may be central to gambling behaviour regardless of a person’s problem gambling status. In other words, it is possible the
social dimensions of gambling are equally important to both non-at-risk gamblers and potential problem gamblers and, as such, are an important part of understanding gambling behaviour.

In summary, the major strength of the longitudinal study was the ability to further scrutinise the relationships identified in Study 1B. For instance, while the cross-sectional findings are informative in understanding the reasons for gambling and gambling problems more specifically, it was not possible to examine the direction of these associations. The ensuing analyses revealed there is some support that emotion oriented gambling motivations may operate as risk factors of gambling problems. In contrast, it appears that gambling, itself, may lead to an inflated sense of skill that makes gambling a difficult behaviour to change. In relation to social influences, although not be directly implicated in gambling problems, they may nevertheless be an important aspect to consider in the explanation of persistence gambling behaviour. The ensuing section will discuss the relevance of the previous findings within the context of educational initiatives.

8.3 Findings in Relation to Educational Initiatives

The purpose of education initiatives is to provide relevant information to potential and current consumers about gambling so they can make informed choices about their level of gambling involvement. Although these initiatives include generic information on recognising gambling problems and how to seek help, a central aspect of education strategies is to engender realistic expectation about winning at gambling. As previously discussed, this rationale centres on the notion that consumers will make reasoned and rational decisions on the basis of their understanding that gambling is not a way to make money. However, the results from the current studies indicate that the emotional and social aspects of gambling should also been considered. Although direct recommendations about the efficacy of specific gambling educational strategies cannot be advanced from the current studies’ findings, it is possible to draw on the observations and suggest several theoretical applications.

The major finding of the current studies was the role of non-financial expectancies in sustained gambling behaviour. Although this does not mean that education about the profitability of gambling is misplaced, it does suggest
educational initiatives need to be tailored to the many and varied reasons people gamble and may find gambling a difficult behaviour to moderate. Also, in addition to suggesting ways in which emotional and social factors may be considered, the potential of role gambling biases is also commented on. However, it is important to note that the ideas raised are not about ameliorating problem gambling. Rather, the suggestions are advanced within the context of preventing a transition to problematic levels of gambling or assisting in moderating gambling behaviour.

The dominance of the emotion oriented motivations across the three studies suggests gambling, as a way to moderate emotional states, should feature strongly in education initiatives. One approach is to challenge or counter-market some of the ideas portrayed in gambling advertising (Lee, 2013). For instance, the mass media campaigns that seek to increase awareness about problem gambling could caution against the notion that if gambling is fun and exciting that it is risk free. Wu and Tang (2012) argued that moderating gambling attitudes and perception towards gambling may provide a way to correct idealistic images of gambling and promote less favourable views of gambling as a safe and social form of entertainment. The findings from the current study indicate that messages could be made more specific and focus on the contention gambling for excitement and fun does not necessarily imply it is a healthy or safe behaviour. Another approach is to increase the awareness that gambling for a good time may be just as risky as using gambling to escape. In other words, gambling for the buzz can be just as addictive as gambling for other reasons. Also, the notion that gambling problems only happen to others (i.e., those with emotional vulnerabilities) could be challenged by suggesting it is not only those with emotional needs that experience difficulties with their gambling.

Other researchers have suggested that gambling could be encouraged to be seen as only a part of an individual’s leisure activity and not the sole form of socialisation or entertainment (Pantalon et al., 2008; Shead & Hodgins, 2009). Again, perhaps this could be made more salient by specifically referring to the importance of engaging in different activities for the challenge or excitement rather than simply derive this solely from gambling. A further idea that has been raised (e.g., Cummins et al., 2009) is reminding consumers not get carried away with the buzz of gambling. One simple way of conveying these types of messages, to those already gambling, would be to place prompts (short sentences or sayings) on the gambling help
information cards placed in venues. This may help gamblers think about other activities they could be seeking out instead of gambling.

Although the social aspects of gambling, as reflected in normative beliefs and social expectancies, did not feature in the problem gambling models, these influences were prominent in the gambling frequency models. This suggests social influences are potentially an important aspect to consider for those attempting to moderate their gambling behaviour. For example, it may be difficult to reduce gambling problems without decreasing the level of gambling behaviour. Therefore, identifying aspect that makes gambling difficult to reduce, in terms of frequency, may be helpful in moderating problem gambling. As social aspects of gambling were found to uniquely relate to gambling frequency and the intentions to gamble this suggests the social context of gambling may be especially important. In some ways this is against conventional wisdom, which holds that social gambling is safe gambling. In contrast though, the social aspects of gambling may be the very aspect of gambling that makes gambling a difficult behaviour to resist due to the strong social influences which help maintain the behaviour. Hence, it may be helpful to alert gamblers to the fact that they may need to think about the role of their social circle and what other activities could be pursued if attempting to change their behaviour.

