Individual Vulnerability and Dissociative-Like Experiences in Regular and Problem Gamblers

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Declaration

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Abstract

Problem EGM gambling is an increasingly prevalent public health concern because of its associated psychological, financial and social problems. In recent years there has been a heightened interest in the psychology of EGM play, and more specifically, why a subgroup of people appears to lose control over their gambling. This thesis has been guided by the literature that suggests a subgroup of people may be more vulnerable to developing gambling problems than others, for example, Durand Jacobs’ General Theory of Addiction (1986), and the emotionally vulnerable subgroup of problem gamblers in Blaszczynski and Nower’s (2002) Pathways Model of Problem Gambling. The primary goal of the research was to explore people’s phenomenological experiences during EGM gambling, in particular, the occurrence of dissociative-like states, and how excessive gambling might be linked to people’s psychological states.

The first study involved a preliminary investigation of the occurrences of dissociative-like experiences during EGM play. The findings from the study suggested that South Australian gamblers do report having experienced dissociative-like experiences during gambling. In particular, participants were more likely to report dissociative-like experiences during EGM gambling. The findings from the preliminary study provided the basis for subsequent studies. A qualitative study ($N=18$) was then conducted to explore the phenomenological experiences of problem EGM gambling and was analysed using Interpretative Phenomenological Analysis (IPA). The main findings suggested that the problem gamblers’ histories were characterised by traumatic/stressful life experiences, and that they used gambling as a maladaptive form of coping.

A survey-based study of regular and problem EGM gamblers ($N=190$) was then conducted. The study investigated specific elements of Jacobs’ (1986) General Theory of Addictions, more specifically, the emotional and physiological vulnerabilities of EGM gamblers and their within-session experiences of dissociation. The study also examined the links between dissociation and coping styles with impaired control over gambling and a number of hypothesised ‘protective’ factors. The results demonstrated that problem gamblers were more likely than other categories of gamblers to report psychological and physiological vulnerabilities. The results also highlighted the importance of impaired control and dissociative-like experiences in problem gambling. There was also evidence to
suggest that problem gamblers may have lower levels of protective factors such as self-esteem and social support.

A final pilot study was based on the thesis’ earlier findings that highlighted the importance of ‘narrowed’ attention in the fulfilment of ‘a need to escape’ during EGM gambling. This concept of ‘narrowed’ attention was likened to ‘trance’ like states or altered states of consciousness. An innovation of the final study was that it attempted to obtain quantitative data on the phenomenological experiences of both regular and problem EGM players. The results from this final study suggested that EGM gamblers may experience alterations in consciousness during play, however, further research is needed to qualify this finding. The findings from each of the studies were then integrated and discussed in terms of the vulnerability model of problem EGM gambling, and particular attention was afforded to the clinical implications of the findings.
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General Introduction

Gambling has been an integral part of Australian society and its economy since early settlement because of its popularity as a form of entertainment and its economic benefits to industry and government. Gambling’s popularity is evidenced by the fact that it was estimated in 2002 that between 80% and 90% of adult Australians had participated in one form of gambling or another (Delfabbro, 2008). Between 24 to 39% of this percentage of adult Australians had regularly participated in a gambling activity. Over the last ten years, all Australian States have witnessed rapid growth in gambling revenue, largely due to the legalisation of new forms of gambling, and the expansion and construction of casinos (e.g., the Crown in Melbourne and Star City in Sydney). The total net gambling expenditure in Australia during 2005-2006 was $17.57 billion, and approximately 60% of the total expenditure was from EGM gambling (Delfabbro, 2008). As in other countries, the rise in Australian gambling participation is widely believed to be due to the increased ease of accessing gambling activities (Goudriaan, 2004).

In the Australian Productivity Commission’s (1999) survey, it was reported that the most popular gambling activities included lotteries (60%), electronic gaming machines (EGMs) (39%), scratch tickets (46%) and racing (24%). In more recently published prevalence studies conducted in South Australia (2005; South Australian Department for Families and Communities, 2006), New South Wales (2006; AC Nielsen, 2007) and Queensland (2003; Queensland Government, 2007) reported that lotteries (52%, 56% and 67% respectively), EGMs (30%, 31% and 32% respectively), scratch tickets (SA 24% and QLD 26%, NSW not available) and racing (19%, 20% and 16% respectively) were the most popular forms of gambling. According to Delfabbro (2008) these figures suggest that there is a similar pattern of gambling participation across different Australian jurisdictions, although it appears that the overall participation rates appear to have decreased since the Productivity Commission’s 1999 national survey.

The majority of the general population gamble in a recreational capacity and experience no or few adverse consequences. However, for a subgroup of individuals, gambling can become more than just a simple form of entertainment and can lead to difficulties which can be financial, personal, interpersonal, vocational, and/or legal in nature. The Productivity Commission’s survey (1999) found that the proportion of regular
(or weekly) gamblers in the general population experiencing significant gambling-related problems was around 15%.

The current thesis was interested in examining the psychology of EGM play because EGMs are a popular gambling activity which are both a major cause of problem gambling and appear to be more likely to attract vulnerable people than other gambling activities. A number of different psychological theories have been advanced to account for problem gambling (Ricketts & Macaskill, 2003), one of which is Jacobs’ (1986) General Theory of Addictions. Jacobs’ (1986) theory attempts to explain why some people may be more vulnerable to the development of gambling problems than others. Jacobs’ (1986) theory also appears to provide a model for conceptualising the emotionally vulnerable category of gamblers in Blaszczynski and Nower’s (2002) well known Pathways Model of Problem Gambling (Pathway 2). These models suggest that problem gambling may be conceptualised in terms of a vulnerability-stress model, and also allow that there may be variables that act as potential buffers/protective factors against the development of problem gambling. There has been no Australian research to date that has investigated the core features of Jacobs’ (1986) General Theory of Addictions, or whether problem gamblers experience dissociative-like experiences during gambling.

The current thesis explored the psychology of regular EGM players within a vulnerability-stress model, with particular reference to Jacobs’ (1986) model, and also examined the phenomenology of EGM playing. The purpose of the work was to gain a greater understanding of the predisposing factors described by Jacobs’ (1986) General Theory of Addictions and whether regular gamblers report dissociative-like experiences during gambling. Thus, the main objectives of the research can be summarised as follows:

- **To obtain frequency data on dissociative-like experiences during gambling within a community sample.** Do regular gamblers report dissociative-like experiences during gambling? Are these experiences more likely to be associated with certain forms of gambling? Does the frequency of dissociative-like experiences vary across different levels of gambling severity?

- **To obtain ‘insider’ accounts of problem gambling.** How do problem gamblers understand their experiences? Do problem gamblers describe experiences similar to those proposed by Jacobs (1986)?
• To examine a vulnerability model of problem gambling and the role of impaired control and potentially protective/buffering factors. Do South Australian regular gamblers fit a vulnerability model of problem gambling? Does impaired control over gambling fall within a vulnerability framework? Are there variables that are protective/buffering against the development of problem gambling? What is the relationship between impaired control and risk factors of problem gambling such as depression, dissociation and maladaptive coping?

• To systematically describe regular gamblers’ within-session EGM experiences. What do non-problem, moderate risk and problem gamblers experience when playing EGMs? Is the phenomenological experience of playing EGMs different from a normal waking state? Is the phenomenological state experienced during EGM play consistent with an altered state of consciousness, as has been speculated?

**Mixed methods framework of thesis**

The thesis employed a mixed methods approach to addressing the objectives described above. Over the past decade there has been an increased interest in the mixed methods approach and its potential in psychological research (Irwin, 2008; Teddlie, Tashakkori, & Johnson, 2008). However, there is substantial debate as to whether qualitative and quantitative measures complement each other (Elliott, Fischer, & Rennie, 1999). Pragmatists usually form the research questions before the methods since every method has its own strengths and weaknesses. The choice of methods is consequently based on the most appropriate combinations in order to answer particular questions (Tashakkori & Teddlie, 1998). A common method utilised in this approach is triangulation, which compares the results of two or more methods of data collection (or data sources) while examining the same phenomena (Mays & Pope, 2000). Triangulation has also been referred to in relation to the use of multiple methods within one study (Tashakkori & Teddlie, 1998). A mixed methods approach was essential in the current project because it provided the project with the scope to produce new insights and to validate findings through the use of several sources of information (Plano Clark, Creswell, O’Neil Green, & Shope, 2008). Axinn and Pearce (2006) reported that research could be designed to combine elements of two or more distinct methods in either sequentially or simultaneously.
All of the studies were designed to meet the research objective of obtaining a deeper understanding of the psychology of problem EGM players and their within-session gambling experiences. Data were collected in a sequential manner with a small quantitative study first being conducted, which was followed by a qualitative study and a further two quantitative studies. Since the project aimed to explore problem gamblers’ experiences and whether they were consistent with Jacobs’ (1986) theory, a qualitative study was conducted prior to a major quantitative study. Neale, Allen and Coombes (2005) argued that qualitative work can be performed as a preliminary to quantitative research, as performed in the current research. The data analysis and integration of findings occurred after each study had been analysed separately, and is compared and contrasted in the final discussion (Hanson, Creswell, Plano Clark, Pertska, & Creswell, 2005). Equal priority was given to the major quantitative (study 3) and qualitative findings (study 2) in the final discussion. This is because Study 1 was a preliminary study and Study 4 was originally only a pilot investigation.

![Sequential Mixed Methods Design](image)

*Figure 1* Sequential Mixed Methods Design

**Structure of dissertation**

In order to address the research objectives the thesis is divided into three sections. The first section (Section A, Chapters one and two) contains a detailed review of the existing literature surrounding problem gambling and the various theories of problem gambling. Within Chapter one, the first sections (1.1-1.3) provide an overview of some of the definitions of problem gambling and how it is assessed. The following sections (1.4-1.5) present the prevalence of problem gambling and its association with gender, age and EGMs. The final section of Chapter one (1.6) describes the impacts of problem gambling. The second chapter in Section A (Chapter two) begins by briefly describing the Psychoanalytic Theories of gambling and the role of personality and impaired control in gambling (2.2-2.4). This is followed by a summary of the behavioural explanations of gambling (2.5), then the role of arousal (2.6) and cognitive biases and heuristics in
gambling (2.7). The last sections of Chapter two (2.8-2.9) contain a description of the conceptualisation of gambling as an addiction, and also a summary of some of the integrated models of problem gambling; including summaries of Jacobs’ (1986) General Theory of Addiction and Blaszczynski and Nower’s (2002) Pathways Model of Problem Gambling.

Chapter three briefly describes a preliminary study that was conducted into the frequency of dissociative-like experiences during gambling in the South Australian community. Section B (Chapters four, five, six and seven) then describes a qualitative investigation into the psychology of problem EGM gambling; this study was separated into four chapters because of the substantial volume of material obtained from the study. Chapter four begins by providing a justification for the use of a qualitative approach, a description of Interpretative Phenomenological Analysis (IPA) and the aims of the study (4.2-4.5). A detailed description of the methodology used in the study is then provided (4.6). Chapter five reports the findings of the qualitative analysis in relation to the personal backgrounds of participants and concludes with a brief discussion of the findings. The second chapter in Section B (Chapter six) reports the findings in relation to the development of problem gambling and the within-session gambling experiences, and is again followed by a brief discussion of the findings. Chapter seven contains both the findings and a discussion related to the respondents’ perceptions of the impact of problem gambling on their lives and behaviour.

Section C (Chapters eight, nine and ten) contains two quantitative studies that were conducted. Chapter eight describes a quantitative study that examined specific elements of Jacobs’ (1986) General Theory of Addictions and the role of impaired control. The study also examined the associations between coping styles and some of the variables that were hypothesised to have a protective or buffering effect in problem gambling. Chapter nine then describes a pilot study that was conducted to examine the phenomenological experiences of regular and problem EGM gamblers’ play. The study was particularly interested in investigating whether EGMs may induce altered states of consciousness.

The final chapter of the thesis (Chapter 10) integrates the findings from each of the studies and interprets them within the framework of Jacobs’ (1986) theory and Blaszczynski and Nower’s (2002) Pathways Model of Problem Gambling. Chapter 10 also discusses the theoretical, forensic, and clinical implications of the work. The
methodological considerations of the project are also discussed and recommendations for future research are provided.


SECTION A: LITERATURE REVIEW

Chapter 1

The Psychology of Problem Gambling: An Overview

1.1 Overview of Section A

Chapter one of the literature review provides a definition of problem gambling and discusses how problem gambling is measured. Prevalence rates of problem gambling are then reported, which is followed by a description of problem gambling across different gambling modalities and demographics. The chapter concludes by discussing some of the psychosocial consequences of problem gambling. The second chapter briefly discusses the proposed causes of problem gambling and the literature on some of the variables consistent with Jacobs’ (1986) and Blaszczynski and Nower’s (2002) models of problem gambling, for example, trauma/life stress, coping styles and dissociation.

1.2 Conceptualisation and Definitions of Pathological Gambling Behaviour

A variety of terminology has been used to describe people who are negatively affected by gambling. According to Delfabbro (2008), North America, Europe and New Zealand primarily use terms such as ‘compulsive’ or ‘pathological’ gambling. These terms have been used interchangeably in the literature and in general refer to gamblers who are perceived to be at a later stage in their gambling career or who have a greater degree of problems and are clinically diagnosed as ‘pathological’ gamblers (Lesieur, 1992; Neal, Delfabbro, & O’Neil, 2005). By contrast, in Australia, the preferred term is ‘problem’ gambling which has frequently been applied to levels of gambling that are associated with either an earlier stage of problem development, or individuals with fewer gambling-related problems (Delfabbro, 2008; Neal et al., 2005; Walker, 1998). This Australian use of the term ‘problem’ gambling usually encompasses both gamblers who do not meet the
diagnostic criteria, in addition to those who have been clinically diagnosed as being problem or pathological gamblers (Neal, Delfabbro, & O’Neil, 2005). The use of the term ‘problem’ gambler is consistent with Lesieur and Rosenthal (1991), who defined problem gambling in an inclusive manner and referred to “all patterns of gambling behaviour which may compromise, disrupt or damage family, personal or vocational pursuits” (p.7). The reference to the associated harms of excessive gambling is consistent to a public health model (Svetieva & Walker, 2008). Conversely, the term ‘pathological’ gambler is based on the addiction or disease/medical model. According to Delfabbro (2008), Australian researchers utilise the term ‘problem’ gambling because there is a general consensus that other labels could misrepresent gamblers within the Australian context. For example, the term ‘compulsive’ implies that gambling is a compulsion/behaviour which is driven by an impulse, and ‘pathological’ implies that gambling is a disease/medical disorder, neither of which has been consistently supported in Australian research (Delfabbro, 2008). This inconsistent use of terminology has made it difficult to meaningfully evaluate research into pathological gambling because terms may reflect different conceptualisations of the phenomenon.

These differences in terminology can be distinguished by the different emphasis they place on the features of the problem. For instance, some definitions provide lists of associated harms, whereas others focus on the behavioural or psychological characteristics of the problem (Productivity Commission, 1999). A focus solely on either the behavioural characteristics or the associated harms of problem gambling can overlook important features of the phenomenon. In the Productivity Commission’s (1999) report on Australia’s gambling industries, the term problem gambling referred to all gambling behaviour that has a negative effect on personal, family, social or employment activities. Thus, the definition included both patterns of gambling behaviour that led to negative consequences but also pathological gambling (Department for Families and Communities, 2006). However, the definition did not address the behavioural characteristics of problem gambling.

A national definition of problem gambling was reported in 2005 by the Ministerial Council on Gambling and has been accepted by all Australian States and Territories:

“Problem gambling is characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the
The above definition incorporated both the behavioural characteristics and the associated harms of problem gambling. The dual nature of the definition is important since it encompasses people who may demonstrate limited behavioural characteristics of problem gambling but still have serious consequences. It also enables the early identification and diagnosis of problem gambling before serious consequences are experienced (Delfabbro, 2008). In addition, the definition allows for the fact that a small number of problem gamblers may win money overall despite having engaged in a substantial duration of time overall during the gambling process. For example, what has been reported in the literature to occur with some poker players (e.g., Wood, Griffiths & Parke, 2007; Griffiths et al., 2009).

1.3 Assessment of Problem Gambling

Problem gambling is measured and classified according to a variety of validated psychological instruments. Most of these scales conceptualise problem gambling in terms of both behaviours and harms. According to Delfabbro (2008), the assessment tools most commonly used in Australia include: the DSM-IV criteria, the Canadian Problem Gambling Index (CPGI) the South Oaks Gambling Screen (SOGS), the Eight Screen (8-screen) and the Victorian Gambling Screen (VGS). Delfabbro (2008) reported that the CPGI had been adopted as the principal measure for Australian prevalence research. A brief review of the DSM criteria, SOGS and CPGI will be provided below due to their importance in illuminating how Australian gambling research assesses and measures problem gambling.

1.3.1 The Diagnostic and Statistical Manual

‘Pathological’ gambling (as referred to by the DSM) was formally recognised as a psychological disorder in 1980 when it was included in the Diagnostic and Statistical Manual (DSM-III)(Dannon et al., 2004; Neal et al., 2005). The most recent DSM-IV manual of psychiatric disorders listed pathological gambling as a disorder of impulse control not elsewhere classified (APA, 1994). Pathological gambling was defined in the DSM-IV as a persistent and recurrent maladaptive gambling that interferes with personal,
family, or occupational functioning (APA, 1994). Pathological gambling was first described as an impulsive behaviour at the beginning of the 19th Century (Dannon et al., 2004). The DSM facilitates the identification and management of mental disorders via clinical interviews that are based on lists of symptoms provided by the manual. A diagnosis is determined when a specified number of symptoms are endorsed. In the case of pathological gambling, 5 out of 10 symptoms must be identified to warrant a diagnosis, and the behaviour must not be better accounted for by a manic episode (DSM-IV-TR, 2004). The DSM focused on the consequences associated with gambling, rather than its frequency or type because the authors argued that the choice of gambling activities are determined by local availability and cultural norms, and also the extent of gambling considered to be ‘normal’, varies across cultures (DSM-IV-TR, 2004). Table 1.1 provides the diagnostic criteria provided by the DSM-IV-TR (2004) for pathological gambling. According to Delfabbro (2008), the DSM-IV criteria is not widely used in Australia because it was developed as a clinical instrument that should be administered in the form of a clinical interview by clinical psychologists or psychiatrists. The DSM-IV criteria have also been criticised on the grounds that they are similar to those included in the addictive disorders, which has led to debate regarding whether pathological gambling should be classified as an addictive rather than impulse control disorder (Ladouceur, Sylvain, Boutin, & Doucet, 2002). In addition, the criteria do not allow for the categorisation of gamblers along a scale of severity, and the dichotomous manner of scoring (i.e., the symptom is either present or absent) can be subjective (Ladouceur et al., 2002).
Table 1.1

*DSM-IV-TR diagnostic criteria for pathological gambling*

<table>
<thead>
<tr>
<th>DSM-IV-TR Classification for pathological gambling (2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preoccupation with gambling.</td>
</tr>
<tr>
<td>2. To obtain the desired level of excitement, increasing amounts of money is needed.</td>
</tr>
<tr>
<td>3. Numerous attempts to control/reduce/cease gambling.</td>
</tr>
<tr>
<td>4. When attempting to reduce/cease gambling the individual becomes restless or irritable.</td>
</tr>
<tr>
<td>5. Gambled as a method of escaping problems or relieving dysphoric states.</td>
</tr>
<tr>
<td>6. After losing money gambling the individual often returns another day to recoup their money (‘chasing’ losses).</td>
</tr>
<tr>
<td>7. Lies to family, therapist or others to conceal the extent of their gambling involvement.</td>
</tr>
<tr>
<td>8. Has committed illegal acts such as forgery, fraud, theft or embezzlement to finance gambling.</td>
</tr>
<tr>
<td>9. Has risked or lost a significant relationship/education/job/career opportunity because of gambling.</td>
</tr>
<tr>
<td>10. Depends on others to provide financial assistance to alleviate desperate financial situations caused by excessive gambling</td>
</tr>
</tbody>
</table>

*Scoring:* Must have 5 or more criteria to be classified as a pathological gambler and must not be better accounted for by a manic episode.

Adapted from the DSM-IV-TR (2004)

1.3.2 The South Oaks Gambling Screen (SOGS)

The SOGS was developed in a clinical setting by Lesieur and Blume (1987) and is based on the DSM-III and DSM-III-R criteria for pathological gambling using a lifetime frame of reference. The SOGS assesses the impact of gambling across a number of areas (emotional, family/social, occupational/educational and financial impacts), and has become the most commonly used assessment tool of pathological gambling internationally (Battersby, Thomas, Tolchard, & Esterman, 2002). The SOGS attempts to identify pathological gamblers in a variety of settings and is based on 20 scoring items (with a maximum score of 20) that are all equally weighted (Battersby et al., 2002; Lesieur & Blume, 1987, 1993). A number of non-scored items are also included to identify the type of gambling, the amount of money gambled in a day, and also if the individual has
relatives/friends with gambling problems (Lesieur & Blume, 1987, 1993). The SOGS has also been employed as a continuous measure through the employment of a 5-point likert scale (1=never, 2=rarely, 3=sometimes, 4= often, 5=always) (Dickerson, Baron, Hong, & Cottrell, 1996). The SOGS can be administered and scored by either a clinical or non-clinical interviewer (Lesieur & Blume, 1987). A score of 5 or more is indicative of a probable pathological gambler, with scores ranging from 3–4 believed to identify gamblers with some problems, and a score of 0 indicating no problems (Lesieur & Blume, 1993). Since excessive gambling behaviour is believed to fall along a continuum, with people moving into and out of patterns of excessive gambling behaviour, a modified version of the SOGS (SOGS-R) was reported that introduced a current (previous 6 months) timeframe (Dickerson et al., 1996; Lesieur & Blume, 1993). People commonly use the SOGS with a 12-month timeframe.