Despite cognitive biases not dominating the results, they still made a contribution to the explanation of gambling behaviour. Specifically, cognitive biases changed in concert with gambling problems as opposed to cognitive biases preceding a change in problem gambling status. This reflects the view that the relationship between cognitive biases and behaviour may be more reciprocal in nature than causative. Therefore, reminding consumers that practice at chance determined games will not increase your chances of winning may help prevent excessive betting. In other words, strategies that attempt to stall an increase in the perception of skill may help circumvent behaviour from escalating to a point that problems begin to accrue. A potential application is the use of within session warning messages on EGMs to remind consumers that practice does not make perfect.

The current findings also indicate that information that targets erroneous perceptions, as opposed the more generic information about the profitability of gambling, would be beneficial. For instance, although gambling related beliefs were
found to be related to change in gambling problems, the perceived financial utility was not. In other words, an increase in cognitive biases does not mean consumers are becoming more optimistic of making a profit. Therefore, targeting beliefs about profitability may not be as salient as addressing the beliefs about perceived skill.

In summary, the role of educational initiatives is to inoculate consumers against developing problem gambling behaviour. Although the measures typically employed to obtain this goal are directed towards informing consumers about the chances of winning at gambling, the rationale of gambling strategies concord with a multifaceted approach. Specifically, Blaszczynski et al. (2004) suggest that measures directed toward changing values, attitudes, and beliefs are consistent with this approach. As discussed, the current findings provide support for this approach and, more importantly, specific information on how such approaches could be tailored to enhance their effectiveness.

8.4 Conclusions

The current series of studies lend support to the notion that a diverse set of motivations are associated with gambling behaviour. In addition, the current studies have furthered the understanding of the temporal nature of these relationships by differentiating between related, but different, aspect of gambling motivation. Namely, these findings help to explain why gambling may continue to be pursued despite an awareness that problems are beginning to accrue. Arguably, one of the more important aspects of these findings, is they relate to community members gambling behaviours as they occur across the spectrum of involvement. This contrasts much of the existing motivation research that is conducted with university students or small convenience samples.

Nonetheless, there are some limitations with the current sample. Although these of have been mention in previous chapters, there are some points that should be reiterated. The first is concerning the sample characteristics. The extent the current studies’ findings may generalise to other community samples may be limited because of the relative high participation rate of retirees. This bias was further exacerbated by the attrition rate in the subsequent studies. Although there was no direct evidence for this to be a concern, it remains unknown whether the same results would emerge in more diverse population samples. Another limitation, also related to the attrition rate,
is the relative small sample at Wave 3 (n = 495). As a consequence, it was not possible to delineate the sample by preferred forms of gambling to examine the findings more closely. Perhaps future studies, which employ measures to enhance the retention, could scrutinise the role of specific aspects of gambling related beliefs in relation to changes in gambling behaviour.

Finally, a limitation that is common to all repeated measure studies is the possibility that unforeseeable events may impact on the respondents’ between survey periods. For the current series of studies, the influence of the global financial crisis (GFC) may have affected respondents’ views of gambling and more generally cautiousness about finances than would typically be expected. Although the first wave of data collection occurred at the beginning of the GFC, the GFC endurance over the years may have resulted in the respondents reporting more subdued expectancies about financially risky behaviours, and gambling in particular. This appears to be reflected to some extent in the gamblers’ beliefs that remained at the low risk gambling designation. Specifically, their general perception of gambling declined over the three waves. Nonetheless, this was not reflected in the other cohorts. Whether the decrease in gambling beliefs for the low risk was related to the GFC or a reflection of a genuine decline in an interest in gambling is not possible to determine.

Overall, the current studies have provided insights into the relationship between gambling motivations and behaviour not otherwise explored. These novel findings have both theoretical and practical implications that support the contention that gambling is a complex behaviour that needs to be considered using multi-dimensional models. Specifically, gambling behaviours are related to a diverse set of perceptions that reflect anticipated emotional and social outcomes from gambling, as well as, the influences of others and beliefs in one’s own skill. However, the economic perceptions towards gambling were less pronounced in explaining gambling behaviour. Ironically, if it was not possible to win at gambling then it would cease to be gambling.
EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR

References


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCI ES, CHOICE AND GAMBLING BEHAVIOUR


Dickerson, M., & Baron, E. (2000). Contemporary issues and future directions for research into pathological gambling. Addiction, 95(8), 1145-1159. doi: 10.1080/09652140050111087


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


EXPECTANCIES, CHOICE AND GAMBLING BEHAVIOUR


### Gambling Opinions and Experiences Survey

Please mark one of the following boxes that best describe **how often you have participated** in each type of gambling in the last twelve months.