Although the SOGS is widely used, a number of criticisms have been directed at its use. According to Walker and Dickerson (1996), the accuracy of the SOGS as a population screen has been debated in the literature. Dickerson et al. (1996) argued that the original cut off scores that were established for the SOGS within a clinical setting are not transferable to general population surveys. The SOGS has also been found to produce a high number of false positives. For example, a national prevalence study conducted in New Zealand which employed the SOGS-R assessed both lifetime and current gambling involvement (Abbott & Volberg, 1996). Abbott and Volberg (1996) reported a total of 24% of gamblers who had scored 5 or more on the lifetime version of the SOGS were not subsequently diagnosed as problem gamblers when they were assessed via the DSM-IV criteria. Findings such as this have made it advisable that a second instrument such as the DSM-IV-TR criteria be administered when assessing for problem gambling (Ladouceur et al., 2002). Table 1.2 provides the diagnostic items for the SOGS-Revised.
**Table 1.2**

*Diagnostic items for the South Oaks Gambling Screen-Revised*

<table>
<thead>
<tr>
<th>Diagnostic items from the South Oaks Gambling Screen-Revised (Lesieur &amp; Blume, 1993)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When you gamble, how often do you go back another day to win back money you lost? [a. Never; b. Some of the time (less than half the time I lost); c. Most of the time I lost; d. Every time I lost].</td>
</tr>
<tr>
<td>2. Have you ever claimed to be winning money gambling but weren’t really? In fact you lost? [a. Never (or never gamble); b. Yes, less than half the time I lost; c. Yes, most of the time].</td>
</tr>
<tr>
<td>3. Do you feel you have ever had a problem with betting money or gambling? [a. No; b. Yes, in the past but not now; c. Yes].</td>
</tr>
<tr>
<td>4. Did you ever gamble more than intended to? [a. Yes; b. No].</td>
</tr>
<tr>
<td>5. Have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? [a. Yes; b. No].</td>
</tr>
<tr>
<td>6. Have you ever felt guilty about the way you gamble or what happens when you gamble? [a. Yes; b. No].</td>
</tr>
<tr>
<td>7. Have you ever felt like you would like to stop betting money or gambling, but didn’t think you could? [a. Yes; b. No].</td>
</tr>
<tr>
<td>8. Have you ever hidden betting slips, lottery tickets, gambling money, I.O.U’s or other signs of betting or gambling from your spouse, children or other important people in your life? [a. Yes; b. No].</td>
</tr>
<tr>
<td>9. Have you ever argued with people you live with over how you handle money? [Yes/No not scored].</td>
</tr>
<tr>
<td>10. If you answered yes to the previous question: Have money arguments ever centred on your gambling? [a. Yes; b. No].</td>
</tr>
<tr>
<td>11. Have you ever borrowed from someone and not paid them back as a result of your gambling? [a. Yes; b. No].</td>
</tr>
<tr>
<td>12. Have you ever lost time from work (or school) due to betting money or gambling? [a. Yes; b. No].</td>
</tr>
<tr>
<td>13. If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from? [Check yes or no for each].</td>
</tr>
<tr>
<td>14. From household money? [a. Yes; b. No].</td>
</tr>
<tr>
<td>15. From your spouse? [a. Yes; b. No].</td>
</tr>
<tr>
<td>16. From other relatives, or in-laws? [a. Yes; b. No].</td>
</tr>
<tr>
<td>17. From banks, loan companies, bonds or other securities? [a. Yes; b. No].</td>
</tr>
<tr>
<td>18. From credit cards? [a. Yes; b. No].</td>
</tr>
<tr>
<td>19. You cashed in stocks, bonds or other securities? [a. Yes; b. No].</td>
</tr>
<tr>
<td>20. You sold personal or family property? [a. Yes; b. No].</td>
</tr>
<tr>
<td>21. You borrowed on your checking account (passed bad checks)? [a. Yes; b. No].</td>
</tr>
</tbody>
</table>

**Scoring:** Q1 (score 1 point: c or d), Q2 (score 1 point: b or c), Q3 (score 1 point: b or c). Disregard Q 9.

Qs10-21 score 1 point for a score of yes.

Cut off score: 0 = No problem, 1-4 = Some problem, 5+ = Probable pathological gambler (Lesieur & Blume, 1993)
1.3.3 The Canadian Problem Gambling Index (CPGI)

The Canadian Problem Gambling Index (CPGI) was designed to identify gamblers with varying degrees of risk, and to also allow for the similarity between behaviours demonstrated by regular non-problem gamblers and problem gamblers within community samples (Delfabbro, 2008). The CPGI developed as a result of criticisms of the SOGS. The CPGI was promoted and developed according to a public health perspective, although it shares many items in common with measures of pathological gambling such as the SOGS (Svetieva & Walker, 2008). The CPGI contains 31 items (in addition to demographics) which assess levels of gambling involvement, correlates of gambling, and also includes a screen of problem gambling. The items included in the measures were based on an extensive literature review, consultation with gambling experts and also pilot studies. A pilot study was conducted that included 3,120 adult Canadians who were administered the measure. The study found that the test-re-test reliability of the measure was very good, and the results from a sub-sample of participants who were also assessed via a clinical interview (based on the DSM IV criteria) indicated that the correspondence between the two measures was very high (Ferris & Wynne, 2001). Neal, Delfabbro and O’Neil’s (2005) international review on problem gambling measures concluded that the CPGI is the most appropriate measure for prevalence research in Australia. Although, Svetieva and Walker (2008) caution that the CPGI probably measures pathological gambling rather than problem gambling, and so results based on the CPGI should be interpreted accordingly. The 9 scoring items that are included in the CPGI are provided in Table 1.3.
Table 1.3

Screening items of problem gambling included in the CPGI

The Canadian Problem Gambling Index items (Ferris & Wynne, 2001)

---

NOTE:
This table is included on page 15 of the print copy of the thesis held in the University of Adelaide Library.

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1.4 Prevalence of Problem Gambling

There has been some suggestion in the literature that the increasing accessibility of gambling activities and new gambling technologies (such as EGMs) in Western society has resulted in problem gambling becoming an increasingly prevalent public health concern (Commission, 1999; Potenza et al., 2000). Griffiths and Delfabbro (2001) supported this proposition when they concluded that there is a “positive relationship between the availability of gambling and both regular and problem gambling” (p. 4) and suggested that this relationship is consistently demonstrated across studies. Jacques, Ladouceur and Ferland (2000) reported a longitudinal study that employed a paired-subject design and a control group to investigate the impact of availability of gambling in Canada. An experimental group from the Hull area (N= 457) and a control group from the Quebec City area (N= 423) both answered the SOGS and related questions prior to the opening of a casino and then one year after its opening. The experimental group was exposed to the new casino and the results suggested that participants demonstrated a significant increase in their gambling participation on casino games, and the maximum amount they lost in one
day on gambling. This finding supports the suggestion that an increase in the availability of gambling is associated with an increased participation in the related gambling activities. However, between the pre- and post test conditions no change was found in the number of people who reported experiencing gambling problems. The authors argued that this finding was unsurprising given that more than a one-year follow-up period would probably be required to identify an increase in probable pathological gambling (Jacques, et al. 2000). Thus, a longer follow up period might enable the identification of increased rates of probable pathological gambling (Jacques, et al. 2000). However, Abbott (2006) has more recently argued that the assumption that increased gambling exposure is related to increased rates of problem gambling, particularly in reference to EGMs and other forms of continuous gambling, may not be as strong as originally hypothesised. Abbott (2006) suggested that despite Australia and New Zealand having increased EGM availability and expenditure there has in fact, been a decrease in the national prevalence rates over the past 15 years.

A number of studies have been conducted during the past ten years to investigate the prevalence of problem gambling in Australian States and Territories. The Productivity Commission (1999) reported that between 1997 and 1998, that 2.07% (or 292,737 individuals) of the adult Australian population were problem gamblers using the SOGS with a cut-off score of 5. A number of regional studies have also been conducted in Australia to establish prevalence rates. Table 1.4 provides the most recent prevalence rates of problem gambling across Australian States and Territories that were assessed using the CPGI. In South Australia, a telephone survey of 6045 adults reported that 2.45% of adults were problem gamblers (South Australian Department of Human Services, 2001). The South Australian Department for Families and Communities reported a more recent telephone survey with 17,140 adults in 2005 (South Australian Department for Families and Communities, 2006). The Queensland Government in 2001-02 (N= 13,082) and 2003-04 (N= 30,000) conducted large-scale telephone surveys (Queensland Government (Treasury), 2002, 2004, 2007). Prevalence figures were also reported by McMillen, Marshall, Ahmed and Wezel (2003) for Victoria (N= 8479) and Roy Morgan Research (2006) for Tasmania (N= 6048). AC Nielsen (2007) surveyed 5029 adult NSW residents in 2006. Young et al. (2006) reported a telephone survey with 1873 Northern Territory residents and McMillen, Tremayne, and Mastersman-Smith (2001) conducted a telephone survey with 5445 ACT residents. These figures suggest that problem gambling rates appear to be higher in Victoria and New South Wales, as compared to South Australia.
Table 1.4

*Australian State/Territory prevalence figures of moderate risk and problem gambling*

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>Moderate Risk</th>
<th>Problem Gambling</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Victoria</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Queensland</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>South Australia</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Western Australia</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Tasmania</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Australian Capital Territory</td>
<td>4%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**NOTE:**
This table is included on page 17 of the print copy of the thesis held in the University of Adelaide Library.

Adapted from Delfabbro (2008)

A comparison of international prevalence rates of problem gambling is difficult due to differences in screening measures, methodologies and variations in the timing of the surveys. Thus, comparisons with the following international rates should be viewed with caution because they were derived using different screening measures. It would appear that in general, Australian prevalence rates of problem gambling are similar to other Western societies. A national survey conducted in 2003 in Canada reported a prevalence rate of gambling problems of 0.5% (Cox, Yu, Afifi, & Ladouceur, 2005), as did a study conducted during 1999 in New Zealand (Abbot & Volberg, 2000). A report released in Great Britain reported a prevalence rate of 0.5/6% (Wardle et al., 2007). Problem gambling prevalence rates have also been reported for the United States of America (3.5%; Welte et al., 2001) and South Africa (1.4%; Collins & Barr, 2006).

1.5 Gender, Age and Type of Gambling Activity

In an Australasian Gambling Review (AGR3) Delfabbro (2008) concluded from a review of the literature that the two strongest demographic predictors of gambling participation are gender and age.

It would appear from gambling prevalence surveys that there are a number of significant gender differences in regards to gambling participation and problem gambling (e.g., Productivity Commission, 1999). Traditionally, men have been involved in a wider range of gambling activities than women (Hraba & Lee, 1996; LaPlante, Nelson, LaBrie,
However, over the past decade gambling has become an increasingly attractive and socially acceptable activity for women (Heater & Patton, 2006). In general, it has been found that gambling on activities such as races, casino table games and sports is more popular amongst young men than amongst women (Delfabbro, 2008). Women on the other hand are more likely to report that they gamble on EGMs (Ladd & Petry, 2002; Potenza et al., 2001) and bingo (Hing & Breen, 2001; Hraba & Lee, 1996), although in Delfabbro's (2009) review of the literature he did conclude that EGM participation appears to be a popular gambling activity regardless of gender.

Gender differences have also been identified in relation to problem gambling. In Australia, significantly more men report gambling problems than women, and it has previously been estimated that internationally there are double the number of men with gambling problems than women (Brown & Coventry, 1997; Potenza et al., 2001). Women are more likely to have problems related to poker machine gambling, as compared to men who were more likely to report having problems with card games or sports betting (Potenza et al., 2001). Women have also been reported as having a more rapid development of gambling problems than men (Potenza et al., 2001).

These differences in male and female gambling behaviours have been explained via a number of ways, for example, in terms of traditional gender roles (Lindgren, Youngs, McDonald, Klenow, & Schriner, 1987; Walker, 1992) and social norms (Ladd & Petry, 2002), motivational differences (Potenza et al. 2001; Trevorrow & Moore, 1998), and disposable income (Hing & Breen, 2001). For example, it has been argued that women may be more likely than men to gamble to escape from stress and depression and other problems (Trevorrow & Moore, 1998). Trevorrow and Moore (1998) reported that women primarily gamble to relieve boredom, loneliness and isolation. A study reported by Getty, Watson and Frisch (2000) that compared depression and styles of coping across gender in GA members (and controls) found that women reported higher levels of depression and maladaptive coping than males. Men alternatively have been reported to be more likely to gamble to obtain excitement and to test their skills (Scannell, Quirk, Smith, Maddern, & Dickerson, 2000; Trevorrow & Moore, 1998). There has also been some suggestion that there may be cultural influences related to gender differences found in EGM participation. For example, in the United Kingdom young males are the primary players of slot machines because the machines are perceived to be ‘skilful’ due to the absence of a random number generator (Parke & Griffiths, 2006).
Gender differences have also been reported in relation to the effect of problem gambling on individuals. For instance, Potenza et al. (2001) reported that women seeking treatment for problem gambling are more likely to report a shorter history of problem gambling, anxiety and suicide attempts than men. There has also been some suggestion that women seek help for problem gambling earlier in the progression of their problems than men (Heater & Patton, 2006; Potenza et al., 2001).

A number of differences in gambling behaviour across different age categories have also been identified. Delfabbro (2008) concluded that people who fall in the older category (i.e. aged 75+) tend to have lower gambling participation rates than other age groups. Delfabbro and LeCouteur (2007) reported that older people appear to gamble on a more restricted range of gambling activities which usually include lottery games, EGMs, and bingo. However, EGM players are more likely to fall in the younger (18-24-age category) rather than older age category (75+) (Delfabbro, 2008). Petry (2005) suggested that age may be inversely related to gambling problems, and reported that the rates of gambling problems are higher in adolescents and young adults, as compared to older individuals. Evidence from general population surveys suggests that the prevalence rate of problem gambling in older adults is low, and that older adults generally have a reduced risk of developing problems (Delfabbro, 2009; Petry, 2002). Petry (2002) reported a study that investigated gambling across different age categories and suggested that people who report developing problem gambling at an older age are more likely to be female and married (Petry, 2002). In addition, when compared to middle aged gamblers, older women were not found to initiate regular gambling until an average age of 55 years. This is in contrast to older male gamblers who were more likely to report having gambled across the lifespan (Petry, 2002). These results regarding male gamblers are similar to what was found in a study of treatment seeking pathological gamblers, which suggested that men were more likely to initiate gambling, begin gambling regularly and enter gambling-related treatment at an earlier age than women (Ladd & Petry, 2002). In a similar vein, Grant, Wom Kim, Odlaug, Buchanan and Potenza (2009) reported a study that categorised 322 current pathological gamblers into late-onset (at or later than 55 years) and earlier-onset (at or prior to 25, 26-54 years) pathological gamblers and examined them on a number of clinical and gambling severity measures. The results found that whilst late-onset gamblers were less likely to declare bankruptcy, the problems experienced by late-onset gamblers were generally as severe as younger-onset pathological gamblers (Grant et al., 2009). Late –
onset gamblers were also more likely to report experiencing symptoms that were consistent with an anxiety disorder (Grant et al., 2009).

Problem gambling is most likely to be associated with continuous forms of gambling such as Electronic Gaming Machines (EGMs). Since the current thesis specifically examined EGM gambling, only EGM gambling will be discussed below. EGMs are widely accessible within the community and have been associated with the increased prevalence rates of problem gambling, especially for women. In South Australia on the 25th of July 1994 EGMs were introduced into hotels and clubs. One of the reasons EGMs are believed to be problematic is because they attract a large number of players and a wide range of gamblers (Delfabbro, 2008). Delfabbro (2008) argued that there appeared to be an association between problem gambling and EGMs, with approximately 75-80% of gambling related problems in New South Wales (NSW), South Australia (SA), Victoria and New Zealand related to EGMs. The Productivity Commission (1999) also reported that the gambling modality that was found to be the most significant cause of problem gambling in clients seeking help for gambling-related problems were EGMs in NSW (72%), Victoria (81%), South Australia (74%) and the ACT, NT and Tasmania (65%) and QLD (48%). This pattern was not found in WA (20%). These findings are consistent with a number of more recent reports, for example, the South Australian Break Even Network 2000-01 reported that 74% of clients regularly gambled on EGMs, and Jackson et al. (1997, 1999) in their report on Victorian gambling services found that the most recently gambled on modality was EGMs (81%). The percentage of other regularly gambled on activities was consistently lower across a number of reports when compared to EGMs. For example, Jackson et al. (1997) reported that 15% of clients indicated that their most recently gambled on activity was racing, and 5% on casino table games. The Break Even Network 200-01 reported that only 23% of clients had gambled on activities other than EGMs (South Australian Government, 2003).

Griffiths (2003) argued that the structural features of EGMs, such as event frequency of activity, payout interval, light, colour and sound effects may reinforce play since they may satisfy gamblers’ needs and facilitate gambling. It has been proposed in literature that types of gambling with highly variable reinforcement schedules (such as EGMs) and those that provide instant feedback may be associated with problem gambling (Welte, Barnes, Wieczorek, Marie-Cecile, & Parker, 2004). Intermittent reinforcement under learning principles is the most effective in achieving high response rates (Griffiths,
Griffiths (1999) suggested that event frequency might be linked with greater addictive properties of certain gambling activities such as EGMs, due to operant conditioning principles. The payout frequency and event frequency is very short on EGMs which encourages further gambling (Griffiths, 1993a). This rapid frequency of play means that the loss period is very brief which means that there is only a short time period for financial considerations, and that wins are immediately processed. The psychology of the near miss (failure close to being successful) on EGMs is also related to operant conditioning principles and acts as an intermediate reinforcer (Reid, 1986). Continued play is encouraged through the excitement of constantly nearly winning (Griffiths, 1991a).

Structural characteristics have the potential to induce excessive gambling regardless of the biological and psychological constitution of individual (Griffiths, 1993a).

1.6 Impacts of Problem Gambling

The literature suggests that problem gamblers can experience a number of psychosocial consequences as a result of their gambling involvement. Some of the negative consequences can include personal problems such as increased irritability, moodiness, depression and anxiety, interpersonal problems, financial and legal issues (Goudriaan, Oosterlaan, Beurs, & Brink, 2004). The legal consequences of problem gambling can be related to gambling-related crime in order to finance gambling, and/or debts related to their gambling (Sakurai & Smith, 2003).

The Productivity Commission (1999) identified the principal domains of problem gambling impacts that can be used as a framework to discuss the central psychosocial consequences of problem gambling: personal, interpersonal, financial, vocational, and legal. The far reaching impacts of problem gambling is evidenced by the fact that the Productivity Commission’s report (1999) estimated that approximately 2 million Australians felt the social and financial impact of problem gambling. Although it is widely recognised that problem gamblers can experience such problems, the issue of gambling-related harm is controversial because of debates regarding the causality of problem gambling (Delfabbro, 2008). There has been argument regarding whether gamblers would experience these problems regardless of their involvement with gambling. For example, do gamblers gamble to alleviate depression/anxiety, etc or are the negative consequences associated with problem gambling directly due to their gambling participation? As pointed
out by Delfabbro (2008), both arguments are likely to be valid to varying degrees and to date research findings have mainly been cross-sectional or retrospective which limit any conclusions regarding causality.

1.6.1 Personal consequences of problem gambling

A range of comorbid behavioural, mental health and physical health functioning problems are associated with problem gambling and are discussed below (Dannon et al., 2004). However, direct comparisons of comorbidities are difficult because of the inconsistent use of assessment tools between reports (MacCallum & Blaszczynski, 2002).

1.6.1.1 Psychological harm

The literature consistently reports high levels of depressive symptomology amongst problem gamblers. The Productivity Commission (1999) reported that 22% of problem gamblers endorsed having ‘often’ or ‘always’ experienced depression that they related to their gambling. A total of 60% of problem gamblers (included in the Productivity’s survey) reported that they had ‘often’ or ‘always’ experienced depression. This is similar to the South Australian Department of Human Services (2001) who reported that a total of 59% of problem gamblers fell in the clinical range of depression (as measured by the Kessler-10). In addition, McCormick, Russo, Ramirez and Taber (1984) investigated the occurrence of major affective disorder and schizophrenia in a sample of inpatients (N= 50). A total of 76% of patients were diagnosed with a major affective disorder. These findings are consistent with Linden, Pope and Jonas (1986) who, in a sample of Gamblers Anonymous members, found that 72% had experienced at least one major depressive episode and that 52% of the sample experienced recurrent major affective episodes.

There is also evidence to suggest that problem gamblers experience high levels of anxiety (Coman, Burrows, & Evans, 1997). Coman, et al. (1997) reported that females who gamble are often depressed and that gambling is used to cope with stress and anxiety. The authors found that 46% of the sample gambled to relieve boredom and/or depression and that 51% gambled to relieve stress. A number of researchers have reported that females use EGM gambling as a method of relieving stress (e.g., Di Dio & Ong, 1997; Scannell et al., 2000).
Since problem gamblers are likely to report experiencing high rates of depression and anxiety, it is perhaps unsurprising that problem gambling has been associated with suicidal ideation and suicide attempts (for example, Goudriaan et al., 2004; Ladouceur, Dubé, & Bujold, 1994; Ledgerwood & Petry, 2004; Newman & Thomson, 2003). Potenza et al. (2000) reported that in a sample of treatment seeking pathological gamblers (N=124), 48% had a history of suicide-related ideation and an additional 12% had at least one gambling related suicide attempt. Blaszczynski and MacCallum (1999) found in a treatment sample of problem gamblers (N= 53) that 41% reported a history of suicide ideation related to their gambling involvement, and 9% reported scores that fell in the extreme range of suicidality. The Productivity Commission’s (1999) survey of counselling agencies found that 57.8% of problem gamblers has seriously considered suicide because of their gambling involvement. In addition, the South Australian Department of Human Services (2001) reported that 15% of a community sample of problem gamblers (N= 123) had considered committing suicide, and that 25% of these individuals associated these thoughts with their gambling. Ledgerwood and Petry (2004) reported that some of the factors associated with the level of suicidality included more serious gambling problems, the use of gambling as an avoidance coping mechanism and experiences of dissociation. Pathological gamblers with a history of suicidal ideation and/or attempts were also more likely to have started gambling at an earlier age (Ledgerwood & Petry, 2004).

1.6.1.2 Substance abuse

Another serious issue in problem gambling is the coexistence of addiction to other behaviours/substances, and this has been associated with a higher number of psychosocial problems (Bland, Newman, Orn, & Stebelsky, 1993; Coman et al., 1997; Feigelman, Wallisch, & Lesieur, 1998; Smart & Ferris, 1996; Welte et al., 2004). Rates of substance abuse in treatment seeking pathological EGM gamblers are reported to be higher than the general population (MacCallum & Blaszczynski, 2002). In a study of 75 treatment-seeking problem EGM players reported by MacCallum and Blaszczynski (2002), a total of 16% of problem gamblers were identified as also having alcohol abuse. Feigelman et al. (1998) found, using clinical samples of pathological gamblers, that approximately half had comorbid problems of substance dependence. In addition, high rates of pathological gambling have been found in substance abuse samples than in the general population (Feigelman et al., 1998).
1.6.1.3 Decreased health functioning.

Problem gamblers also report poorer general health functioning (Black, Moyer, & Schlosser, 2003; Morasco et al., 2006; Pasternak & Fleming, 1999). Griffiths (2004) reported that some of the health consequences of problem gambling include (and are also prevalent in the partner of the problem gambler): depression, insomnia, intestinal disorders, migraine and other stress related disorders. However, as pointed out by Delfabbro (2008), given that problem gamblers are most likely to have contact with mental health professionals (e.g., psychologists, psychiatrists and counsellors) there is not an abundance of literature on the physical health status of problem gamblers.

Jackson et al. (1997) reported that problem gamblers accessing Victorian problem gambling services reported physical symptoms. A prevalence study conducted by the South Australian Department of Human Services (2001) had participants rate their physical health status ranging from poor to excellent. The results suggested that problem gamblers were less likely to rate themselves as having good-to-excellent health (76%) as compared to the general community (85%). A study conducted in the United States found results that led the authors to conclude that pathological gambling is associated with several medical disorders and increased medical utilization (Morasco, et al., 2006). In addition, Scherrer et al. (2005) reported a study that examined health-related quality of life (HRQoL) amongst non-problem gamblers, problem gamblers and pathological gamblers. According to Scherrer et al. (2005) HRQoL is a measure of perceived health and the effect of disease on daily functioning. The results from the study suggested that problem and pathological gambling are associated with decreased HRQoL, although this effect is more distinct for the mental health domains of the HRQoL. The authors reported that this association was partially explained by genetic and family environmental effects and the presence of lifetime comorbid substance use disorders.

In addition, there have also been health related problems associated to withdrawal from gambling in problem gamblers. Such health related consequences (compared to a control group) included insomnia, headaches, loss of appetite, physical weakness, heart racing, muscle aches, breathing difficulty and chills (Rosenthal & Lesieur, 1992).
1.6.2 Interpersonal consequences.

Families and those associated with problem gamblers can also be adversely affected by problem gambling. For example, the time that the problem gambler spends engaged in gambling activities limits their engagement in social events, family interaction and other activities, and this can result in isolation and relationship difficulties (Walker, 1998). Problem gamblers’ relationships may be placed under pressure due to a loss of trust and financial difficulties which can result in marital problems/conflict and breakdowns (Ladouceur, Boisvert, Pepin, Loranger, & Sylvain, 1994; Lorenz & Yaffee, 1986). Domestic violence and child neglect has also been reported to occur in families as a result of problem gambling (Productivity Commission, 1999; Griffiths, 2004). Korman et al. (2008) described a recent study that examined intimate partner violence (IPV) in problem gamblers’ relationships (N= 248) in Canada. The study found that 62.9% of participants had either perpetrated and/or been a victim of IPV during the past year. A large percentage of participants (59.7%) reported that they were victims of IPV. In addition, 55.6% of participants reported that they had perpetrated physical assault, injury and/or sexual coercion, and 25.4% reported that they had perpetrated severe IPV. The majority of participants (64.5%) were also found to have clinically significant anger problems.

A qualitative study that included spouses and partners of problem gamblers identified that problem gambling significantly affected their financial security, family relationships, and also their physical and psychological wellbeing (Dickson-Swift, James, & Kippen, 2005). The study found that some of the relationships had ended in separation or divorce, and that a loss of trust in their partner was a highly significant factor in their relationship with the problem gambler. Trust was usually lost because of the lies and dishonest behaviours on the part of the gambler (Dickson-Swift et al., 2005). Some of the physical and mental health impacts that the respondents believed were caused or exacerbated by their partner’s problem gambling included headaches, insomnia, and stomach upsets (Dickson-Swift et al., 2005).

1.6.3 Financial and vocational impacts of problem gambling.

Problem gambling has a number of economic implications for the individual, those close to them and also society. The Productivity Commission (1999) reported that approximately a third of the total gambling losses accrued by gamblers in Australia are
from problem gamblers. Many gamblers gamble more than they can afford and accumulate high levels of debt (Productivity Commission, 1999). According to the Productivity Commission (1999) 70% of problem gamblers had spent more than they could afford over the course of the previous year. Many accumulate debt when their losses outweigh their wins and this causes many problem gamblers to borrow money from credit institutions and other sources (Ladouceur, Boisvert et al., 1994). The Productivity Commission (1999) found that 11% of problem gamblers had sold property in order to gamble and 19% had borrowed money which they had not repaid. These percentages were higher for problem gamblers who were in counselling (Productivity Commission, 1999). Potenza et al. (2000) reported that 1 in 5 pathological gamblers file for bankruptcy as a result of their gambling. However, the Productivity Commission (1999) reported that only a small percentage of problem gamblers in counselling had become bankrupt because of their gambling (approximately 1%). This could be because a high number of problem gamblers obtain money from via: borrowing money, selling property and accruing debt (Delfabbro, 2008). The Productivity Commission (1999) estimated that problem gamblers spend approximately $12,000 per year on gambling, as compared to an average of $645, although this figure could vary. Spending estimates of problem gamblers seeking treatment however can be higher (Jackson et al., 1997; Productivity Commission, 1999).

Problem gamblers may also experience employment problems because of absences from work, arriving late to work and a lack of concentration when at work, due to their preoccupation with gambling (Ladouceur, Dubé et al., 1994; Volberg, Reitzes, & Boles, 1997; Walker, 1998). The Productivity Commission (1999) reported that 19% of problem gamblers had lost time from work or study during the previous year. In addition, approximately 25% believed that their gambling had adversely affected their work (Productivity Commission, 1999). Problem gamblers in treatment report more negative impacts on their employment. The Productivity Commission (1999) reported that 50% of problem gamblers in treatment had lost time from work or study. The Productivity Commission (1999) also suggested that the most significant impacts of gambling on employment are a loss of confidence/trust (17%), reduced concentration (17%), and decreased quality of work (12%).
1.6.4 Legal impacts of problem gambling.

There are a number of complex relationships between crime, gambling and problem gambling (Abbott & McKenna, 2000). Research demonstrates that when compared with the general population, individuals with gambling problems are more likely to have experienced legal difficulties such as the commission of crimes, arrest and incarceration. Lahn and Grabosky (2003) reported that problem gambling is a risk factor for offending. There is evidence to suggest that some problem gamblers commit crimes in order to finance their gambling and/or debts that they have accrued related to their gambling (Sakurai & Smith, 2003). Legal problems have also been related to bankruptcies, the loss of housing and/or credit difficulties. Accordingly, there are a number of financial costs (and other negative outcomes) associated with the legal consequences of problem gambling which are related to the victims of crime, offenders and their families. In addition, there are costs to the state and taxpayer through the involvement of the legal and correctional system and social welfare groups because of problem gambling (Abbott & McKenna, 2000).

The concept of problem gambling being a risk factor for criminal behaviour is not new. Problem gamblers may commit crimes when there has been an accumulation of debt and money is required to cover both the debt and to maintain their gambling involvement (Blaszczynski, 1994; Blaszczynski & Silove, 1996; Lahn & Grabosky, 2003). At present there are no official Australian statistics demonstrating the degree of gambling-related offences (Sakurai & Smith, 2003). However, the Australian Crime Commission (2003) stated that gambling related fraud and theft has increased significantly in recent years (Sakurai & Smith, 2003). The Productivity Commission (1999) has also indicated that many of the crimes committed by problem gamblers are not detected or prosecuted. Indeed, in some cases even when an offence is detected it may not be reported to police.

Depending on the sample of problem gamblers examined, a range of offences have been found. Most of the offences committed are non-violent property crimes, white-collar embezzlement and fraud (Marshall, Balfour & Kenner, 1997), although there has also been some suggestion in the literature that problem gamblers may also engage in prostitution and the sale of drugs in order to finance their gambling (Lesieur, 1987). Abbott, McKenna and Giles (2000) found in a sample of male prisoners that burglary was the most commonly reported gambling-related offence which was then followed by theft, fraud and
robbery. A survey conducted with female prisoners found that they more commonly reported committing gambling-related fraud and shoplifting offences than males (Abbott & McKenna, 2000).

Research has suggested that between 21-85% of diagnosed pathological gamblers commit criminal offences during the desperation phase of problem/pathological gambling (Blaszczynski, 1994; Blaszczynski & Silove, 1996). Blaszczynski and McConaghy (1994) reported a study with 306 gamblers who were undergoing treatment. This study found that 59% of the sample reported having committed a crime in order to fund their gambling (Blaszczynski & McConaghy, 1994). In a similar vein, Jackson et al. (1997) reported a study that found that 30% of 1452 clients of Victorian Break Even counselling agencies had committed an offence related to their gambling. In Canada, Ladouceur, Boisvert et al. (1994) found that 68% of participants (pathological gamblers attending GA meetings, N=60) had committed an illegal act to finance their gambling. Community prevalence studies have also investigated the prevalence of problem gambling and illegal activities. The Productivity Commission (1999) suggested that 27% problem gamblers who scored more than 10 on the SOGS had committed a gambling-related offence. In a recent community sample of gamblers (South Australian Department of Families and Communities, 2007), 26% of problem gamblers reported that they had committed an offence in order to support their gambling. In contrast, an earlier report suggested that less than 1% of problem gamblers had committed a gambling related offence (South Australian Department of Human Services, 2001).

A number of studies have been conducted in both Australia and internationally which have examined the prevalence of problem gambling in correctional/prison populations. These studies appear to suggest that there is a high incidence of problem/pathological gambling in this population. Due to the use of different screening measures across studies care must be taken when interpreting the different findings. A study was undertaken by Marshall, Balfour and Kenner (1997) with male prisoners at Yatala Labour Prison (N=103), South Australia. Using the 6-month version of the SOGS screen the authors found that 30% of the sample were problem gamblers (score of between 1 and four), and 33% were probable pathological gamblers (score of 5 or greater) (Marshall et al., 1997). A study conducted in Western Australia with 60 prisoners at the Canning Vale Remand Centre estimated that a total of 22% of the sample were probable problem gamblers (as measured by a score of 5 or more on the SOGS lifetime version)
(Jones, 1989). Another Australian study using a prison population was conducted in Queensland, and found that 17.4% of the sample had problem gambling, as screened by the CPGI (N= 178) (Powis, 2002). A total of 6.7% reported that they were currently in prison for a gambling-related offence and 7.3% had previously been convicted of a gambling-related offence (Powis, 2002). A more recent report by the Centre for Gambling Research (2003) into gambling and clients of ACT corrections (N= 102) found that 34.3% of the survey participants had some type of gambling problem as measured by the SOGS, 15.7% of which had a severe problem. Internationally, Abbott and McKenna (2000) and Abbott, McKenna and Giles (2000) investigated problem gambling in both male and female prison populations in New Zealand. These studies found that 21% of male prisoners (N= 357) and 33% of female prisoners (N= 94) were lifetime probable pathological gamblers as measured by the 6-month version of the SOGS-R (Abbott & McKenna, 2000; Abbott, et al., 2000). A study conducted in a federal correctional facility in Nevada, USA, found relatively low rates of pathological gambling. Of the 363 male inmates who were interviewed for the study and assessed via the SOGS, 5.2% of the sample had a SOGS score of 5 or above, and additional 7.4% had a score of either 3 or 4 (Walters, 1997).

Templer, Kaiser and Siscoe (1993) reported an earlier study with male Nevada prison inmates. This study found that 22.79% of the sample had some gambling problem, and 26% were classified as probable pathological gamblers according to the SOGS (Templer, et al. 1993).

It is important to note that not all problem gamblers resort to crime to support their gambling involvement, such behaviour is usually the last resort (Sakurai & Smith, 2003). In fact, the high prevalence rates of criminal offences committed by problem gamblers do not confirm a causal relationship between gambling and crime (Blaszczynski & Silove, 1996). Criminals also engage in legal and illegal forms of gambling, either as a means of making money or laundering money obtained from other sources (Abbott & McKenna, 2000; Commission, 1999). Thus, the above-mentioned correlational studies cannot be used to draw any direct causal links between gambling and crime. Marshall and Marshall (2003) reported how the Centre for Gambling Research (2003) suggested that the relationship between gambling and crime can be characterised in three ways. The first way suggests that the relationship between gambling and crime is co-incidental and that there is no actual link between gambling and crime. The second way of conceptualising the relationship is that gambling and crime are both symptoms of another underlying factor (i.e., low impulse control): co-symptomatic. The final proposal is that the relationship is
instrumental and that gamblers commit crimes in order to finance their gambling (Centre for Gambling Research, 2003 cited by Marshal & Marshall, 2003).

The classification of pathological gambling as a psychiatric disorder has had a number of important forensic implications. Both in the United States of America and Germany, pleas of diminished responsibility and/or not guilty by reason of insanity have been successfully entered by defence councils arguing against the conviction of pathological gamblers charged with gambling-related offences (Blaszczynski & Silove, 1996). However, it has commonly been argued that an individual may or may not be able to control their impulse to gamble, but that this should not influence an impulse to steal or commit other crimes (Rosenthal & Lorenz, 1992). Hence, it has been argued that being diagnosed with the disorder of pathological gambling cannot serve as a defence to non-gambling offences. For pathological gambling to be utilised as a defence for gambling-related crime then evidence needs to be found supporting the loss of volitional control; volitional control being the behavioural exercise of will. Responsibility is deemed to be reduced when there is an alteration in consciousness or mood that impairs volition as which occurs in hypnosis, epileptoid seizures and dissociative states (Blaszczynski & Silove, 1996). Blaszczynski (1994) points out that whilst the ability to stop oneself from gambling is difficult, the urge experienced by problem gamblers is to gamble, not commit an offence. In addition, it has been argued that in the case of criminal behaviours committed by problem gamblers, that the majority retain awareness of what they are doing and that it is wrong (Blaszczynski & Silove, 1996).

1.7 Conclusions of Chapter One

Problem gambling is an increasingly prevalent public health concern. The concept of problem gambling requires an acknowledgment of both its behavioural characteristics and associated harms. There are clearly a number of impacts of problem gambling which have an adverse effect upon the individual, their significant others and society.
Chapter 2

Psychological Theories of Gambling Behaviour

2.1 Overview

Numerous theories and perspectives have been advanced to explain the psychology of gambling (Ricketts & Macaskill, 2003). The purpose of this chapter is to summarise these different perspectives with particular reference to Durand Jacobs’ (1986) General Theory of Addiction because of its centrality in the empirical work conducted as part of this dissertation. The chapter commences with a brief discussion of psychoanalytic perspectives and the role of personality in gambling. This is followed by a discussion of behavioural and cognitive perspectives and the application of addiction theory to the study of gambling.

2.2 Psychoanalytic Theories of Gambling

A number of early psychoanalytic theorists have examined gambling. Hans Von Hattinberg is credited with the earliest psychoanalytic treatment of gambling (Von Hattinberg, 1914 cited by Aasved, 2002). Simmel’s (1920) work, the ‘Psychoanalysis of the Gambler’, was based on an observation of a gambler who had been receiving psychoanalytic treatment. Freud (1928) wrote ‘Dostoyevsky and Parricide’ which was based on Russian novelist and gambler Dostoyevsky. According to psychoanalytical theory, excessive gambling is a disease of the mind and is motivated by a desire to satisfy instinctual drives that can be traced back to the gamblers first early relationships (Aasved, 2002; Walker, 1992). Psychoanalysts differ, however, in terms of which aspects of early relationships are important in predisposing an individual to gamble (Walker, 1992).

According to Aasved (2002), Von Hattingberg believed gambling was a “personality fixation at an early pregenital stage of psychosexual development” (p. 23 cited by Aasved, 2002) and proposed that adult gambling was used as a maladaptive coping mechanism with the anger and guilt produced by childhood eliminative desires. Von Hattinberg (cited by Rosenthal, 1987) also argued that gamblers were masochistic and used
gambling as a substitute for sexual behaviour since the tension and fear involved in gambling was eroticised (Lesieur & Rosenthal, 1991). Simmel (1920) also suggested that gamblers became fixated at the anal stage of development and that gambling was an expression of both masochistic desires, sadism and unresolved issues of dependency. Simmel (1920) discussed the narcissistic fantasies of pathological gamblers, in particular pathological gamblers’ desire to deny feelings of inferiority and dependency on others. Aasved (2002) reported that Simmel’s (1920) conceptualisation of gambling was based solely on a single case history which raises issues regarding the generalisability of the account.

Freud (1928) implicated gambling in the phallic phase of development and reported that gambling was a substitute for masturbation which resulted in feelings of guilt (Walker, 1992). Freud (1928) further described how gamblers on an unconscious level used gambling to relieve guilt that developed from the Oedipal complex (Aasved, 2002). Freud (1928) proposed that gambling was masochistic self-punishment, with gamblers playing not to win money but to lose, and that the core motivation for gambling was not the money obtained by wins, but also the ritual of play or ‘action’. According to these views gambling is conceptualised as a pleasurable activity that is also associated with feelings of guilt, and that people gamble with an unconscious desire to be punished (i.e. losing money). However, Freud’s account was only based on male gamblers (Lesieur & Rosenthal, 1991).

Bergler (1957) popularised the notion that gamblers gamble to lose and to fulfil an unconsciousness desire for punishment (Lesieur & Rosenthal, 1991). Bergler (1957) suggested that gambling recreates the feelings associated with the Oedipal conflict, providing the individual with both the excitement and the thrill of winning but also frustration when the gambler loses. Bergler (1957) and Maze (1987) also suggested that excessive gambling developed as an unconscious desire for omnipotence. Maze (1987) implicated gambling with the Oral phase and suggested that the gambler desired the unconditional supply of gratification that was present during the omnipotent phase (Walker, 1992). According to Walker (1992) the irrational behaviours demonstrated during gambling i.e. superstitious behaviours and magical thinking, reflect the gambler’s regression to omnipotent thinking. Note: Bergler’s (1957) account only related to pathological gamblers not gamblers in general (Aasved, 2002).
Bolen and Boyd (1968) were initially influenced by the early psychoanalytic explanations of gambling but eventually rejected the notion that gambling is an unconscious substitute for sex. Some of the contributions the authors made to psychoanalytical theory included: distinguishing between normal gamblers and compulsive gamblers, noting how gambling had an important social function and recognised the familial aspect of pathological gambling and comorbid psychiatric disorders. Bolen and Boyd (1968) also suggested that gambling could be an emotional defence mechanism against feelings of depression and helplessness.

Other psychoanalytic theoreticians such as Taber (1982) and Rosenthal (1986) also described the narcissistic personality and related defence mechanisms in gambling behaviour. Rosenthal (1987) identified five defence mechanisms prevalent in problem gamblers: omnipotence (to protect against feelings of helplessness), splitting (compartmentalisation referring to self-idealisation and self-devaluation), idealisation and devaluation (defence against intimacy,) projection (of his feelings about self onto others) and denial (lying to others and refusing to acknowledge reality).

A number of criticisms have been directed towards the psychoanalytical accounts of gambling. Walker (1992) argued that psychoanalytic accounts do not allow for the development of testable hypotheses that can provide empirical support for their validity, and thus advance our knowledge of gambling behaviour. However, narcissism and other personality traits can be measured. Psychoanalytic conceptualisations of gambling behaviour have also been criticised on the basis that a number of authors only used a single case history for their conceptualisation of problem gamblers. There has also been no evidence to date that supports the proposition that gamblers are playing to lose (Aasved, 2002). In addition, the inference that unconscious guilt and hidden frustration is present in gamblers is compounded by the fact that heavy gambling produces such feelings (Rosenthal, 1986).
2.3 The Role of Personality and Personality Traits in Gambling

In addition to psychoanalytic accounts are studies directed at the personality profiles of gamblers which assume that personality is at the foundation of pathological gamblers’ problems (Lesieur & Rosenthal, 1991). This approach has been of continued theoretical interest amongst researchers and is based on the assumption that an individual’s personality maintains attitudes and general patterns of behaviour (Aasved, 2002). Sacco, Cunningham-Williams, Ostmann and Spitznagel (2008) have also suggested that researchers have been motivated to theorise about the role of personality in the development of pathological gambling because of the increased prevalence rates of the disorder in subpopulations of substance abusers and prisoners (Blaszczynski & Nower, 2002 as cited by Sacco et al., 2008). These populations have high rates of comorbidity and cross addictions, which suggest that there may be an underlying dispositional factor in addiction. Walker (1992) cautions that most personality research is ad hoc which restricts any conclusions regarding personality disorders/traits because it is difficult to determine if they are precursors or consequences of pathological gambling. The literature is also limited by the considerable discrepancies in the samples of participants utilised, the personality characteristics examined, and the fact that many findings appear contradictory (Aasved, 2002).

The prevalence rates of personality disorders in problem/pathological gamblers are reported to range between 25% (Specker, Carlson, Edmonson, & Johnson, 1996) to 93% (Blaszczynski & Steel, 1998). According to the DSM-IV there are three primary personality Clusters (A, B and C), and gambling researchers have specifically investigated the personality disorders that fall in Cluster B (Sacco et al., 2008). Cluster B personality disorders include Narcissistic, Borderline, Histrionic and Antisocial Disorders which are characterised by emotions and behaviours that are erratic, dramatic or labile (APA, 2000). A number of researchers have also identified associations between Cluster C diagnoses (Avoidant, Dependent and Obsessive-Compulsive personality disorders) in pathological gambling treatment samples (Specker et al., 1996; Steel & Blaszczynski, 1998). Fernández-Montalvo and Echubura (2004) did not find rates of personality disorders as high (32%, N= 16) as other studies. However, personality disorders were found to be more common in pathological gamblers than the normal population. The most prevalent diagnosis was borderline personality disorder (16%), followed by antisocial, paranoid, narcissistic and nonspecified (8% each) (Fernández-Montalvo & Echubura, 2004).
A number of studies have found an association between antisocial personality disorder (ASPD) and problem and pathological gambling (Blaszczynski & McConaghy, 1994; Blaszczynski, McConaghy, & Frankova, 1989; Cunningham-Williams, Cottler, Compton, Wilson, & Spitznagel, 1998; Ibanez et al., 2001; Pietrzak & Petry, 2005; Steel & Blaszczynski, 1998). ASPD has been previously defined by the American Psychiatric Association (2000) as a disorder that is characterised by a pervasive pattern of impulsivity, criminality, a lack of remorse, deceitfulness and limited social conformity. Findings from a study that used data from the St Louis Epidemiological Catchment Area Study found higher rates of ASPD in problem and pathological gamblers, as compared to recreational or non-problem gamblers (35%, 13.1% and 4.6% respectively) (Cunningham-Williams et al., 1998).