<table>
<thead>
<tr>
<th></th>
<th>Never or Rarely</th>
<th>Once a Year</th>
<th>Less than Monthly</th>
<th>Monthly or More</th>
<th>Weekly or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Played cards for money</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Bet on horses or dogs races</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Bet on sports</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Bet on gambling tables at a casino</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Played pokies at a casino</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Played pokies at pubs or clubs</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Played Casino games on the internet for money</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Played Bingo</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Bought lottery tickets (e.g. lotto, keno, scratchies)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Some form of gambling not listed above (please specify):</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

11 If you gamble, how long do you typically spend gambling? (If you do not gamble please go to item 15)

- Less than 1 hour ☐
- 1 to 2 hours ☐
- 2 to 3 hours ☐
- 3 to 4 hours ☐
- 4 to 5 hours ☐
- 5 hours or more ☐
- Other __________

12 Please indicate what your **preferred or favourite** form of gambling is (tick one)

- Casino table games ☐
- Online gaming (casino style) ☐
- Pokies ☐
- TAB ☐
- Betting (trackside) ☐
- Sports or Race betting (online/phone) ☐
- Lotteries/Keno ☐
- Bingo ☐
- Other __________

13 What are the main reasons you gamble?

_________________________________________________________________________

_________________________________________________________________________

14 What would motivate you to gamble?

_________________________________________________________________________

_________________________________________________________________________

15 Why do you think people gamble?

_________________________________________________________________________

_________________________________________________________________________

16 What do you consider to be the positives of gambling (if any)?

_________________________________________________________________________

_________________________________________________________________________

17 What do you consider to be the negatives of gambling (if any)?

_________________________________________________________________________

_________________________________________________________________________
While thinking about your favourite type of gambling please indicate how strongly you agree with the following statements.

*If you have never had a gamble imagine how you might feel if you were to gamble for money.*

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It is exciting to play for money.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gambling is a rush.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Gambling is a way to win big money immediately.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Winning feels great.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Gambling is about enjoying intensive feelings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Gambling gives a feeling of being really alive.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Gambling provides a good chance to win big with small money.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Gambling is a way to forget everyday problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Gambling is the best way to relax.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Gambling can help clear your mind.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Gambling helps release tension.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Gambling provides an escape from responsibilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Gambling is a way to solve financial problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>It is important to make time to gamble.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I would not like my time gambling being reduced or interrupted.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>It is easy to make money at gambling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Gambling is about feeling like an expert.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Gambling produces a feeling of importance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Gambling is about feeling in control.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Gambling is cool.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Gambling produces a feeling of being powerful.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Gambling is a way to make big money.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Gambling is a social occasion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Provides an opportunity to be with similar people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Gambling is a way to meet new people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Provides an opportunity to get along with others favourably.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Gambling provides an opportunity to be with friends.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Please indicate how often you plan to participate in the following activities in the future.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never or Rarely</th>
<th>Once a Year</th>
<th>Less than Monthly</th>
<th>Monthly or More</th>
<th>Weekly or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I intend to play cards for money</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I plan to bet on the horses or dogs races</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I intend to bet on sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I plan to buy a lottery tickets (e.g. lotto, keno, scratchies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I intend to bet on table games at a casino</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I plan to play the pokies at a casino</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I intend to play the pokies at pubs or clubs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I plan to play Bingo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I intend to play Casino games on the internet for money</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I plan to gamble on another form of gambling not listed above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### The following includes statements about people you know. Please indicate how strongly you agree with each of the following statements.