An association between problem/pathological gambling and ASPD has also been found in treatment-seeking samples (Blaszczynski, McConaghy & Frankova, 1989; Blaszczynski & McConaghy, 1994; Ibanez et al., 2001; Steel & Blaszczynski, 1998; Pietrzak & Petry, 2005). For example, Blaszczynski and Steel (1998) reported that 29% of their sample (N= 82) of Australian out-patient pathological gamblers had ASPD. Pietrzak and Petry (2005) reported a study that included 237 treatment seeking pathological gamblers in America which found that 16.5% of pathological gamblers met the DSM-IV criteria for ASPD. Pietrzak and Petry (2005) indicated that individuals with ASPD and pathological gambling reported more severe gambling problems and higher rates of anxiety (as measure by the Brief Symptom Inventory). The authors concluded that these findings supported the subtype of antisocial-impulsivist pathological gamblers which shall be discussed below (Blaszczynski & Nower, 2002). However, not all research has found an association between ASPD and pathological gamblers. Specker et al. (1996) reported a 0% prevalence rate of ASPD in treatment seeking pathological gamblers (N= 40), although, Sacco, et al. (2008) argued that this study had a number of methodological problems that included small sample size and unrepresentative demographic characteristics such as high levels of education.

Research has also examined individual differences in personality traits. One of the most commonly researched of these traits is sensation seeking. It has been hypothesised that people’s physiological arousal levels differ and thus a subgroup of people may need a higher level of stimulation to reach an ‘optimal level of arousal’. According to Zuckerman.
sensation seeking is the “need for varied, novel and complex sensation and experiences, and the willingness to take physical and social risks for the sake of such experience” (p. 10). People who require a high level of stimulation and excitement have been labelled ‘high sensation seekers’, and those who require very little external stimulation ‘low sensation seekers’. Sensation seeking is believed to comprise four factors: thrill seeking, experience seeking, disinhibition and boredom susceptibility. Kuley and Jacobs (1988) found that sensation seeking scores were higher amongst heavy gamblers as compared to social gamblers, although some research has found that problem gamblers do not differ in their sensation seeking scores (e.g., Allcock & Grace, 1988; Anderson & Brown, 1984) or that problem gamblers score lower on sensation seeking (Blaszczynski, Wilson, & McConaghy, 1986; Dickerson, Hinchy, & Fabre, 1987). Walker (1992) argued that those studies that produced negative evidence of the relationship could arguably be excluded on methodological grounds, and suggested that there is likely to be a curvilinear relationship between the degree of gambling and sensation seeking.

Other personality traits implicated in pathological and problem gambling include extroversion and locus of control. Similar to sensation seeking, extroversion has been examined in relation to gambling because it is also believed to reflect the degree to which an individual requires external stimulation to maintain arousal. It was hypothesised that extroverts would find gambling exciting and would also be more influenced by rewards during gambling. Walker (1992) however described how the research evidence examining the relationship between extroversion and gambling has been extremely inconsistent. In the same review, Walker (1992) also critiqued the proposed relationship between locus of control and gambling behaviour. The locus of control construct is believed to reflect an individual’s belief that their life is controlled by their own behaviours (internal locus of control) or by factors that are external to the individual i.e., luck, fate, chance or other supernatural influences (external locus of control) (Aasved, 2002). Gambling involvement was hypothesised to be more attractive to individuals with a higher level of external locus of control. Several studies have found support for this hypothesis (e.g., Johnson, Nora, & Bustos, 1992; Moran, 1970) but a number have also reported no differences from non-gamblers (e.g., Glass, 1982). Thus, Walker (1992) concluded that there was weak evidence to support the relationship between external locus of control and gambling.

Another personality trait explored in the gambling literature is that of impulsivity which has previously been defined as “a personality trait that is characteristic of
individuals who act hastily or are impatient” (Barrett, 1981, p. 286). The DSM-III (APA, 1980) classified pathological gambling as an impulse-disorder. Impulsivity has been referred to in regards to pathological gambling since Moran’s (1970) study on subgroups of problem gambling which categorised problem gamblers into 5 subtypes (impulsive, subcultural, neurotic, psychopathic and symptomatic). The impulsive subtype referred to “gambling associated with loss of control and ambivalence to the activity” (Moran, 1970, p. 594). A small number of studies have not found any evidence of high impulsivity scores in problem gamblers (Allcock & Grace, 1988; Langewisch & Frisch, 1998). For example, Allcock and Grace (1988) administered the Barratt’s Impulsivity Scale and only reported a small difference in impulsivity between problem gamblers and comparison groups. The authors did allow that replication of the research was needed but argued that there is little empirical evidence to support the classification of gambling as an impulse disorder. However, Fernández-Montalvo and Echebúrua (2004) suggested that research into impulsivity has reported the only consistent evidence in personality research. A number of researchers have reported higher rates of impulsivity in pathological gamblers (Blaszczynski, Steel, & McConaghy, 1997; Blaszczynski & Steel, 1998; Fernández-Montalvo & Echebúrua, 2004). According to Fernández-Montalvo and Echebúrua (2004) these findings support the classification of pathological gambling as an impulse control disorder in the DSM IV. Furthermore Blaszczynski et al. (1997) demonstrated that impulsivity was associated with psychopathology and ASPD in a subgroup of problem gamblers which they argued supported the construct of an ‘antisocial impulsivist’ personality dimension.

2.4 Impaired Control in Problem Gambling

In Australia, the term impaired control is one of the central explanatory constructs in problem gambling, and refers to gamblers’ inability to resist the urge to gamble and to cease gambling once they have commenced (Browne, 1989; Corless & Dickerson, 1989). Impaired control has been associated with a number of problematic behaviours such as excessive spending and chasing losses, and it has been reported by regular gamblers and treatment-seeking pathological gamblers (Baron, Dickerson, & Blaszczynski, 1995; Corless & Dickerson, 1989; O’Connor & Dickerson, 2003a). Impaired control is assumed to vary by degree and is measured by The Control of Gambling Scale which was more
recently renamed the Scale of Gambling Choices (O’Connor & Dickerson, 2003a). The scale contains 18 statements which are measured by a 5-point response (1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always). Example items of the scale include ‘Once I’ve started gambling I have an irresistible urge to continue’ and ‘I tried to gamble less often’. Dickerson (1993) pointed out that whilst the Scale of Gambling Choices may have good face validity, it has problems of reliability that are inherent to all self statements such as recall bias and social desirability. The scale also does not provide cut off scores that are indicative of problematic levels of impaired control.

A higher level of impaired control is reportedly related to the frequency of gambling and extent of gambling experience, negative emotions (i.e. depression and frustration), a belief in chasing, and continuous gambling activities (Baron et al., 1995; Corless & Dickerson, 1989; Dickerson et al., 1987). Chasing losses is closely related to impaired control over gambling and can lead to an increased involvement in gambling participation, financial debt, and occupational/family/social difficulties. It has also been reported that chasing is sustained by the belief that a win is imminent (Campbell-Meiklejohn, Woolrich, Passingham, & Rogers, 2008). Dickerson, Haw and Shepherd (2003) reported a recent study that investigated impaired control and coping styles in EGM players. The findings from the study suggested that there is a positive relationship between impaired control and the frequency and intensity of gambling participation. O’Connor and Dickerson (O’Connor & Dickerson, 2003b) reported a study that investigated impaired control in TAB and EGM gamblers, and concluded that impaired control appeared to be a generic process across the two gambling activities for both males and females.

Delfabbro (2008) points out that not all problem gamblers have the personality characteristics described above, and that gambling problems only develop once at-risk individuals are exposed to gambling. Thus, research has also been conducted that examines the structural characteristics of gambling activities and how they contribute to the development of gambling problems.

2.5 Behavioural Explanations of Gambling

The behavioural approach towards gambling has developed from learning theories which posit that patterns of behaviour develop as a result of the environmental factors that
people are exposed to, rather than the dispositional characteristics of the individual. The two central learning theories that have been used to explain gambling behaviour are discussed below: operant conditioning and classical conditioning. In addition, a brief overview of the influence of structural characteristics of gambling activities is provided.

2.5.1 Operant conditioning

Skinner (1938) and Ferster and Skinner (1957) developed the theory of operant conditioning (also referred to as instrumental conditioning) which they suggested could explain gambling behaviour (Skinner, 1953). Operant conditioning is based on the proposition that learning occurs when certain behaviours are seen to be more strongly related to reinforcement. Operant conditioning has been applied to gambling behaviours due to the similarity between gambling schedules of reinforcement and the variable ratio schedule of reinforcement (Delfabbro & Winefield, 1999; Dickerson, Hinchy, England, Fabre, & Cunningham, 1992). In the case of gambling, the gambler’s behaviour is selectively reinforced by gambling wins and other stimuli that produce excitement/arousal and entertainment (Aasved, 2002; Delfabbro, 2008). However, Walker (1992) has argued that operant conditioning is not fully supported by empirical evidence and that other factors are likely to be involved. Although, Walker (1992) did allow that it is generally accepted that gambling is maintained through a consistent flow of wins. In addition, the theory has been criticised on the grounds that it does not reflect reality since the problem gambler continues to gamble despite the accruement of substantial losses, and it also does not sufficiently account for relapses in behaviour (Aasved, 2002). Dickerson (1979) addressed the paradox of persistent gambling in the face of punishment, and suggested that problem/pathological gamblers have experienced a winning phase sufficient for other elements of gambling to become reinforcing. For example, arousal has been demonstrated to reinforce gambling behaviour (Griffiths, 1995b). Skinner (1953) argued that the gambler’s previous reinforcement history influences gambling behaviour. This proposition has been supported by research reported by Bolen and Boyd (1968) and Custer (1982), who emphasised the role of ‘beginner’s luck’ and the ‘big win’. According to operant conditioning theory, a learned behaviour can be extinguished through either punishment or the removal of the positive reinforcer. Thus, when a gambler experiences a long losing streak, then their gambling behaviour should be reduced. However, this does not occur in the case of problem gambling (Aasved, 2002).
The ‘schedule of reinforcement’ or how gambling is reinforced has been shown to have a strong influence on gambling behaviour. The consistent reinforcement of behaviour on a fixed interval schedule is rapidly extinguishable when the subject learns that the expected reward is no longer produced. Operant conditioning also occurs when a reward is provided on an irregular basis (variable ratio). The association learnt is stronger and more persistent on a variable ratio because the subject produces a greater rate of responding and becomes accustomed to the infrequent rewards (Cornish, 1978).

Early research has found some support for the above-mentioned principles in gambling behaviour. For example, Lewis and Duncan (1958) reported a study that examined the role of varying levels of reinforcement in the persistence of slot machine player’s behaviour. The study consisted of an acquisition phase whereby participants completed a number of trials where only 33%, 66% or 100% were reinforced. The second phase required participants to play for as long as they liked, however, no reinforcement was provided. The study found that participants who had received the lowest levels of reinforcement during the acquisition period were more resistant to extinction. The validity of these findings was questioned regarding their generalisability to commercial gambling environments because of the use of tokens as opposed to money. In addition, Cornish (1978) criticised the use of variable ratios of 33%, 66% or 100%, as they do not reflect the actual levels of reinforcement in commercial gambling activities. Levitz (1971) reported a similar study that attempted to circumvent the criticism regarding the use of tokens, and allowed participants to gamble with their accumulated winnings and participation fee. Levitz (1971) reported that participants who experienced an early large win had more difficulty stopping their behaviour when they lost which is consistent with operant principles. However, the participants in the acquisition phase who were in the ‘winning’ schedule of reinforcement group were found to be more likely to gamble for longer periods of time during the non-reinforced condition. This is inconsistent with Lewis and Duncan’s (1958) findings described above. Although, Cornish (1978) did allow that the winning (36%) and losing (14%) sessions might not have enabled the participants to discriminate between the two sessions.

Dickerson et al. (1992) also reported a study that investigated the effects of reinforcement on high-frequency poker machine players (N= 12). The results suggested that participants’ play behaviour was sensitive to machine events i.e., they increased their play behaviour after small wins and slowed their behaviour after large wins (Dickerson et
al., 1992). However, Walker (1992) argued that the decrease in behaviour after a large win may have reflected the fact that the experimenter stopped the participant at this stage in order to ask them questions. Delfabbro and Winefield (1999) reported a subsequent study that employed a similar methodology. The results suggested that as opposed to systematically decreasing play behaviour after a large win (as reported by Dickerson et al., 1992), gamblers were found to disrupt their play in order to admire and collect their wins (Delfabbro & Winefield, 1999).

Another factor important in operant conditioning is the psychology of a ‘near miss’ (Griffiths, 1991, 1995b; Reid, 1986). This phenomenon refers to the occurrence of an outcome that is close to that which is desired, and acts as a non-monetary reinforcer of gambling behaviour (Griffiths, 1991, 1995b; Reid, 1986). Near misses are believed to encourage further play because they provide the gambler with the hope that a win is imminent and may also confirm the gambler’s playing strategy (Reid, 1986 cited by Griffiths, 1999). It has been proposed that a near miss could produce some of the excitement obtained by an actual win i.e. the near miss acts as a secondary reinforcer (Griffiths, 1991, 1995b, 1999).

Furthermore, Kassinove and Schare (2001) reported a study that also investigated the effect of the near miss and the big win on persistence at slot machine gambling (N= 180). The authors found that a near miss had a statistically significant influence on the number of trials in extinction. The results suggested that the 30% near miss condition led to the greatest persistence, as compared to both the 15% or 45% near miss conditions (Kassinove & Schare, 2001). The authors did not find a significant effect for the big win (Kassinove & Schare, 2001). The importance of the early big win has been suggested to predispose a person to the development of gambling problems (Custer, 1984), although from a behavioural (Skinnerian) perspective, a big win would actually encourage a person to be less likely to develop gambling problems (Watherty, Sauter, & King, 2004).

Weatherly et al. (2004) reported a study that investigated the effect of a big win using computer-simulated slot machines between four groups of inexperienced gamblers. The first and second group experienced a large win on either the first play or on the fifth play respectively. The third group experienced two small wins on the second and fifth plays, and the final group did not experience a win. The results suggested that the participants who experienced a big win on the first trial stopped gambling earlier than the group who experienced a big win on the fifth trial (Weatherly et al., 2004). Thus, this finding does not
support the idea that an early big win promotes future play (Weatherly et al., 2004). According to the behavioural approach, the groups who received a large win on the fifth trial and small wins during play should have been the most resistant to extinction and they respectively were found to play the most trials during extinction. However, there were no significant differences between the numbers of trials these two groups played, from the group who received no wins (Weatherly et al., 2004). A number of methodological limitations, such as the size of the big win and when the big win occurred during the trials, may have restricted these findings (Weatherly et al., 2004).

2.5.1.1 The influence of the structural characteristics of gambling activities

There is speculation that the structural characteristics of certain gambling activities may contribute to acquisition, development and maintenance of gambling behaviour (Griffiths, 1993a, 1995a; Parke & Griffiths, 2006, 2007) and also enhance the near miss phenomenon (i.e., Aasved, 2002; Griffiths, 1999; Reid, 1986). Weinstein and Deitch (1974) constructed lists of the structural characteristics and dimensions of gambling activities (multiplier potential, pay out interval, bettor involvement, skill requirement, win probability, payout ratio). Cornish (1978) expanded on this and added intrinsic association and suspension of judgement. Griffiths (1993a) further amended the number of structural characteristics of gambling activities to include symbol ratio proportions, the ‘near miss’, light, colour and sound effects and naming of the activity. Parke and Griffiths (2006; 2007) provide more recent reviews on the structural characteristics of fruit machines due to changes to the ‘modern’ fruit machine. For example, the development of the play ‘feature’, new changes that appears to influence the illusion of control (e.g., bonuses and secret functions), new features which enhance the perception of skill (e.g., when selecting the fruit machine and when operating the fruit machine) and the new multi feature machines that increase the play frequency (Parke & Griffiths, 2007).

In relation to structural characteristics of slot machines and the near miss phenomenon, Aasved (2002) reported how in slot machines, the left reel is programmed to be the first to stop spinning and has the largest number of winning symbols, followed by the middle reel and then the third reel. Aasved (2002) suggested that this feature enhances the near miss phenomenon because players are more likely to see winning symbols before the sequence finishes. Strickland and Grote (1967) undertook an earlier study to examine the effects of near misses in slot machine gambling, one group of participants played a
standard slot machine, and the second group played a modified slot machine where the symbol frequency was reversed. As was hypothesised, the group of participants who were exposed to winning symbols earlier in the sequence were significantly more likely to gamble for longer periods. Ladouceur and Sévigny (2002) also reported a study that investigated how the modality of symbol presentation (sequential vs. simultaneous) influenced video lottery terminal (VLT) play. The results found that sequential presentation influenced persistence at gambling (Ladouceur & Sévigny, 2002).

Modern machines allow players to win when symbols form patterns over a number of lines and this increases the probability that a gambler will be reinforced (Griffiths, 1991a). Given the complexity of modern EGMs there has been some scepticism about the generalisability of findings related to the near miss phenomenon to modern machines (Delfabbro, 2008). Sharpe, Blaszczynski and Walker (2005) conducted two studies to examine the role of near misses in modern machines. The first study required participants (problem gamblers, social gamblers and students) to identify near wins from a series of photographs that displayed near wins, wins and losses across three conditions (a 1-line machine, 5-line machine and a 20-line machine). The authors reported that a small proportion of near misses were identified, and that the complexity of the machine made it harder to identify a near miss (Sharpe et al., 2005). The second study involved student gamblers who were required to play one of three different machines. The study was comprised of three conditions: 1) both losses and near misses 2) all losses and 3) all near misses. The findings from the study suggested that the proportion of near misses did not affect players’ behaviour. This led the authors to suggest that the role of near misses had little effect on modern EGM gambling (Sharpe et al., 2005).

2.5.2 The role of classical conditioning

As previously discussed, people’s gambling behaviours may be related to personality characteristics such as sensation seeking and extroversion which suggests that people may differ in their optimal levels of arousal and excitement. For people who gamble to increase arousal, classical (Pavlovian) conditioning theory posits that when the gambler is exposed to stimuli associated with gambling they become autonomically aroused. During the process of classical conditioning, an organism learns about a relationship between a conditioned stimulus (CS) and an unconditioned stimulus (US). Basic learning is determined to have been established when one stimulus (i.e. the CS),
comes to act as a signal for a second stimulus (i.e. the US). Classical conditioning has been reported to explain associations between gambling stimuli (e.g. sounds) and specific physiological responses (Sharpe & Tarrier, 1993). It has been proposed that if arousal during gambling occurs in addition to negative mood states, then gambling becomes a mood regulating mechanism in part due to the conditioning process (Delfabbro, 2008).

2.6 Arousal and Gambling

Arousal theories of gambling suggest that people differ in their desired levels of arousal and excitement, and thus gambling may be used as a method of obtaining optimal arousal levels (Anderson & Brown, 1984; Brown, 1986). A number of studies have investigated the role of physiological arousal in gambling and have produced conflicting results. This may be due to poor and/or inconsistent methodologies across studies (e.g., Anderson & Brown, 1984; Brown, 1986; Coventry & Constable, 1999; Coventry & Hudson, 2001). Goudriaan et al. (2004) conducted a review of the biobehavioural findings related to pathological gambling and suggested that the self-report studies on arousal have generally indicated that regular gamblers experience more arousal than infrequent gamblers, and that preferred arousal levels differ between different types of gambling, such as off-course betting and slot-machine gambling.

Anderson and Brown (1984) reported one of the first studies that investigated physiological arousal during gambling by recording heart rates of casino players in an authentic laboratory simulation and a real casino. The study compared a group of experienced casino blackjack players to a group of students who had little blackjack experience. The findings suggested that both groups experienced increases in arousal in both conditions, but that the regular blackjack gamblers experienced a significantly higher increase in arousal in the casino environment. This finding led Anderson and Brown (1984) to question the validity of laboratory studies that investigate arousal in gambling. As a result, most researchers attempt to investigate gambling within real contexts or realistic simulations. Griffiths (1993b) reported a study that measured the heart rate of males playing fruit machines. The results found that both non-regular gamblers and regular gamblers mean heart rates were higher during gambling as compared to their baseline data (increases of approximately 22 beats per minute). Interestingly, regular players heart rates immediately started to decrease after play, whereas non-regular gamblers did not
significantly decrease. Griffiths (1995a) suggested that this difference might be because although both groups experienced a ‘high’ physiologically during gambling, that the regular gamblers had become more tolerant to gambling ‘highs’. However, a methodological flaw of most fruit machine studies is that physiological arousal associated with specialist play characteristics of fruit machines, e.g. bonuses, nudges and features, are not measured (Moodie & Finnigan, 2005). Moodie and Finnigan (2005) similarly reported that frequent gamblers had significantly higher levels of autonomic arousal, as compared with infrequent and non-gamblers, and that infrequent gamblers showed greater arousal than non-gamblers. Moodie and Finnigan’s (2005) results indicated that non-gamblers were physiologically aroused during gambling, but to a lesser degree than the infrequent and frequent gamblers.

Ladouceur, Sévigny, Blaszczynski, O’Connor and Lavoie (2003) reported a study that examined the physiological arousal of occasional or regular fruit machine players using heart rate as the measure of physiological arousal. An innovation of the study was that the authors also examined video lottery players’ expectancies of winning and how the structural characteristics of the machine may have influenced arousal. Participants were randomly assigned into two groups of 17: a low expectancy group (playing for fun) and a high expectancy group (playing for real money). The results suggested that frequent gamblers had greater levels of autonomic arousal than either infrequent or non-gamblers during the gambling session. In addition, infrequent gamblers demonstrated higher levels of arousal than non-gamblers. Ladouceur et al. (2003) reported that the high expectancy group experienced faster heart rates prior to and during the gambling session than the low expectancy group, and suggested that the expectancy of winning money provided players with excitement, rather than involvement in the game itself. The authors also reported that specific structural features of the fruit machine (i.e., bonuses, nudges and features) were associated with increased levels of arousal (Ladouceur et al., 2003).

In contrast, there have also been a number of studies that have failed to demonstrate a relationship between gambling and physiological arousal (e.g., Coventry & Norman, 1997; Dickerson et al., 1992). Dickerson et al. (1992) reported a study that examined the heart-rate frequency of high-frequency players. The results did not find any substantial evidence to suggest that arousal is effective in predicting the duration of a gambling session and that there was no evidence of a change in arousal when a big win occurred as would be expected. As pointed out by Petry (2005), arousal may be influenced by a
number of factors, and the results reported in the literature may be related to both the population and gambling activity under review. The tools that have been used to measure physiological arousal may have also influenced the findings. For example, Hills, Hills, Mamone and Dickerson (2001) described how some measures of physiological arousal such as heart rate, have difficulty distinguishing between excitement and anxiety. Both Delfabbro (2008) and Petry (2005) concluded from a review of the literature that the relationship between arousal and gambling and its related effects have yet to be consistently demonstrated.

2.7 Cognitive Biases and Heuristics in Gambling Behaviour

Cognitive approaches to gambling suggest that people continue to gamble despite losing because of different types of erroneous information processing: irrational beliefs and rationalisations of losses (Lambos & Delfabbro, 2007). Irrational gambling cognitions and gambling behaviours have been associated with the development of problem gambling (Ladouceur & Walker, 1996; Miller & Currie, 2008), and when in conjunction with risky gambling practices, they are reportedly able to predict key indicators of pathological gambling (i.e., tolerance and gambling intensity) (Miller & Currie, 2008).

Various irrational beliefs have been identified in gamblers, across a range of gambling activities, through the use of the thinking aloud method (Delfabbro & Winefield, 1999; Ladouceur & Gaboury, 1988; Ladouceur, Gaboury, Bujold, Lachance, & Tremblay, 1991). The thinking aloud method is a technique that requires gamblers to provide a verbal commentary of their thought processes during gambling. Delfabbro and Winefield (1999) reported evidence from a study that employed this method which suggested that 14% of all verbalisations were irrational, and that when only play related verbalisations where included, a total of 75% of verbalisations were irrational. These findings were consistent with Gaboury and Ladouceur (1989) who found a total of 70% of verbalisations were erroneous. Ladouceur (2004) more recently reported a study that employed the thinking aloud method and compared the frequency of erroneous perceptions and gambling-related perceptions between pathological (N= 15) and nonproblem (N= 15) gamblers. The findings from the study suggested that the majority of gamblers demonstrated erroneous perceptions during VLT gambling, but there were no significant differences between the number of erroneous perceptions between nonproblem and pathological gamblers as might be
expected. However, pathological gamblers were found to have more gambling-related verbalisations and demonstrated a stronger belief in their perceptions (Ladouceur, 2004). Findings from these studies suggest the thoughts that spontaneously occur during gambling may frequently be distorted. However, as Walker (1992) pointed out, verbalised statements produced by the thinking aloud method may only describe the behaviour rather than explain why it occurs. A number of more recent studies have also found support for a relationship between problem or pathological gambling and cognitive biases using psychometric measures (e.g., Jefferson & Nicki, 2003; Joukhador, Blaszczynski, & MacCallum, 2004; Raylu & Oei, 2004; Toneatto, Blitz-Miller, Calderwood, Dragonetti, & Tsanos, 1997). Thus, pathological and problem gamblers may experience a number of well-documented heuristics or biases (Lambos & Delfabbro, 2007).

Gambling-related cognitive heuristics are mental rules of thumb used during gambling. Some of the main heuristics employed during gambling include: the representativeness bias or gamble’s fallacy (Kahneman, Slovic & Tversky, 1982), the availability heuristic (Corney & Cummings, 1985), the hindsight bias (Gilovich, 1983) and entrapment (investigated by Rubin & Brockner, 1975). The representativeness bias refers to when people apply a long-term probability to the short term. For example, if a gambling event has not occurred for a long period of time (i.e. reds in roulette or tails in coin tosses), then according to the representation bias, the event is perceived to be more probable (Lambos & Delfabbro, 2007). Gamblers who hold this erroneous belief may continue to gamble and increase the size of their bets in the face of losses because they believe that a win is overdue (Aasved, 2002). It has been proposed that early gambling experiences are likely to contribute to the development of the representation bias (Sharpe, 2002). Delfabbro (2008) described how based on this bias, EGM gamblers avoid machines which have had recent winners and favour machines which have not recently paid out. The notion of entrapment has similarly been used to explain continued gambling because gamblers are reluctant to stop playing after a long period with no wins, as they believe a win must be imminent. Thus, continued play is perceived to be a justified expense because they have passed the point where they can cut their losses (Aasved, 2002). Walker (1992) also suggested that chasing behaviours demonstrated in gambling might be a form of entrapment.

Another commonly observed bias in gambling is the ‘availability’ bias which refers to people’s belief that the chances of winning are more probable than they actually
are. The availability heuristic suggests that gamblers are more easily able to remember previous wins than losses, and as a result people base their gambling decision-making on salient cues such as the memory of a big win, as opposed to making a logical assessment of play (Delfabbro, 2008; Raylu & Oei, 2004).

Griffiths (1994, 1995a; Wood & Griffiths, 2007a) have also reported how a belief in personal luck encourages further play through the misrepresentation of the probability of a win. Gamblers who believe that they are luckier than other people may disregard the odds of winning because of their belief that they are ‘special’, and thus believe that the odds do not apply to them (Delfabbro, 2008). Wood and Griffiths (2007a) also suggested that gamblers continue to gamble because they believe that processes of magical thinking and ritualistic activities can influence luck. Superstitions are irrational cognitions that are related to non-gambling behaviours and are believed to influence gambling outcomes i.e. wearing a lucky shirt will make them luckier (Ladouceur et al., 2002). Joukhador et al. (2004) reported that in a sample of EGM players, the problem gamblers were more likely to report having superstitious beliefs than non-problem gamblers. Superstitious beliefs were also correlated with the intensity of gambling behaviour (Joukhador et al., 2004). According to Aasved (2002), many gamblers have superstitious behaviours and rituals that they believe can influence their luck.

The illusion of control is another common heuristic whereby gamblers believe that they can influence the outcome of chance-related events through skilful play. Toneatto et al. (1997) reported that the illusion of control was one of the most common cognitive biases in heavy gambling. Langer (1975, p. 316) defined the illusion of control as “an expectancy of a personal success inappropriately higher than the objective probability would warrant.” Thus, this heuristic explains why people believe that specific gambling strategies such as changing a dice toss in craps can influence the outcome (Lambos & Delfabbro, 2007). Delfabbro (1998) reported that a small number of gamblers believe that strategies can enhance their gambling performance.

Langer (1975) conducted a number of studies that suggested that the higher the level of personal involvement the gambler had with the gambling activity, then the more likely they were to believe they could predict or influence the outcome. However, Ladouceur and Mayrand (1984) and Ladouceur, Mayrand, Dussault, Letarte and Tremblay (1984) did not find evidence to support the illusion of control. The authors’ findings led
them to propose that there may be two types of illusory control: primary illusory control (belief through personal actions gamblers can influence outcome) and secondary illusory control (gamblers belief that they have the ability to predict the outcome), consistent with the proposition by Rothbaum, Weisz and Snyder (1982) (Letarte, Ladouceur, & Mayrand, 1986). Sharpe (2002) has further suggested that individuals, who experience a relatively large proportion of small wins early in their gambling careers, may be at a higher risk of developing an illusion of control over their gambling. The illusion of control has also been implicated with chasing behaviour in persistent EGM play (Dickerson, 1993). Griffiths (1993a) reported how specialist play features on EGMs may facilitate the illusion of control via EGM player’s personalised involvement and familiarity with the machine since they develop the belief that their actions can influence the machine. More recently, Ladouceur and Sévigny (2005) investigated how a structural characteristic on a video lottery terminal (VLT) might influence gamblers’ thoughts and behaviour. The structural characteristic that was manipulated was a stopping device on the VLT. An initial study examined how the stopping device influenced the development of illusions of control in a laboratory setting (N= 48). During the first phase of the experiment participants played 30 games on a VLT (after an initial 10 practice games) and were unable to use the stopping device. The second phase of the experiment was identical to the first with the exception that participants were then able to use the device to stop the reels from spinning. The results from phase 1 suggested that participants did not develop any illusions. However, after phase 2 of the experiment, a total of 87% of participants reported that they believed that stopping the reels could influence the symbol that would be displayed on the screen. In addition, 57% of the sample reported that they believed that using the stopping device could control the result of the game, and 41% believed that skills were able to influence the outcome of the game. A number of participants (26%) also believed that the stopping device was able to increase their probability of winning. These findings led the authors to suggest that the stopping device may influence the development of the illusion of control and some of the irrational beliefs that may affect gambling behaviour (Ladouceur & Sévigny, 2005). These illusions are reportedly maintained by biased attributional styles and hindsight bias (Gilovich, 1983). Gambling attributions refer to the reasons and rationalisations for successes and failures. Thus, gamblers attempt to minimise the importance of their losses by attributing them to external events such as bad luck, rather than a failure of the gambler’s strategy. Biased attributions are also evident when gamblers attribute gambling successes to personal factors such as personal skill.
Raylu and Oei (2004) recently reported a measure that they developed to screen for a number of gambling-related cognitions. A total of 968 community-based and Psychology 1 students were administered the Gambling Related Cognitions Scale (GRCS) and the data was subjected to a number of validation procedures. A factor analysis indicated that 23 items formed five factors which accounted for 70% of the total variance: Interpretative Bias, Illusion of Control, Gambling expectancies, Predictive Control and Inability to Stop Gambling. The findings suggested that participants who scored higher on the SOGS were also likely to score higher on nearly all of the subscales. Although, the subscales were only found to explain 16% of the variance in the SOGS scores (Raylu & Oei, 2004). Delfabbro (2008) critiqued the study on the grounds that some of the items included in the GRCS may be more strongly related to motivation or impaired control, and that it is difficult to conceptually differentiate between predictive control and illusion of control items. Jefferson and Nicki (2003) also reported the development and validation of a scale to measure cognitive distortions: the Informational Biases Scale (IBS) \((N=96)\). This scale aimed to measure cognitive distortions such as the illusion of control, gambler’s fallacy, illusory correlations and the availability heuristic in VLT players. An exploratory principal component analysis indicated that the variability in the IBS was accounted primarily by one factor that appeared to reflect the “misconception of the nature of randomness” (p. 398), as described by Ladouceur and Walker (1996 cited by Jefferson & Nicki, 2003). In addition, the IBS scores were predicted by measures of pathological gambling and negative affect (Jefferson & Nicki, 2003).

2.8 Gambling as an Addiction

Due to the medical/disease model advocated in the study of drug and alcohol addiction, problem or pathological gambling has also been conceptualised as a form of addiction (Lesieur & Rosenthal, 1991). The traditional addiction model of problem gambling suggests that the disorder is consistent with other forms of addiction such as alcoholism and drug dependence, despite the fact that no substance is consumed. Numerous arguments have been made for and against the conceptualisation of gambling as an addictive disorder (e.g., Blaszczynski & McConaghy, 1989; Blaszczynski & Nower, 2002; Jacobs, 1986; Petry, 2005; Walker, 1992).
There are two ways that problem/pathological gambling has been conceptualised as an addiction: 1) as a physiological dependence and 2) as a psychological addiction. The traditional approach to the study of addiction views addiction as a physiological dependence, and predominantly focused on issues of tolerance, withdrawal and craving. This approach suggests that gamblers have to gamble with increasing amounts of money over time to obtain the same level of excitement because they become tolerant to the stimulation afforded by the activity. It also suggests that gamblers experience withdrawal symptoms when they cannot gamble, for example depression and anxiety and other physiological symptoms, and/or have a strong desire to gamble when they are not.

Walker (1992) and more recently Delfabbro (2009) have suggested that most Australian researchers do not generally ascribe to the idea that problem gambling is a physiological addiction, because there is little empirical evidence to support the above described processes. For example, the fact the gamblers generally increase the size of the bets over time does not necessarily mean that they are addicted to the need to obtain excitement (Delfabbro, 2008). In addition, the previously described study by Dickerson et al. (1992) found that there was no relationship between arousal and gambling as would have been predicted by the traditional addition model approach. There are also a number of studies that suggest that gamblers use gambling as a means of escape as opposed to achieving excitement (e.g., Di Dio & Ong, 1997; Scannell et al., 2000; Wood & Griffiths, 2007a). The medical model also neglects the possibility that other variables such as conditioning processes and irrational beliefs may play a role in the development of problem gambling (Aasved, 2003).

According to Delfabbro (2009), interest in the traditional addiction approach to problem gambling has had some renewed interest because of the recognition that problem gamblers are not a homogenous population (e.g., Blaszczynski & Nower, 2002). For example, in Blaszczynski and Nower’s (2002) Pathways Model of Problem Gambling there is the suggestion that the traditional addiction model may be relevant for a subgroup of problem gamblers who are characterised by a number of pathologies. Blaszczynski, Walker, Sharpe, and Hill (2005) conducted a study that examined features of the traditional addiction model in Australian gamblers, more specifically, it aimed to determine whether problem gamblers also experience tolerance and withdrawal consistent with what has been demonstrated in substance dependence. The study compared the symptomology of three groups of individuals: 1) problem gamblers with no alcohol dependence 2) problem
gamblers with an alcohol dependence and 3) alcohol dependence no problem gambling. Blaszczynski et al. (2005) did find evidence of both tolerance and withdrawal, with problem gamblers generally increasing the size of their bets over time (tolerance). Problem gamblers were also more likely to report withdrawal symptoms (irritability, anxiety and restlessness) than the alcohol dependence group. However, the authors did suggest that the gamblers might have actually been attempting to recover previous losses and/or obtain larger wins, as opposed to demonstrating a need for physiological stimulation. In addition, the authors allowed that the above-cited withdrawal symptoms might have been associated with other variables, rather than solely reflecting physiological processes.

Despite these findings, there is some evidence to support the proposition that gambling may be a form of pathology since it appears that there is a subgroup of gamblers more likely to have high levels of cross addiction and comorbidity (e.g., Pathway 3 in Blaszczynski & Nower, 2002 which is discussed in 2.8.3). There has been the suggestion that this subgroup of people may be more vulnerable to the development of addictive behaviours because they have certain dispositional or neurophysiological characteristics (Delfabbro, 2009). Petry (2005) provided an overview of the recent research that has examined the biological basis of pathological gambling. Petry (2005) suggested that whilst to date the research is still developing and has not provided conclusive evidence, that there appeared to be data that supports a familial component of gambling that may in part be influenced by the genetics of individuals. According to Petry (2005) there is also evidence to suggest that there may be some biological abnormalities in pathological gamblers, as compared to controls which may make an individual vulnerable to the development of problematic gambling. Goudriaan et al. (2004) similarly provided a comprehensive review of biobehavioural studies of pathological gambling. The authors concluded that, although the area to date has numerous methodological challenges, the results from the research are consistent with recent theoretical developments in addiction theory that emphasise the “involvement of brain reward pathways, neurotransmitter abnormalities, the frontal cortex and the psychophysiological stress system” (Goudriaan et al., 2004, p. 123). These conclusions suggest that further research may provide further evidence to support the importance of the physiological disposition of problem gamblers.
2.8.1 Gambling as a psychological addiction

The view that gambling is a psychological addiction is based on the proposition that people may gamble to meet certain needs, such as to escape from depression and anxiety, and that over time they become reliant on gambling to relieve such dysphoric moods (Jacobs, 1986, 1988; Walker, 1992). In other words, people become addicted to the reinforcement provided by engaging in the gambling activity.

A number of theorists speculate that there is a subgroup of people who are vulnerable to developing gambling problems. One such theory focuses on individuals who experience childhoods that foster a deep sense of inadequacy or those who have had personal experiences involving family stress in their early years when combined with a successful introduction to gambling activity (i.e. an early win) (Jacobs, 1986). Such theories suggest certain experiences may be important aetiological factors for the development of problem gambling (Carlton & Goldstein, 1978; Jacobs, 1986). Blaszczynski and Nower (2002) proposed a pathways model that described three subgroups of problem gamblers due to recognition of the fact that not all problem and pathological gamblers are the same, one of which describes a subgroup of emotionally vulnerable individuals. Jacobs (1986) provided a comprehensive psychological account of addiction in his General Theory of Addictions which the current thesis has used as a framework.

2.8.1.1 Durand Jacobs' General Theory of Addiction (1986)

Jacobs (1986) developed a General Theory of Addiction based on the observation made by clinicians working with individuals addicted to different substances and behaviours (e.g. alcoholism, drug dependencies, eating disorders and pathological gambling), that there are common features across addictions in relation to individual’s backgrounds, the course of addiction, treatment and treatment outcomes (Jacobs, 1986). Jacobs (1986) argued that at one time or another most of the general population encounters and participates in activities and substances that have addictive properties. The fact that only a minority of individuals actually become addicted suggests that certain people may be predisposed to addiction. The predisposing factors that Jacobs’ (1986) postulated
contribute to addiction are interrelated and refer to the addicted individual’s physiological composition and childhood experiences. Jacobs (1986) proposed that addiction-prone individuals are more likely to have abnormal physiological resting rates, e.g., they are either chronically or excessively depressed or excited. Such people therefore strive to increase their levels of physiological arousal or decrease their arousal levels (gambling used as a method of relaxation) (Walker, 1992). Evidence suggests that some individuals need to increase their levels of physiological arousal (gambling is exciting and therefore a way individuals can increase their arousal) or decrease their arousal levels (gambling as a method of relaxation) (Walker, 1992).

Jacobs’ (1986) other predisposing factor interrelated with physiological resting rates is childhood experiences that lead the individual to believe they are inadequate or inferior. This perception encourages them to find experiences (such as gambling or substances that have potentially reinforcing qualities) that allow them to escape their reality and fulfil a desire to take on different personas (e.g. to believe that they are highly successful and respected). There has been some suggestion in the literature that gambling may be used as a method of coping with trauma and abuse, or as a means of regulating dysphoric mood (Lesieur & Blume, 1991; Lightsey & Hulsey, 2002; Thomas & Moore, 2003).

2.8.1.1 Dissociation and gambling

An important element of Jacobs’s theory (1986, 1988) is the proposal that when individuals engage in a potentially addictive behaviour they may have dissociative-like experiences that differentiate them from non-addicts. This assertion is based on the assumption that gambling produces a significant level of arousal that allows the individual to narrow their attention or alter their consciousness and ‘dissociate’ (Blaszczynski & Nower, 2002). Jacobs (1986) believes that if a substance or activity is to be potentially addictive then they must possess certain attributes that will make an individual more inclined to reach a dissociative-like state. It has been hypothesised that the substance or activity must contain an element enabling a complete focus on the individuals’ current reality, allowing attention to be diverted away from whatever the individual is seeking to repress (e.g. the substance or activity ‘blurs reality testing’). In conjunction with this, it is proposed that the substance or activity must also have the ability to reduce an individual’s negative self-perception and allow the individual to take on a different persona, enabling
them to think of themselves and their social interactions in a positive light. It is the
frequency and intensity of these three qualities that may interact and help an individual
cross over into dissociative-like state (Jacobs, 1986). The addictive substance or activity
can then be used as a method of self-treatment enabling the individual to escape from the
problems the individual wishes to forget (e.g., allows for the escape from stress and
unhappiness) (Diskin & Hodgins, 1999).

The term ‘dissociation’ is difficult to define and prominent experts in the field have
proposed varying conceptions of the construct (Gershuny & Thayer, 1999). Bernstein and
Putnam (1986) proposed that dissociation is a process where there is no integration of
thoughts, feelings, and behaviours into consciousness and memory. The American
Psychiatric Association currently defines dissociation as a “disruption of the usually
integrated functions of consciousness, memory, identity or perception of the environment”
(APA, 1994, p. 477). Leading researchers and theorists in the field have attempted to
classify what features should be included in the dissociative spectrum. There is a general
consensus indicating that amnesia (loss of memory), depersonalisation (a feeling of being
detached from oneself e.g. being an observer of oneself) and derealization (perceiving the
external environment as being unreal) should be included (Gershuny & Thayer, 1999, p. 637).

Dissociative experiences are features of numerous psychological disorders
including: “borderline personality disorder, post-traumatic stress disorder, bulimic
symptoms, somatization and dissociative identity disorder” (Ross-Gower, Waller, Tyson,
& Elliott, 1998, p. 314). The incidence of dissociative symptoms is particularly common
amongst people who have experienced trauma, particularly if the trauma is chronic (Ross-
Gower et al., 1998; Wenzel et al., 1996). It is now widely recognised that there is a
relationship between dissociative disturbance and traumatic experiences (Steinberg, 1995),
with dissociative experiences one of the hallmark features of posttraumatic stress disorder
(Gershy & Thayer, 1999). Evidence indicates that individuals with traumatic backgrounds
who have experienced forms of dissociation may be vulnerable to the development of
addictive behaviours. Ross-Gower et al. (1998, p.322) concluded that the dissociative state
of ‘escape from awareness’ may be involved in the development of impulsive behaviours.
Gambling, in effect, may allow an individual to experience a form of ‘emotional escapism’
by enabling the individual to narrow their attention exclusively to the gambling activity
and ‘alter his or her state of consciousness and sense of disconnection from self and environment (Blaszczyński & Nower, 2002, p.7).