1. Most of my friends gamble sometimes                                 | Simply Disagree | Disagree | Slightly Disagree | Slightly Agree | Agree | Strongly Agree |
   |                                                                         |                 |          |                   |                |       |               |
2. Most of my friends approve of gambling                               |                 |          |                   |                |       |               |
3. My friends often go out to places where gambling occurs              |                 |          |                   |                |       |               |
4. My family approves of gambling                                       |                 |          |                   |                |       |               |
5. People in my family gamble sometimes                                 |                 |          |                   |                |       |               |
6. My friends disapprove of gambling                                    |                 |          |                   |                |       |               |
7. People in my family often go to places where gambling occurs         |                 |          |                   |                |       |               |
8. My friends spend $20 or more per week on gambling                    |                 |          |                   |                |       |               |
9. My family members spend $20 or more per week on gambling            |                 |          |                   |                |       |               |
10. My family disapprove of gambling                                    |                 |          |                   |                |       |               |
11. My friends spend $100 or more per week on gambling                 |                 |          |                   |                |       |               |
12. My family members spend $100 or more per week on gambling          |                 |          |                   |                |       |               |
13. Generally I try and fit in with what my family want                 |                 |          |                   |                |       |               |
14. Generally I try and fit in with what my friends want                |                 |          |                   |                |       |               |
The following statements are about your thoughts on your favourite type of gambling. Please indicate how strongly you agree with each of the following.

*If you have never had a gamble imagine how you might think if you were to gamble for money.*

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I think of gambling as a challenge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>My knowledge and skill in gambling contribute to the likelihood that I will make money</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>My actions can affect the outcome of my bet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If I am gambling and losing, I should continue because I don’t want to miss a win</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I should keep track of previous winning bets so that I can figure out how I should bet in the future</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>“Near misses” or times when I almost win suggest if I keep playing I will win</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Gambling is more than just luck.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Gambling wins are evidence of skill and knowledge related to gambling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I have a “lucky” technique that I use when I gamble</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>In the long run, I will win more money than I will lose gambling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Even though I may be losing with my gambling strategy or plan, I must maintain that strategy or plan because I know it will eventually come through for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>There are certain things when betting (for example, tapping a certain number of times, holding a lucky coin, crossing fingers, etc.) which increase the chances of winning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>If I lose money gambling, I should try to win it back</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Those who don’t gamble much don’t understand that gambling success requires dedication and a willingness to invest some</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Where I get money to gamble doesn’t matter because I will win and pay it back</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I can (or could) accurately predict when a “win” will occur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Gambling is the best way for me to experience excitement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>If I continue to gamble, it will eventually pay off and I will make money</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I have more skill and knowledge related to gambling than most people who gamble</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Losing at gambling, doesn’t seem as bad if I don’t tell my loved ones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>People should keep the same bet even when it hasn’t come up lately because it is bound to win.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As you read each of the following statements, please indicate whether it has applied to you personally in the last 12 months.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Almost always</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you bet more than you could really afford to lose?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. When you gambled, did you go back another day to try and win back the money you lost?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Have you ever borrowed money or sold anything to get money to gamble?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Have you felt that you might have a problem with gambling?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Has gambling ever caused you any health problems, including stress or anxiety?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Has your gambling caused any financial problems for you or your household?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Have you felt guilty about the way you gamble or what happens when you gamble?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please indicate how often you expect to participate in the following activities in the future.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never or Rarely</th>
<th>Once a Year</th>
<th>Less than Monthly</th>
<th>Monthly or More</th>
<th>Weekly or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Play cards for money</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Bet on the horses or dogs races</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bet on sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Buy a lottery tickets (e.g. lotto, keno, scratches)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Bet on table games at a casino</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Play the pokies at a casino</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Play the pokies at pubs or clubs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Play Bingo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Play Casino games on the internet for money</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Gamble on another form of gambling not listed above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Following are some general questions about you. This information is to help ensure we have included people from a wide range of backgrounds.

Your age □ □

What is your sex: □ female □ male

Place of residence post code: ______________________

Please indicate your cultural background ______________________

Do you identify with your cultural heritage? Yes □ No □

What best describes your employment status? (please tick one box only)

Working Full-time □ Working Part-time □ Home Duties □
Student □ Unemployed □ Retired □ Other________

Please indicate your annual income.

Less than $20,000 □ $20,001 – 35,000 □ $35,001 – 50,000 □
$50,001 – 65,000 □ $65,001 – 80,000 □ $80,001 – 95,000 □
$95,001 – plus □

Please mark which of the following best describes your most current education level.

Primary School □ Secondary School □ Trade/ TAFE Cert □
Tertiary Degree □ Post Grad Degree □ Other________

This is the end of the questionnaire. Thank you for your time and assistance.
I would like to ask if you are prepared to be involved in a follow-up survey in approximately 12 months time. If so, could you please provide contact information, either an email address or postal address (only need to provide one contact method). Please be assured the contact information provided will only be used to contact you for the follow-up survey. Your contact information will not be used in the reporting of the results and will not be made available to third parties.

Name (first name only)__________________________email:____________________.
Or postal address:________________________________________________________