Several studies have indicated that it is not uncommon for members of the general population to have experienced dissociation to varying degrees (Gershuny & Thayer, 1999; Ross-Gower et al., 1998). Epidemiological studies report that between between five to ten percent of the general population have experienced high (pathological) levels of dissociation (Saxe, 2001). Dissociation is commonly understood as existing on a continuum ranging from ‘normal’ adaptive forms of dissociation through to ‘pathological’ for example, daydreaming through to dissociative disorders (Ross-Gower et al., 1998; Waller, Carlson, & Putnam, 1996). However, there is some debate suggesting that dissociation should be understood from a typological model that distinguishes between pathological and non-pathological states of dissociation in more detail (Seedat, Stein, & Forde, 2003). The conceptualisation of dissociation as existing on a continuum is important in the debate surrounding the proposition that problem and pathological gamblers may experience dissociation. Some theorists argue that problem gamblers may experience a form of absorption whilst playing but this is by no means pathological and should therefore not be conceptualised as a true form of dissociation in a clinical sense (Blaszczyński & MacCallum, 2002). The Australian Gaming Council in 2006 initiated a special report into the issue and obtained the views from high profile researchers in the field. The overall findings showed that there is still a level of uncertainty as to the degree of dissociation experienced by pathological gamblers, if indeed they experience a true clinical form of dissociation at all (Allcock, 2006b). For example, the editor of the report Clive Allcock (2000a) argued that problem gamblers do not adequately meet the criteria for a dissociative disorder according to the DSM-IV. Delfabbro (2006) acknowledged that gamblers often lose control over their behaviour during gambling but that it was unclear as to whether they experience a dissociative disorder. The report concluded that further research is required to investigate the phenomenon.

Evidence suggests that a higher prevalence of gambling participation is related to a higher frequency of dissociative experiences (Kuley & Jacobs, 1988). Jacobs (1988) constructed four questions aimed to measure the frequency of dissociative experiences specific to gamblers (measuring frequency based on never, rarely, occasionally and frequently). The first question aimed to determine if gamblers experienced trance-like states whilst gambling, “After a gambling episode, did you ever feel like you’d been in a
trance”? The second question, “When you gambled did you ever feel like you had taken on another identity?” sought to establish if gamblers experienced alternate identities whilst gambling. The third question focused on experiences of depersonalisation, “While gambling did you ever feel like you were outside yourself—watching yourself gamble?” The last question was designed to capture experiences of amnesia during gambling: “Have you ever experienced a memory blackout for a period when you had been gambling?” Gupta and Derevensky (1998) constructed an additional question that was related to a loss of time during gambling. Jacobs (1985) reported that a number of different clinical samples of addicted individuals reported more dissociative experiences than normative samples. The individuals in the pathological gambling sample reported that during gambling they had felt like they were in a trance (90%), felt as though they had taken on another identity (85%), had out of body experiences (68%) and experienced memory blackouts (61%) (Jacobs, 1985). Similarly, Jacobs (1988) found that gamblers do experience dissociation and that this occurs in combination with the relief of dysphoria. Further evidence was derived from studies that have compared problem gamblers with social gamblers. Kuley and Jacobs (1988) found that problem gamblers experienced more dissociative symptoms than social gamblers. Similar evidence was obtained by Gee et al. (2005) using Jacobs’ questions in conjunction with the Spielberger State-Trait Inventory (Spielberger, Gorsuch & Lushene, 1970). This suggested that dissociative-like experiences are correlated with high levels of subjective anxiety/arousal during gambling sessions.

Most studies on dissociation and gambling have employed self-report measures, with the exclusion of Diskin and Hodgins (1999) who also used a behavioural measure of dissociation. Diskin and Hodgins (1999) conducted a study to investigate attention and dissociation in pathological and occasional video lottery terminal (VLT) players using Jacobs’ questions and the DES. This study found that pathological gamblers were slower to respond to random irrelevant light stimuli whilst playing a demonstration version of a video lottery terminal. The results from this study also found that the pathological gamblers were significantly more likely to report dissociative symptoms as measured by the DES, but neither group differed significantly from normative scores. A follow up study was conducted by Diskin and Hodgins (2001) in response to low participant numbers in the original study and a lack of a baseline measure for reaction time, found that problem gamblers reported significantly more dissociative experiences than social gamblers. This study replicated their earlier findings which found problem gamblers took longer than social gamblers to respond to lights when they were playing the VLT. They concluded that
these findings lent support to the idea that problem gamblers can become more intensely focused on the VLT. Problem gamblers were also significantly more likely to report higher levels of dissociation as measured by Jacobs’ questions. However, on closer examination of responses to Jacobs’ questions the authors found that problem gamblers affirmatively reported two questions more so than social gamblers: more memory blackouts and losing track of time. Another study conducted by Wynne (1994 cited by Diskin & Hodgin, 1999; Diskins & Hodgins, 2001) administered Jacobs’ questions to Gamblers Anonymous (G.A) members and social gamblers, and found that G.A members reported significantly higher levels of dissociation than social gamblers. The same study also found that pathological gamblers scored significantly higher on the DES than the social gamblers. A study conducted by Kuley and Jacobs (1988) into the relationship between dissociative-like experiences and sensation seeking among social and problem gamblers found that participants who reported more ‘life problems’ associated with their gambling, also tended to report having experienced a higher number of dissociative experiences. It has also been proposed an individual’s greater dissociative experience may also reflect an increase in their susceptibility to pathological gambling (Kofoed, Morgan, Buchkoski, & Carr, 1997). However, Kofoed et al. (1997) concluded that high levels of prior dissociative experience was not associated with VLT pathological gambling.

2.8.1.2 Gambling as a coping and mood regulation mechanism

Gambling has been characterised as a method of coping with experiences of trauma and abuse (particularly amongst women problem gamblers), or as a method of reducing levels of anxiety and depression (Lesieur and Blume, 1991). Research has found that problem gamblers have a limited repertoire of coping skills to draw from and lack flexibility in their capacity to employ the coping strategies they have at their disposal. McCormick (1994) found a relationship between the severity of gambling problems and the use of emotion focused coping strategies. Individuals who employ avoidant coping mechanisms may engage in gambling as an inappropriate method of escaping reality or blocking emotional distress.

In line with conceptualising gambling as a method of coping is the indication that a number of extrinsic factors can occasionally trigger a person into engaging in a gambling activity or hasten their progression into problematic gambling behaviours for example, death of a close relation or spouse, physical illness or a threat to ones life and career.
disappointment (Lesieur & Rosenthal, 1991). Indeed, McCormick (1994) stated that a pathological impulsive behaviour such as problem gambling can be cued by a triggering event. Dickerson et al. (2003) reported a study investigating gambling and how coping with a recent distressing or disruptive life event was related to harmful gambling. In addition to external triggering events such as those described above, the authors suggested that a triggering event may also/alternatively be internal such as a negative internal state like anxiety or other aversive emotional states. Coman et al. (1997) found that 51% of pathological gamblers use gambling as a method to relieve stress. Individuals who were suffering from stress and anxiety were also found to be more likely to focus their attention on low-skill gambling such as poker-machines. When a negative mood state is reduced through the participation in a gambling activity it has been suggested that it acts as a negative reinforcer, and therefore encourages future play (Blaszczynski & Nower, 2002). Gambling provides the player the means to divert and narrow their attention to a specific reality which has been hypothesised to alleviate negative mood (Getty et al., 2000). The relationship between gambling and mood states is not fully understood e.g., does gambling relieve negative mood states or does it in fact cause negative mood states (Gee, Coventry, & Birkenhead, 2005)? An innovative study by Gee et al. (2005) used mobile phones to collect data on the relationship between gambling and mood states from gamblers in a real life context. This study took measures of anxiety/arousal, dissociation and impaired control before, during and after a gambling session. The authors concluded that in fact “gambling may be a cause of increased subjective anxiety/arousal, rather than functioning to relieve it” (Gee et al., 2005, p. 53). Interpersonal problems might also act as triggering events e.g. a relationship break up (McCormick, 1994).

Research suggests that the extent to which these motivations to gamble are influential may vary according to gender and the type of gambling (Griffiths & Delfabbro, 2001). Attention has been drawn to the fact that female gamblers, in particular, tend to gamble as a method of coping with loneliness and boredom and anxiety and stress (Lesieur & Blume, 1991). Conversely, it would appear that males are more inclined to gamble for the excitement and pleasure they experience whilst playing, for financial reasons and to a lessor degree for stress reduction (Blaszczynski & Nower, 2002; Lesieur & Blume, 1991). It has consequently been hypothesised that women may be more likely to participate in gambling activities that contain a strong element of chance such as EGMs (Griffiths & Delfabbro, 2001). Getty et al. (2000) found that female GA members had higher levels of depression and reactive coping mechanisms. A quantitative study conducted by Thomas
and Moore (2003) examined coping and dysphoric mood and produced evidence for gender differences in motivations for gambling. Female participants were found to be more likely to gamble in an effort to relieve loneliness, anxiety, depression and boredom, hence using gambling as a method of emotional regulation and coping. Getty et al. (2000) also found that female GA members had higher levels of depression and reactive coping mechanisms than male gamblers.

A study conducted by Scannell et al. (2000) investigated the relationship between control over gambling and coping strategies employed by female gamblers, and found that low control over gambling was related to the use of emotion-focused coping strategies. These findings were supported by a study conducted by Quirke (1996 cited in Delfabbro & LeCouteur, 2003) that also investigated control over gambling and coping styles, and found a negative correlation between impaired control and emotion-focused coping.

2.9 Integrated Models of Problem Gambling

A number of authors have attempted to account for the fact that gambling is multifaceted behaviour (e.g., Brown, 1986; Blaszczynski & Nower, 2002; Griffiths, 2005; Griffiths & Delfabbro, 2001; Moran, 1970). Brown (1986) recommended an eclectic approach to gambling in order to avoid the limitations of a single perspective. Early work by Moran (1970) identified sub cultural, neurotic, impulsive, psychopathic and symptomatic varieties of gamblers. Griffiths and Delfabbro (2001) argued against a single theoretical perspective to explain gambling on the basis that it is a multifaceted behaviour which is strongly influenced by contextual factors. The authors recommended the conceptualisation of gambling as a biopsychosocial behaviour, as this could account for both individual differences and contextual factors (Griffiths & Delfabbro, 2001). Blaszczynski and Nower (2002) similarly argued against conceptualising all problem gamblers as a homogenous population. The authors incorporated clinical experience into their Pathways Model and acknowledged that, although a number of symptoms are present and common to most problem gamblers, they argued that there are different trajectories into the development of problems for each individual. Thus, they proposed a Pathways Model of Problem Gambling. The authors allowed that there are certain processes that are applicable to all of the pathways which influence the development and maintenance of problematic gambling: availability and access to gambling, classical and operant
conditioning and irrational beliefs. Blaszczynski and Nower’s (2002) Pathways Model of Problem Gambling shall be discussed in further detail because of the current thesis’s focus related to the second pathway described in the model.

2.9.1 Pathway 1: Behaviourally conditioned pathological gambler

The first pathway represents a subgroup of gamblers who are believed to be ‘behaviourally conditioned’ and do not demonstrate any significant premorbid features of psychopathology. This subgroup of gamblers involvement is proposed to fluctuate between heavy and problem gambling. They are also believed to have the most positive diagnosis due to their motivation to enter treatment and their compliance with instructions.

2.9.2 Pathway 2: Emotionally vulnerable gamblers

The second pathway is similar to Jacobs’ (1986) theory, and represents a group of gamblers who are believed to be emotionally vulnerable. Pathway 2 gamblers are characterised by a number of premorbid psychological problems such as anxiety and/ depression, a history of negative life events and family backgrounds, developmental problems and poor coping. In addition to the variables described above that influence each of the gambling pathways, emotionally vulnerable gamblers are motivated to gamble in order to regulate affective states and/or to attain specific psychological needs. Thus, treatment with this subgroup of gamblers needs to address underlying vulnerabilities in addition to gambling behaviour.

2.9.3 Pathway 3: Antisocial impulsivist

The third pathway is based on Blaszczynski et al.’s (1997) group of antisocial impulsivist pathological gamblers. This subgroup of gamblers are characterised by impulsivity and antisocial personality disorder, in addition to the psychosocial and biologically based vulnerabilities. The group may also demonstrate neurological or neurochemical dysfunction reflective of impulsivity (Steel & Blaszczynski, 1996). They are also likely to have a history of substance abuse, suicidality, irritability and criminal behaviours due to their proneness towards impulsivity. Treatment for this group is difficult due to their reluctance to commit to treatment and they may require medication to balance their neurochemistry (Pathway 2 gamblers may also benefit from medication).
According to Aasved (2003), Blaszczynski and Nower’s (2002) pathways model is one of the most comprehensive attempts of conceptualising problem gambling to date. However, Aasved (2003) did suggest that the model overlooks a number of variables that may be important i.e., demographics, subcultural norms, and other environmental risk factors.

2.9.4 The role of environmental/ecological influences on problem gambling

As previously mentioned, Blaszczynski and Nower (2002) highlighted the importance of certain factors common to all problem gamblers such as availability and access to gambling. Chapter one reported that there is a positive relationship between increasing accessibility and availability of gambling (e.g., Griffiths & Delfabbro, 2001). Blaszczynski and Nower (2002) also discussed how ecological determinants such as public policy and regulatory legislation influence gambling because they may “create and foster an environment in which gambling is socially accepter, encouraged and promoted” (p. 491).

The gambling environment itself may influence gambling behaviour. According to Finlay et al. (2006) features of a physical setting can influence the emotions and behaviour of people in the environment. The authors concluded from their work that gambling environments which contain features which reduce stress may produce positive emotions, restrict negative thoughts and regulate arousal in casino gamblers (Finlay et al., 2006). Furthermore, Griffiths and Parke (2003) examined how gambling environment features such lighting, music, colour and physical comfort may influence gambling behaviour. Griffiths and Parke (2005) suggested that music either in the gambling environment or in the gambling activity itself may potentially influence the acquisition, development, and maintenance of gambling behaviour. Similarly, Parke and Griffiths (2006) hypothesised that sounds and music from fruit machines may reinforce gambling behaviour. White (1989) described how the flashing lights and sound effects of such activities give the gambler the constant impression of fun and activity and are also suggestive of more wins than technically possible.

Other features of gambling environments such as the provision of alcohol, presence of ATMs and cigarette smoking in gambling venues may also influence gambling behaviours. The literature suggests that the consumption of alcohol during gambling may
impair an individual’s capacity to control their gambling behaviour, hence increasing the likelihood that people may gamble excessively (e.g., Baron & Dickerson, 1999; Kyngdon & Dickerson, 1999). It has also been recommended that ATMs should be removed from the gaming room floor in an attempt to reduce excessive expenditure on gambling (e.g., Productivity Commission, 1999). A study conducted by Blaszczynski et al. (2001) found that problem gamblers were more likely to smoke and drink more alcohol than recreational gamblers. The same study however did not find a difference in the usage of ATMs between problem and recreational gamblers. McMillen et al. (2004) also did not find a strong relationship between problem gambling and the use of ATMs in ACT gaming venues.

2.10 Summary of Section A

Chapter one and two provide an overview of some of the important features of problem gambling and how different theoretical perspectives have attempted to explain the phenomenon. It is clear that problem gambling is a serious public health concern in Australia, and in particular problem gambling related to EGM gambling. The review of the literature suggests that Jacobs’ (1986) theory may provide a useful framework in conceptualising a subgroup of Australian problem gamblers and warrants further research.
Chapter 3

Study 1

A Preliminary Quantitative Investigation of Dissociative-Like Experiences Amongst South Australian Gamblers

3.1 Aims of the Current Study

This chapter describes a study that provided a preliminary report on the frequency of dissociative-like experiences, such as those referred to by Jacobs (1986, 1988), within an adult community sample of South Australians. The study aimed to examine the frequency of such experiences by categories of gambling severity and the type of gambling activity engaged in.

To achieve the above stated aims, four questions about dissociative-like experiences during gambling were included in the Gambling Prevalence in South Australia Survey (South Australian Department for Families and Communities, 2006). The survey aimed to obtain an updated prevalence of gambling and problem gambling among the adult (18 years of age and older) and youth (16 to 17 years of age) population, and to examine the gambling patterns in South Australia. It also aimed to investigate areas of gambling that have not been well established in the literature, for example, dissociation or loss of reality during gambling (South Australian Department for Families and Communities, 2006). To explore the frequency of dissociation or loss of reality experiences during gambling, participants were asked if they had: lost track of reality, felt as though they were in a trance, lost track of time and/or felt as though someone else had been controlling their actions. These questions were not explicitly the same as Jacobs’ (1988) dissociation questions since the South Australian Government designed them. However, the questions essentially reflect the same phenomenon, and subsequent studies will employ Jacobs’ (1988) questions. This study was a secondary data analysis which aimed to provide population data concerning the frequency of dissociative-like experiences within the South Australian population.
3.2 Do Gamblers Report Dissociative-Like Experiences during Gambling?

As discussed in the literature review, Jacobs’ (1986) General Theory of Addictions proposed that problem gamblers have dissociative-like experiences when gambling. Browne (1989) reported a similar concept, and suggested that people in extreme emotional states may gamble excessively or ‘go on tilt’; a state where people appear to have no control over their behaviour or care for the consequences of their behaviour (Delfabbro, 2006). To date there has been substantial debate within the literature about the occurrence of dissociative-like experiences during gambling and whether or not dissociation in a true ‘clinical’ sense occurs.

Numerous studies have been conducted that employ questions to determine the frequency of dissociative-like experiences during gambling (e.g., Jacobs, 1988; Kuley & Jacobs, 1988, etc). Jacobs (1988) found evidence to suggest that different kinds of addicts tend to share a common set of dissociative-like experiences, and termed this as a “state of altered identity” (p. 27). Kuley and Jacobs (1988) reported that problem gamblers scored significantly higher than social gamblers on dissociative experiences. Wynne Resources (1994 cited by Diskin & Hodgins, 2001) gave Jacobs’ (1988) questions to both non-problem gamblers and problem gamblers. The study found that only the problem gamblers reported that they had felt as if they had been in a trance and lost track of time while gambling. Wynne Resources (1998 cited by Diskin & Hodgins, 2001) also reported a gambling prevalence study that found a larger percentage of problem and probable pathological gamblers reported more dissociation than non-problem gamblers.

There appears to be some consensus that gamblers experience some alterations in consciousness or awareness when gambling which is based on reports of narrowed attention, losing track of time, alterations in memory and loss of control over behaviour in gambling sessions (for example, Allcock, 2006b; Delfabbro, 2006, Jacobs, 1986, 1988, 2006). Since gambling increases arousal and this narrows attention (which may facilitate experiences likened to dissociation), certain types of gambling activities, such as EGM gambling (where there is a sustained focus of attention), may have more frequent reports of dissociative-like experience during play.
3.3 Hypotheses

1) High risk gamblers are more likely than moderate risk and non-problem gamblers to report experiences of losing track of reality/dissociative-like experiences.

2) Experiences of losing track of reality/dissociative-like experiences are more likely to occur whilst playing EGMs than on any other gambling modalities.

3.4 Methodology

The methodology that was employed for the South Australian Gambling Prevalence Report 2006 will be described below since this is where the data for the current study was obtained (South Australian Department for Families and Communities, 2006).

3.4.1 Sample characteristics

Households within the South Australian general community with a telephone number listed in the Electronic White Pages (EWP) were eligible for the study. Telephone numbers were randomly selected from the EWP from both the Adelaide metropolitan and country regions. For each household, the person (aged 16 years or older) who had most recently had their birthday was selected for the interview. Non-contactable persons were not replaced.

A total sample of 33,000 was drawn at the commencement of the study; however, sample size loss was contributed to by: fax/modem connection (322), non-connected numbers (4243), household selected twice (132), mobile number belonging to a non South Australian resident (167) and non-residential numbers (616). A remaining total of 27, 518 was eligible for the survey. The overall participation rate (the completed interviews divided by the eligible sample minus the number of households where no contract was made during the survey) for the survey was 73.0%. An actual response rate (eligible sample divided by number who completed the interviews) was 64.5%. The final sample size was $N=17745$. 

Weighting of the sample was conducted to correct for its disproportionality in relation to the population of interest (i.e. the South Australian community, Australian Bureau of Statistics cited by South Australian Department for Families and Communities, 2006). “The data was weighted by age, sex, area of residence and probability of selection in the household” (p. 16) in order to reflect the composition of the South Australia population of persons aged 16 years and over (South Australian Department for Families and Communities, 2006). A consequence of data weighting is that the data results have rounding effects, and thus the percentages reported below should be referred to rather than the actual numbers of respondents (South Australian Department for Families and Communities, 2006).

Table 3.1 provides demographic information of the respondents included in the study. The sample is well represented by both genders and across the majority of age categories, although the 16 to 17 years, 65 to 74 years and 75 years and older age categories appeared to be slightly underrepresented. The majority of respondents were either married or in a de facto relationship (63.9%) and were born in Australia (78.0%).
Table 3.1

*N (%) of people in each country of birth and marital status category of respondents aged 16 years and over (N = 17745)*

Adapted from South Australian Department for Families and Communities (2006)

Participants had a wide range of educational experience and household incomes. Under half of the sample was employed full time (40.1%). The socio-economic demographic indicators included in the survey are reported in Table 3.2.

NOTE:
This table is included on page 68 of the print copy of the thesis held in the University of Adelaide Library.
Table 3.2

*Number of participants in each socio-economic indicator category (N = 17745)*

<table>
<thead>
<tr>
<th>SES Indicator Variable</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still at school</td>
<td>608</td>
<td>3.4</td>
</tr>
<tr>
<td>Left school 15 years or less</td>
<td>2529</td>
<td>14.3</td>
</tr>
<tr>
<td>Left school after 15 years</td>
<td>5096</td>
<td>28.7</td>
</tr>
<tr>
<td>Left after 15 years and still studying</td>
<td>854</td>
<td>4.8</td>
</tr>
<tr>
<td>Trade/ apprenticeship</td>
<td>1812</td>
<td>10.2</td>
</tr>
<tr>
<td>Certificate/ diploma</td>
<td>3446</td>
<td>19.4</td>
</tr>
<tr>
<td>Bachelor or higher</td>
<td>3358</td>
<td>18.9</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>42</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Work Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full time</td>
<td>7124</td>
<td>40.1</td>
</tr>
<tr>
<td>Part time</td>
<td>3316</td>
<td>18.7</td>
</tr>
<tr>
<td>Unemployed</td>
<td>437</td>
<td>2.5</td>
</tr>
<tr>
<td>Home duties</td>
<td>1293</td>
<td>7.3</td>
</tr>
<tr>
<td>Retired</td>
<td>3764</td>
<td>21.2</td>
</tr>
<tr>
<td>Student</td>
<td>1265</td>
<td>7.1</td>
</tr>
<tr>
<td>Unable to work</td>
<td>441</td>
<td>2.5</td>
</tr>
<tr>
<td>Other</td>
<td>83</td>
<td>0.5</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>23</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Household income ($)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 12,000</td>
<td>672</td>
<td>3.8</td>
</tr>
<tr>
<td>12,001-20,000</td>
<td>1727</td>
<td>9.7</td>
</tr>
<tr>
<td>20,001-40,000</td>
<td>3037</td>
<td>17.1</td>
</tr>
<tr>
<td>40,001-60,000</td>
<td>2855</td>
<td>16.1</td>
</tr>
<tr>
<td>60,001-80,000</td>
<td>2207</td>
<td>12.4</td>
</tr>
<tr>
<td>More than $80,000</td>
<td>4073</td>
<td>23.0</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>935</td>
<td>5.3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2239</td>
<td>12.6</td>
</tr>
</tbody>
</table>

Note: The weighting of data can result in rounding discrepancies or totals not adding

3.4.2 Procedure

Potential participants were first sent an introductory letter that informed residents the purpose of the survey and informed them they would be contacted by telephone within the study’s timeframe. If requested the interviews were conducted in languages other than English (Greek, Italian and Vietnamese). To conduct the interviews the Computer Assisted Telephone Interviewing (CATI) system, Ozquest, was used. At least ten callbacks, at different times of the day, were made to each selected telephone number for an interview with an appropriate individual. Professional interviewers conducted the interviews and
were validated with 10% of the interviewers’ work being selected at random for validation by the supervisor.

Harrison Health Research was contracted to collect the data. A pilot test (N= 47) was conducted before the main survey to test the survey contents. Problem gamblers were included in the pilot study. According to the South Australian Department for Families and Communities (2006) the survey was amended slightly based on results from the pilot study.

Telephone calls were made between 9.00 am and 8:30 pm from the survey commencement on the 17th October 2005 and its conclusion on the 23rd December 2005.

3.4.3 Questionnaire design

The questions that were included in the survey were based on questions that had been previously used in the 2001 SA Department of Health (Taylor et al., 2001 cited by South Australian Department for Families and Communities, 2006), Health Monitor Surveys (Population Research and Outcomes Studies Unit cited by South Australian Department for Families and Communities, 2006) and the 2001 Queensland Household Gambling Survey (Queensland Government, 2002 cited by South Australian Department for Families and Communities, 2006).

The nine diagnostic items from the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) were also included. Participants were asked to respond to a series of items relating to gambling impacts and behaviours in the previous 12 months. Each item was scored on a 4-point scale where 0 = never, 1 = sometimes, 2 = most of the time, and 3= almost always. Gamblers were categorised on the basis of their scores into non-problem gamblers (score of 0), low risk gambling (score of between 1 and 2.5), moderate risk gambling (score between 3 and 7.5) and problem gambling score of between 8 and a maximum of 27).

Questions were also designed to examine other areas of gambling research that had been identified as lacking in the current gambling literature (South Australian Department for Families and Communities, 2006). The questions of interest for the current study were those included to examine dissociation or a feeling of a lack of reality during gambling.
Participants who were over 18 years of age and who gambled on any activity other than lotteries or bingo (N= 8670) were asked how frequently they (on a scale from never to very often): 1) lost track of reality while gambling 2) felt as though they were in a trance while gambling 3) felt like they had lost track of time during gambling and 4) had felt like someone else was controlling their actions while they were gambling. Participants who positively responded to these questions were also asked the type of gambling activity that they had experienced these dissociative-like reactions.

3.5 Overview of Results Section

The following results section addresses the stated aims of the current study. Therefore, only the results related to adult South Australians (aged 18 years and older), their gambling participation and gambling classification, and the questions related to dissociation or loss of reality will be reported. For a complete review of results from the Gambling Prevalence in South Australia Survey (2006), please refer to the South Australian Department for Families and Communities (2006) report. SPSS 17.0 was used to perform the analyses.

3.5.1 Gambling participation

The results suggested that the majority of South Australians who participated in the study participated in a range of different gambling activities, although 30.4% (N= 5204) did not gamble. The most popular forms of gambling appeared to be lottery games with over half of the sample reporting playing lotteries (N=8868, 51.7%), and also poker machines (N= 5172, 30.2%) and scratch tickets (N= 4188, 24.4%). Table 3.3 reports the frequency (Ns and % and the associated confidence interval) of participants over 18 years who had gambled on different types of gambling activities during the past 12 months.
Table 3.3

*Number (%) of participants’ gambling frequency across different gambling modalities, aged 18 years or older (N= 17140)*

3.5.2 Classification of gambling groups

Participants were classified as frequent gamblers (N= 2486) if they gambled regularly, at least once a fortnight on any form of gambling (other than lotteries or bingo).

Respondents (over 18 years) that were classified as frequent gamblers had the intensity of their gambling assessed by the CPGI. The CPGI classified participants into non-problem gamblers (score of 0), and low risk (scores between 1 and less than three), moderate risk gamblers (scores between 3 and less than 8) and probable problem gambler (scores between 8 and 27). Total CPGI scores for the current sample ranged from 0 to 25, with a mean of 7.48 (SD = 6.79). Over half of the frequent gamblers (N= 1802, 72.5%) were classified as non-problem gamblers, with only 3.0% of participants being classified as
The frequency of low risk, moderate risk and high risk gamblers was examined across gender. A larger proportion of males were classified as either low risk frequent gamblers or moderate risk gamblers (N= 273, 67.9% and N= 144, 70.0% respectively) than females (N= 129, 32.1%) and N= 63, 30.0% respectively). More female participants (N= 40, 53.3%) were classified as problem gamblers (as compared to males, N= 35, 46.7).

The frequency of responses for the age group categories was also examined across gambling severity. A higher percentage of high-risk gamblers fell in the 18 to 24 years and 35 to 44 years age categories, than the other age categories. However, low risk and moderate risk gambler categories had higher percentages across all age categories. Table 3.5 provides the Ns and % of respondents falling in low, moderate and high risk categories as classified by their age group.
Table 3.5

Age group N (%) of low risk, moderate risk and high-risk gamblers

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>23.1%</td>
<td>35.2%</td>
<td>56.5%</td>
</tr>
<tr>
<td>20-29</td>
<td>31.8%</td>
<td>44.6%</td>
<td>58.9%</td>
</tr>
<tr>
<td>30-39</td>
<td>29.7%</td>
<td>42.2%</td>
<td>56.3%</td>
</tr>
<tr>
<td>40-49</td>
<td>26.2%</td>
<td>40.1%</td>
<td>53.8%</td>
</tr>
<tr>
<td>50-59</td>
<td>23.1%</td>
<td>38.4%</td>
<td>51.7%</td>
</tr>
</tbody>
</table>

NOTE:
This table is included on page 74 of the print copy of the thesis held in the University of Adelaide Library.

Adapted from South Australian Department for Families and Communities (2006)

The frequency of the type of gambling activity played by moderate risk and high risk gamblers was also examined. The results suggested that moderate risk and high risk gamblers reported higher rates of playing poker machines (91.1%, N= 189 and 93.3%, N= 69 respectively), lotteries (77.4%, N= 161 and 64.8%, N= 48 respectively) and scratch tickets (55.1%, N= 114 and 66.7%, N= 50 respectively) than any of the other gambling activities. Table 3.6 provides the Ns and % of moderate risk and high-risk gamblers participation across a range of gambling activities.
Table 3.6

*Frequency of moderate risk and high-risk gamblers’ participation across a range of gambling activities*

<table>
<thead>
<tr>
<th>NOTE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This table is included on page 75 of the print copy of the thesis held in the University of Adelaide Library.</td>
</tr>
</tbody>
</table>

Adapted from South Australian Department for Families and Communities (2006)

### 3.5.3 Dissociative-like experiences while gambling

Participants who gambled on any activity other than lotteries or bingo were asked four questions to examine whether they experienced any dissociative-like experiences while gambling in the past 12 months. No and low risk gamblers were combined into a non-problem gambling group. The majority of participants reported that they had never experienced any of the dissociative-like experiences while gambling. A larger proportion of high risk gamblers reported that they had experienced dissociative-like experiences ‘very often’, as compared to the other categories of gamblers. Table 3.7 provides the frequency of participants’ reports of dissociative-like experiences. Out of each of the types of dissociative-like experiences, participants reported more instances of having lost track of time during gambling.
Table 3.7
*Frequency (N, %) of each dissociative experiences category across different categories of gambling severity*

A number of chi-square analyses were conducted to determine whether the different experiences of dissociation were associated with different categories of gambling severity. There was a significant association between the different categories of losing track of reality and those of gambling severity $\chi^2 (4) = 2650.72, p<.001$. A significant Cramer’s statistic was found $\nu= 0.39, p< .001$ which suggested a medium association between the frequency of losing track of reality and gambling severity.
There was also a significant association between different categories of being in a trance and different categories of gambling severity, $\chi^2 (4) = 2506.97, p<.001$. A significant Cramer's statistic was found $\nu=0.38, p<.001$ which suggested a medium association between the frequency of losing being in a trance and gambling category. The different categories of losing track of time were also significantly associated with gambling severity, $\chi^2 (4) = 1805, p<.001, \nu = 33$ (medium sized effect). The final chi-square analysis found a significant association between the different categories of feeling outside control and different categories of gambling severity, $\chi^2 (4) = 2106.78, p<.001, \nu= 0.35$ (medium sized effect).

Respondents who reported that they sometimes, often or very often experienced one of the dissociative-like experiences were asked which type of gambling activity this usually occurred with (for the period of the past 12 months). Overall, the majority of participants reported that they had a dissociative-like experience during EGM play. The frequency of participants’ dissociative-like experiences for each of the gambling activities is reported in Table 3.8.
Table 3.8

Type of gambling activity where participants most frequently lost track of reality (N= 139), felt in trance (N=160), lost track of time (N= 342) and gambling outside their control (N= 107)

Adapted from South Australian Department for Families and Communities (2006)

3.6 Overall Summary of the Frequency of Dissociative-Like Experiences in the South Australian Community

The overall aim of the current study was to establish if members of the South Australian community experience dissociative-like experiences when they gamble, as has been proposed by Jacobs (1986, 1988). The findings suggest that a large proportion of problem gamblers experience some form of dissociative-like experience when gambling, and this is consistent with research which has found that problem gamblers report higher
frequencies of dissociative-like experiences than non-problem and moderate risk gamblers (e.g., Diskin & Hodgins, 1999, 2001; Jacobs, 1988, 2006; Kuley & Jacobs, 1988; Wynne, 1994 cited by Diskin & Hodgins, 2001). Two of the types of dissociative-like experiences that were examined in the current study did not replicate what is measured by Jacobs (1988) questions, which restricts direct comparison between studies.

There were significant associations between gambling severity categories and the frequency of dissociative-like experiences. Problem gamblers were the most likely group to report frequently experiencing any of the forms of dissociative-like experiences during gambling. Only a small percentage of problem gamblers (as compared to moderate risk and non-problem gamblers) had never experienced any type of dissociative-like experiences during gambling. The dissociative-like experience of losing track of time was the most frequently reported dissociative-like experience across all classifications of gamblers. This finding is similar to work conducted with high frequency videogame players who also report losing track of time when engrossed in playing video games (Wood & Griffiths, 2007; Wood, et al. 2007). Wood et al. (2007) reported that this finding appeared to be because video game play was perceived to be relaxing and allowed them to dissociate from their everyday reality.

The findings from the study also suggest that people are most likely to report having dissociative-like experiences while playing EGMs. In particular, 80% of the participants who reported being in a trance indicated that they had been playing EGMs when this experience occurred, as had 72.7% of participants who reported losing track of reality.

The results from the current study provide support for Jacobs’ (1986, 1988) proposition that problem gamblers experience dissociative-like experiences during gambling. However, the cross sectional design of the study does not provide evidence for dissociation being a causal factor in problem gambling. Future research first needs to establish the phenomenological experiences of regular gamblers to determine if such experiences occur before longitudinal studies are conducted. Findings from the current study suggest that a particular focus on EGM gamblers’ within-session experiences is necessary.
3.7 Chapter Summary

The current study provides evidence that problem gamblers frequently experience dissociative-like experiences during gambling, particularly when gambling on EGMs. These findings are consistent with Jacobs’ (1986) General Theory of Addictions and supports further research.
SECTION B: QUALITATIVE INVESTIGATION OF PROBLEM GAMBLING

Chapter 4

Study 2

Problem Electronic Gaming-Machine Gamblers’ Lived Experience: An Interpretative Phenomenological Analysis

4.1 Structure of Section B

Section B of the thesis summarises the findings of a qualitative study conducted to investigate the phenomenological experience of problem gambling. Due to the substantial volume of the material, the presentation of this study is contained in several chapters. The first chapter of Section B outlines the rationale and methodology employed in the study, the ethical considerations and a description of the analytical process. The three chapters that follow explore the three principal areas of analysis that arose; namely: (a) people’s personal backgrounds and history of gambling, (b) within-session experiences during EGM play and the development of problem gambling, and (c) uncharacteristic experiences or behaviours attributed to problem EGM play.

4.2 A Qualitative Approach to Problem EGM Gambling

Electronic Gaming Machines (EGMs) are a common fixture in Australian hotels and clubs. Given the proliferation of EGM play and the associated negative costs for a sample of the population, research addressing EGM gambling is essential. Unfortunately, research examining the psychology of EGM gambling is relatively limited (Parke & Griffiths, 2002). Parke and Griffiths (2002) claimed a number of variables impede the collection of reliable and valid data in the field of EGM gambling research. More specifically, the authors cited numerous player-specific, researcher-specific and miscellaneous external factors as constraints to EGM play research. It therefore follows that research investigating EGM gambling must be carefully designed and attempt to
address these limitations. Qualitative methodology has been employed in the field of addictions since the 1920s and has provided drug researchers with an important methodological approach (Neale et al., 2005). The aim of qualitative research is to explore the depth in data and to provide “rich, detailed narrative reports of the perceptions, understandings or accounts of participants in relation to the topic in question rather than a statistically significant numerical result” (p. 417). Qualitative research has been at odds with the quantitative or statistically focused approach of ‘traditional’ psychology (Hesse-Biber & Leavy, 2006; Smith, 1996). However, qualitative research may be well placed to circumvent some of the previously cited limitations of psychological research in the field of EGM play. For example, some qualitative approaches acknowledge and embrace the impact the researcher has on the data collection and analytical process.

The topic of problem EGM gambling is arguably well suited to a qualitative approach because the subject matter is complex, novel and under researched. In particular, Smith and Osborn (2003) argue that Interpretative Phenomenological Analysis (IPA), a qualitative approach, is “especially useful when one is concerned with complexity, process or novelty” (p. 53) and indicate that IPA does not make as many assumptions prior to the commencement of research (Johnson, Burrows, & Williams, 2004 cited by Brocki & Wearden, 2006). In fact, Blaszczynski and Nower (2002) have previously argued that it is inappropriate to classify problem gamblers as a homogenous population because of its complexity. Qualitative research may also be highly effective in researching hidden populations and addressing sensitive issues and/or illegal activities, as might be expected when working with problem gamblers (Neale et al., 2005).

The number of gambling-related studies employing qualitative methodology is increasing. However, there is still a lack of qualitative methodology in gambling research, despite the theoretical insights and clinical implications that could be gleaned through such approaches. In an attempt to increase the acceptability of qualitative research, Elliott, Fischer and Rennie (1999) proposed 14 guidelines for researchers who employ qualitative approaches. The first seven guidelines were relevant for both quantitative and qualitative approaches: research should have an explicit scientific context and purpose, should employ appropriate methods, respect participants, specify methods, be discussed appropriately, have clarity of presentation and contribute to knowledge. An additional seven guidelines were specifically related to qualitative research. Elliott et al. (1999) argued that researchers should ‘own’ their perspectives and make clear their theoretical orientations and personal
anticipated. They also stated that respondents should be ‘situated’ or described, and that analysis should be grounded in examples and supported by creditability checks such as audit trails. The three final guidelines prescribed that the research should be ‘coherent’, be aware of accomplishing ‘general’ vs. ‘specific’ research aims and ‘resonate’ or be deemed as an accurate interpretation by readers.

Two qualitative studies in the EGM gambling literature of relevance to the current study will be reviewed here briefly. Doiron and Mazer’s (2001) qualitative study of seven people experiencing gambling problems associated with video lottery terminals (VLTs), investigated different phases of gambling careers. A number of themes were developed from the semi-structured interviews conducted using a Grounded Theory approach. During the ‘pre-involvement’ phase the authors reported that participants’ responses were characterised by unfulfilling and problematic relationships and feelings of loss. Following on from this in relation to the ‘early involvement’ phase of gambling participation, emergent themes reflected respondents’ attempts to fill the ‘void’ and their innocent curiosity towards VLTs. In the ‘deepening involvement’ phase of gambling participation the themes were characterised by the language of relationships, emotional highs and lows, and the escape and competition problem gamblers experienced as a result of their VLT engagement. The final ‘ending’ phase of problem gamblers’ involvement reflected themes describing the complex emotional process of refraining from play and included methods/strategies utilised to cease their involvement.

Wood and Griffiths (2007a) more recently conducted a qualitative study addressing problem gambling. In this study 50 problem gamblers were interviewed to investigate how respondents’ gambling problems developed over time and affected their lives. The main theme to develop (using a structured grounded theory approach) reflected how respondents acknowledged ‘gambling to escape’ through a process of mood modification.

4.3 The Importance of Exploring Problem EGM Players’ Lived Experience

In addition to the above-cited strengths of a qualitative approach, it has recently been suggested that psychological research exploring addictive behaviours such as gambling should address issues of subjective experience (Larkin & Griffiths, 2002). Indeed, Smith (1999) argued the subjective experiences of participants has been neglected
in the psychological literature. The exploration of the subjective experiences of individuals who have experienced gambling problems may provide an important contribution to the understanding of the psychological nature of addiction (Larkin & Griffiths, 2002). However to date, there has been minimal research exploring problem gamblers’ subjective experiences of their gambling involvement and the meanings they construct around this (Wood & Griffiths, 2007a).

The current study explored the lived experience of problem EGM players (as recommended by Larkin and Griffiths (2002). It was hypothesised that valuable insights into the psychology of problem EGM gambling could be discovered by gaining problem gamblers’ self perceptions across significant components of their lives. The study initially examined problem gamblers’ perceptions of their personal backgrounds and how they believed they came to develop gambling problems. This may prove interesting in conceptualising explanations of the development of problem gambling and could indicate whether problem gamblers themselves believe that their personal history plays an important role in the development of their addictive behaviours. This issue is important because a number of theorists have hypothesised that a subgroup of people is vulnerable to developing gambling problems. Jacobs’ (1986) General Theory of Addictions suggests that individuals who experience childhoods that foster a deep sense of inadequacy, or those who have had personal experiences involving family stress in their early years, when combined with a positive introduction to a gambling activity (i.e. an early win), are more vulnerable to developing problems with addictions (if they also have abnormal physiological resting rates). Jacobs’ theory (1986) proposed that addiction to behaviours or substances occurs when people utilise these modalities to regulate their arousal levels in an attempt to escape their current reality. In effect, people become reliant on the behaviour or substance to maintain their desired mood state or arousal level. Such theories suggest that certain experiences may be important aetiological factors for the development of problem gambling (Carlton & Goldstein, 1978; Jacobs, 1986). Similar findings have emerged in other studies that have found gambling to be used as a means of coping with experiences of trauma and abuse (particularly amongst women problem gamblers), or as a method of reducing levels of anxiety and depression (Lesieur & Blume, 1991). These findings are also in accordance with research that has shown that significant life events (e.g., death of a close family member, physical illness and/or career disappointment) may encourage people to gamble, or hasten the rate to which they develop gambling problems (Lesieur & Rosenthal, 1991). Doiron and Mazer (2001) similarly asked their participants (VLT
problem gamblers) about the life experiences they had endured prior to their gambling involvement and found that their personal backgrounds were characterised by relationship difficulties and feelings of loss.

Blaszczynski and Nower’s (2002) Pathways Model of Problem Gambling is based on clinical observations of problem gamblers and an examination of the relevant literature. This model suggests there are three distinct pathways into problem gambling, but also acknowledges common factors that influence all problem gamblers (e.g. issues of accessibility, availability, operant and classical conditioning principles, arousal and cognitive distortions). Due to the current study’s focus on the personal experiences of problem gambling, the second pathway of the model that refers to a group of problem gamblers who are ‘emotionally vulnerable’ to developing problem gambling will be examined (see Chapter two, for an overview of Blaszczynski & Nower’s 2002 model). This group of problem gamblers utilise gambling as a method of modifying their mood states and fulfilling psychological needs (Blaszczynski & Nower, 2002).

Research suggests that problem gamblers are more likely to have a history of traumatic child/adult experiences, psychopathology such as stress, anxiety and depression and to have used gambling as a form of emotion based coping (e.g., Blaszczynski & Nower, 2002; Coman et al., 1997; McCormick, 1994). Thus, problem gamblers’ self-perceptions of their personal histories and their understandings of how they developed gambling problems may enhance our understanding of the phenomena.

A second element of the study was to examine self-reported experiences during EGM gambling sessions. An exploration of the within-session experiences of problem EGM gamblers may assist in identifying the elements that act to maintain gambling and which lead to the development of problem gambling. Apart from the regulating effect of gambling described above, Jacobs’ (1986) argued that people may have dissociative-like experiences during gambling sessions and that these can serve to maintain gambling and contribute to the development of gambling problems. Most studies on dissociation and gambling have employed self-report measures, with the exclusion of Diskin et al. (1999, 2001), and have found that problem gamblers have higher scores than non-problem gamblers on the Dissociative Experiences Scale (DES). Some psychologists have argued gamblers can experience a form of dissociation and mood disturbance in which they no longer feel entirely in control of their actions or in contact with reality. In such states,
people may be more likely to make rash, irrational or impulsive decisions detrimental to their wellbeing. Individuals with gambling problems may undertake actions generally inconsistent with their character and may feel their actions are no longer under voluntary control. Dissociation during sessions may coincide with broader disturbances of emotional regulation and cognition that lead to uncharacteristic patterns of behaviour and decision-making.

Research suggests that some problem gamblers engage in illegal activities to finance their habit (e.g., Blaszczynski, 1994; Blaszczynski & Silove, 1996; Sakurai & Smith, 2003). However, very little is known about how gambling influences the process by which a person gravitates towards offending behaviour. The establishment of a link between broader disruptions to emotional functioning and criminal offences could potentially assist in the explanation of why some individuals commit offences against their better judgement. If this is so, research examining the links between pathological gambling and psychological disturbance may have important implications for understanding the development of criminal offending in gamblers. Moreover, such research may provide an avenue for reducing repeat offending as based upon the identification of ongoing psychological difficulties likely to be the cause of this form of behaviour. To date there is substantial debate surrounding the occurrence of dissociation/dissociative like experiences during gambling. This work provided problem gamblers the opportunity to disclose such experiences if they perceived such phenomenon to occur and/or if there were other within-session experiences previously overlooked in the literature.

The study also investigated problem EGM gamblers’ perceptions of the gambling venues they frequented and if they had relevance to respondents gambling behaviour. Griffiths and Parke’s (2003) analysis of the situational characteristics of gambling activities and venues and the implications for process of deciding to gamble and continue gambling, suggests that problem gamblers’ subjective experience of the venues may provide useful insights into how problem gamblers perceive the venues they attend, and could potentially help inform theory and have clinical implications. For example, one feature of Jacobs’ General Theory of Addiction (1986) was the idea that individuals prone to developing problems were searching for activities/substances which assisted them to feel special and important. Thus, problem EGM gamblers’ perceptions of the environment where they engage in the addictive behaviour may provide useful insights. In addition, Neale et al. (2005) argued that it is “necessary to understand how they [substance users]
perceive and interpret their environment if their behaviour is ever to be interpreted usefully. Qualitative investigations facilitate this by enabling the researcher to understand drinking and drug use from participants’ perspectives” (p. 1586).


4.4.1 An overview of IPA

Interpretative Phenomenological Analysis (IPA) is a relatively new qualitative research method specifically developed in the field of psychology (Shaw, 2001). IPA places individual experience at its central focus and attempts to understand lived experience, in particular, how individuals make sense of their own experience (Smith, 2004). The term IPA is intended to reflect the dualistic nature of the approach that incorporates the insights and reflections from both the participant and the researcher, producing a joint analytical account (Osborn & Smith, 1998; Smith, Flowers, & Osborn, 1997). IPA’s central focus on the subjective experience of the individual makes it well suited for research aiming to explore the lived experience of problem EGM gamblers.

A growing number of published psychological studies report using IPA (for example, Eatough, Smith, & Shaw, 2008; Hunt & Smith, 2004; Osborn & Smith, 1998; Smith, 1999). It has also been employed in a small sample of gambling-related studies (e.g., Parke & Griffiths, 2005). The increasing use of IPA in psychological research has been justified by the clear explanations of its theoretical underpinnings and the detailed procedural guide supplied for researchers (Brocki & Wearden, 2006; Chapman & Smith, 2002). A number of published papers describe the procedural steps for analyses conducted within the IPA framework (e.g., Chapman & Smith, 2002; Smith & Osborn, 2003; Willig, 2001). Whilst clear procedural guidelines have been provided for researchers, care has been taken to emphasise that “Interpretative Phenomenological Analysis is not a methodological straightjacket” (Smith & Dunworth, 2003, p. 606), emphasising that it allows for a certain level of flexibility and variation during the analytical process. IPA should be conceptualised as a tool, which is adaptable to the specific aims of each individual research project. This enables researchers to embrace their own unique interpretative styles when engaging in the analytical process, which is not to the detriment of the final analytical account (Smith & Dunworth, 2003). Larkin, Watts and Clifton
suggest that, instead of conceptualising IPA as a distinct method for qualitative research, it is actually more appropriate to understand IPA as a perspective or stance towards qualitative data analysis.

4.4.2 IPA’s theoretical roots

The theoretical background underpinning IPA is derived from fields such as phenomenology and symbolic interactionism (Bhaksar, 1878 cited by Fade, 2004) and the social cognitive paradigm (Fiske & Taylor, 1991 cited by Fade, 2004). IPA is also related to the “interpretative or hermeneutic tradition” (Palmer, 1969, p. 40 cited by Brocki & Wearden, 2006). Giorgi and Giorgi (2003 cited by Brocki & Wearden, 2006) argued that IPA is essentially phenomenological in its approach due to IPA’s primary interest in the individual experience and subjective as opposed to objective accounts. The argument has also been made that IPA is phenomenological due to its assumption that research is a dynamic process where the researcher attempts to achieve access to “the participant’s personal world” (Smith, Jarman, & Osborn, 1999, p. 218).

Phenomenology’s roots are based in the 18th Century and are associated with European philosophy of the early 1900s. Phenomenology emerged in response to a growing dissatisfaction with positivism (Hesse-Biber & Leavy, 2006). Phenomenology argues there is no one ‘true’ reality and that phenomena are perceived along a number of dimensions e.g., time and space (Hesse-Biber, 2006). Prominent thinkers in the field include German philosopher Edmund Husserl (1913 [in German], translated in 1931 cited by Hesse-Biber & Leavy, 2006), Heidegger (1982 cited by Hesse-Biber & Leavy, 2006) and French phenomenologist Merleau-Ponty (1996 cited by Hesse-Biber & Leavy, 2006). Smith and Dunworth (2003) acknowledge that Husserl is commonly credited as being the key figure in establishing the phenomenological approach to research. Husserl’s Phenomenology “is a return to the lived world, the world of experience, which as he sees it, is the starting point of all science” (Sadala & Adorno, 2001, p.283). Husserl’s approach developed out of his dissatisfaction with positivism; “what Husserl criticised in the positivist sciences, mainly psychology, was their borrowing of the methods of natural sciences and applying them without realising that their objective was different” (Sadala & Adorno, 2001, p. 283). Husserl developed a theory of consciousness and subjective experience, and saw the study of human consciousness as a method of understanding social
reality. In particular, Husserl focused on how individuals think about experience and how consciousness is experienced (Hesse-Biber & Leavy, 2006).

Phenomenological psychology goes beyond being a philosophy as it also acts as a research method that addresses the lived experience of individuals. Researchers utilising this approach have a number of data collection methods at their disposal including observation and in-depth interviewing. Phenomenological psychology is focussed on the “exploration of individual lived experience” (p. 605) and argues against explaining phenomena or seeking causal relationships, the focus instead on the description of phenomena (Sadala & Adorno, 2001).

4.4.3 The IPA method

One of the strong qualities of IPA is its acknowledgement that “access depends on and is complicated by the researcher’s own conceptions… required in order to make sense of that other personal world through a process of interpretative activity” (Smith, Jarman & Osborn, 1999, pp. 218-219). The IPA stance suggests that it is impossible for a researcher to remove their own thoughts and meaning systems from the world, consequently any analysis must account for the relationship between the researcher and the phenomenon under investigation (Larkins, Watts & Clifton, 2006). For example, the extent to which both the researcher and the interviewees hold views about problem gambling that have been shaped via the media, research literature and from current clinical practices.

The method of IPA attempts to explore the processes or self reflections respondents use when interpreting their own experiences (Brocki & Wearden, 2006). The analytical account provided by IPA should go beyond a usual thematic analysis (Brocki & Wearden, 2006). IPA acknowledges “the same phenomenon can be constructed in different ways” and goes beyond collecting objective accounts and accepting them at face value (Churchill, 2006; Johnson, Burrows, & Williams, 2004, p. 364). IPA provides an interpretative account of what a phenomenon means for the participant within their given reality, with the researcher producing the theoretical frameworks that are formed in part by the participants own understanding but also allows that the analytic process may expand upon the researcher’s own understandings (Larkins, Watts & Clifton, 2006).
4.5 Aims of the Current Study

In accordance with the principles of IPA, the current study does not attempt to obtain an objective record of problem gamblers’ experiences but rather aims to focus on the individual’s personal perception or account through a process of interactive activity (Smith, 2005). The current study aimed to examine the subjective experiences of problem gamblers in four key areas: personal background, gambling acquisition and development, within-session behaviours and gambling-related uncharacteristic behaviours and emotions. The current study attempted to explore how individuals made sense of their personal backgrounds and how they believed these experiences contributed to their problem gambling behaviours. A detailed account of people’s gambling history was taken along with participants’ self-perceptions of their within-session behaviours, emotions and cognitions.

The proposed research also aimed to explore what problem gamblers experienced whilst engaged in gambling activities. Jacobs (1988) concluded that gambling produces dissociation as well as relief from dysphoria and that compulsively seeking this state could be an aetiological for problem gambling. This study also aimed to address if individuals believed they engaged in gambling activities as a means of regulating their emotions to cope with traumatic or stressful experiences.

This research had the potential to offer insights into the motivations of problem gamblers, the mental processes that contribute to gambling and how gambling affected decision-making in other areas of life. One practical implication of this work is to gain an understanding of the extent to which gambling can influence people’s mental states for the purpose of legal decision-making. At the present time, there is considerable debate as to the degree to which gambling can lead to genuine disruption to people’s capacity to make rational decisions. If gambling does genuinely lead to an impairment in people’s ability to think logically, or it can be shown to contribute to aberrant mental processes (e.g., dissociation), courts may be more willing to consider pathological gambling as a possible mitigating circumstances in criminal offending related to gambling. In addition, this research may inform other philosophical arguments relating to the extent to which people’s decision to gamble is influenced by the deceptive and insidious nature of certain gambling products (e.g., electronic gaming machines).
The study at each stage of development and analysis aimed to be mindful of IPA principles to allow participants to give voice to areas of importance that may not have been previously conceived by the researcher.

4.6 Overview of Methodology

The method section of this chapter is divided into sections that delineate each aspect of the method employed in the current study i.e., sample, procedure, and analysis. Particular attention has been given to the development and aims of the interview schedule, due to the importance of having an interview outline that adheres to IPA principles. The ethical considerations of the research have also been addressed in recognition of the fact this study delved into clinically sensitive areas of respondents’ lives. Care has been taken when describing the in-depth analysis procedure with the aim of illuminating to the reader the analytical steps taken. As described previously, IPA “is not a methodological straightjacket” (p. 606) so it is essential that all levels of analysis are described openly by researchers (Smith & Dunworth, 2003).

4.6.1 Sample characteristics

Participants were recruited via purposeful sampling methods based on recommendations that studies using IPA methodology should select participants most able to provide rich descriptions of the phenomenon under investigation. (Brocki & Wearden, 2006; Willig, 2001) The inclusion criteria required that participants were adults (18 years or older in order to avoid issues involved with adolescent gambling) and were either currently experiencing problems with gambling, or had experienced gambling problems within the past 5 years as assessed by the Canadian Problem Gambling Index (CPGI). The specified criteria were selected in order to obtain a sample that would be best positioned to recall their subjective experiences related to problem gambling.

Participants were recruited via a number of sources available to the researcher. One participant was recruited from a local clinical treatment program where they had obtained an information sheet explaining the study, and two participants were recruited through their contact with a key worker in the area of problem gambling offenders (who had been briefed on the nature of the study and supplied with information sheets). The remaining participants were recruited via advertisements placed in local papers asking people with
recent or current gambling related problems to participate in an interview about their experiences.

A total of 22 potential participants made contact with the researcher via telephone and their eligibility were screened over the telephone. The nature of the study and the possible sensitive content of the interview were described to all of the potential participants. Participants were informed about the data collection process, their ethical rights during the study and the confidential nature of their responses. Each of the participants was informed they would be reimbursed with a $50 ColesMyer giftcard to cover their time and costs of travelling to the University campus for the interview. Of the 22 people that enquired about the study, 19 respondents agreed to participate and 18 were included in the final analysis (one respondent did not attend the interview). Brockie and Wearden’s (2006) review on studies employing IPA found that studies using the interview method such as the current study had sample sizes ranging from one to thirty. Indeed, Smith and Osborn (2003) indicated the sample size required for optimal results is dependent on a number of factors and emphasised that there is no ‘right’ sample size (p. 54). However, there is some general consensus towards having small sample sizes included in IPA studies (Brocki & Wearden, 2006; Smith, 2004).

Both males and females were included in the research to overcome the methodological flaw of previous studies that have only focused on either males or females exclusively (Anderson & Brown, 1984; Coventry & Constable, 1999). In contrast to previous research attempting to compensate for this flaw, the majority of respondents that made contact with the researcher and were included in the final analysis were female (Moodie & Finnigan, 2005). A total of 3 males and 15 females were included in the final analysis. The mean age of participants was 46 years, with an age range of 22-70 years. Nine of the participants were currently experiencing problem gambling. The remaining nine were not currently gambling but had experienced gambling problems within the past 5 years.

4.6.2 Biographical information of respondents

To preserve the anonymity and confidentiality of respondents, all identifiable information such as names and place names has been changed. Because the current research is interested in both the personal background of participants and the subjective
experience of problem gambling, a short paragraph has been provided on each respondent’s personal gambling and non-gambling related background. The provision of brief biographies for each respondent endeavours to assist the reader in conceptualising each individual and the personal experiences they brought to the study. Table 5.1 displays the pseudonym of each participant, their current gambling status, and the length of their gambling problems. The preferred gambling activity for all of the participants was EGMs.
Mary (f1) is a fifty-year-old female born overseas where she was raised on a farm and experienced severe poverty. Mary has eight brothers and sisters with whom she no longer has contact, and she lost her mother when she was a child. Her father was an absent figure who experienced significant gambling and alcohol related problems before his death. Mary migrated to Australia when she was 16, with her then husband who went on to commit suicide. Mary is currently on home duties. She was introduced to gambling when she was 31 years old. She is currently experiencing gambling problems with EGMs.

### Table 5.1

*Pseudonym (Study ID), age and problem gambling status of participants at the time of the interview*

<table>
<thead>
<tr>
<th>Pseudonym and Study ID</th>
<th>Gender (M/F)</th>
<th>Age (Years)</th>
<th>Gambling Status at Interview (Current/Recent Past)</th>
<th>CPGI Score</th>
<th>Length of Gambling Problems (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary (f1)</td>
<td>F</td>
<td>51</td>
<td>Current</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>John (m1)</td>
<td>M</td>
<td>70</td>
<td>Current</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Rebecca (f2)</td>
<td>F</td>
<td>39</td>
<td>Recent Past</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>Jason (m2)</td>
<td>M</td>
<td>60</td>
<td>Recent Past</td>
<td>18</td>
<td>2.5</td>
</tr>
<tr>
<td>Megan (f3)</td>
<td>F</td>
<td>22</td>
<td>Recent Past</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Mark (m3)</td>
<td>M</td>
<td>46</td>
<td>Current</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Danielle (f4)</td>
<td>F</td>
<td>52</td>
<td>Recent Past</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Vanessa (f5)</td>
<td>F</td>
<td>46</td>
<td>Current</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Caroline (f6)</td>
<td>F</td>
<td>41</td>
<td>Recent Past</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>Samantha (f7)</td>
<td>F</td>
<td>30</td>
<td>Current</td>
<td>8</td>
<td>0.5</td>
</tr>
<tr>
<td>Denise (f8)</td>
<td>F</td>
<td>49</td>
<td>Recent Past</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Joanne (f9)</td>
<td>F</td>
<td>51</td>
<td>Recent Past</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Stacey (f10)</td>
<td>F</td>
<td>43</td>
<td>Current</td>
<td>16</td>
<td>2.5</td>
</tr>
<tr>
<td>Stephanie (f11)</td>
<td>F</td>
<td>31</td>
<td>Current</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Brooke (f12)</td>
<td>F</td>
<td>59</td>
<td>Recent Past</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Christine (f13)</td>
<td>F</td>
<td>32</td>
<td>Recent Past</td>
<td>21</td>
<td>1.5</td>
</tr>
<tr>
<td>Julie (f14)</td>
<td>F</td>
<td>61</td>
<td>Current</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Jenny (f15)</td>
<td>F</td>
<td>38</td>
<td>Current</td>
<td>21</td>
<td>10</td>
</tr>
</tbody>
</table>
generally spending $300-$400 during an average session and usually spends the entire day gambling. Mary obtained a score of 10 on the CPGI. Mary has a strong accent of her birth country that at times made communication difficult.

Rebecca (f2) is a 39 year old female raised in a close family unit. Rebecca experienced a traumatic domestic violence relationship in the past and is currently living with another partner. Rebecca is a full time student with an online (remote access) University. Rebecca experienced significant gambling problems with EGMs for four years and she defrauded her workplace over two years to fund her gambling. She also drank alcohol heavily while playing the machines. At the peak of Rebecca’s gambling related problems she was gambling every day and would spend an average of $500 in a two and a half hour period. Rebecca attempted suicide when her theft was discovered. The court process lasted for two years and Rebecca was imprisoned for eight months. Rebecca scored 22 on the CPGI for the period in which she was experiencing gambling problems. Rebecca was recruited via a key worker in the field because of her involvement with the criminal justice system.

Megan (f3) is a 22 year old female and is engaged to be married. She is currently on home duties raising her young daughter. Megan experienced gambling problems with EGMs over a twelve month period within the past year and a half. When Megan’s gambling was at its worst she played daily. She now abstains from gambling. When Megan was gambling she would spend between $20 and $500 depending on the amount of money she had access to. Her gambling sessions would last for between two and five hours. Megan’s parents separated when she was young and she experienced psychological problems during her childhood. She also experienced postnatal depression after the birth of her daughter. Megan scored 12 on the CPGI.

Danielle (f4) is a 52 year old single female and is currently employed full time in a customer service position. Danielle grew up in a close family unit, but her father died when she was a child. Her mother died more recently in the past few years. Danielle has a history of depression and other behavioural addictions. Danielle experienced significant problems with EGM gambling over a six year period, but she has stopped gambling during the past year. When Danielle was gambling, she would spend an average of $300 a session, and play three times a week. She scored 23 on the CPGI.
Vanessa (f5) is a 46 year old, single, unemployed female. Vanessa was exposed to her parents dealing with addictions during her childhood and she experienced childhood physical and sexual abuse. Vanessa has experienced significant adult mental health issues such as depression and attempted suicide. She has had problems with EGMs for the past six years and has had contact with the legal system due to the illegal activities she engaged in to finance her gambling addiction. Vanessa admits to drinking excessively when playing EGMs and spends on average $1000 during a daylong session. She obtained a score of 18 on the CPGI.

Caroline (f6) is a 41 year old female who is studying for a University degree and works part time in hospitality. Caroline experienced an abusive marriage and has a teenage daughter with her ex-husband. Caroline’s father sexually abused her as a child, and a prominent community member sexually abused her when she was aged 10 to 12 years. Caroline is not currently experiencing gambling problems but during the past five years she has been addicted to a number of gambling activities and also sex and alcohol. Caroline illegally funded her gambling and has twice been caught by the authorities. In the first instance she was given a suspended sentence. However, after she again committed illegal activities she was given a sentence of 18 months, 11 of which she spent in prison and 7 on home detention. Caroline scored 27 on the CPGI and reported spending approximately $300 a day on gambling activities. Caroline was recruited via a key worker in the field due to her involvement with problem gamblers who have had contact with the criminal justice system.

Samantha (f7) is 30 years of age, single and currently employed full time in a customer service role. During her childhood she was exposed to the alcohol addiction of her parents and was physically abused. Her parents separated after she was abused and her sister (who had bipolar) died from a drug overdose. Samantha had an alcoholic boyfriend and has been diagnosed with Obsessive Compulsive Disorder. She has experienced problems with EGMs for the past six months and scored 8 on the CPGI.

Denise (f8) is a 49 year old female who grew up in a family of seven siblings. Her family home environment was abusive and she experienced childhood physical and sexual abuse. Denise recently separated from her husband and she has a teenage daughter. Denise is casually employed and has a history of mental illness. During an average gambling session she would spend between $70- $100, staying until all her money had been
gambled. Denise experienced problems gambling for five years but has recently stopped. She scored 20 on the CPGI.

Joanne (f9) is a 51 year old female who was born in Wales and moved here when she was aged seven years. Joanne had a close family unit as a child. Joanne is currently on home duties, caring for her two young children. Joanne experienced childhood psychological issues when her grandmother died. When her gambling problems with EGMs were at their peak during a three-year period, Joanne would gamble every day. For the past six months Joanne has abstained from gambling. Joanne scored 26 on the CPGI.

Stacey (f10) is a 43 year old female born in the United Kingdom; she migrated when she was a young child. She reports experiencing sexual abuse as a child. Stacey’s first marriage involved domestic violence and she had a son. Her second husband was also abusive and had a personality disorder and committed suicide. Stacey has been retained in mental health facilities in the past and has been diagnosed with a number of psychiatric disorders: major depression, borderline personality disorder, PTSD, bipolar and OCD. Stacey currently volunteers her time to charities and has experienced problems with her EGM gambling for the past two and a half years. She scored 16 on the CPGI.

Stephanie (f11) is a 31 year old single female and is employed part time in a customer service role. Stephanie was raised in a foster family and had a son when she was 16 and a daughter when she was 21, they were both been placed in foster care. The fathers of both her children physically abused Stephanie. Stephanie is currently gambling at least three times a week and spends an average of $120 per session. She scored 22 on the CPGI.

Brooke (f12) is a married 59 year old female who is self employed as a cleaner. Brooke is a recovering alcoholic and experienced gambling problems for around four years. Brooke gambled at least six days a week when her gambling was at its worst on a number of different modalities: EGMs, races, scratchie tickets, lottery tickets, keno, casino table games and bingo. She scored 18 on the CPGI.

Christine (f13) is a 32 year old unemployed female, currently in a relationship. Christine grew up in an environment where both of her parents had mental health problems and she was sexually abused as a child. Christine has also previously been in a traumatic adult relationship. Christine gambled on EGMs for eight years, with the peak of her
gambling problems for around a year and a half towards the end of this period. Christine stopped gambling six months ago. At its peak when she was gambling every day, she was on average spending $1000. Christine scored 21 on CPGI.

Julie (f14) is a 61 year old, unemployed female who has never been married. Julie has an adult son with whom she has lost contact. Julie originally comes from Scotland, where her family lived with significant levels of poverty and her father had gambling problems. Julie reports not having a set pattern of gambling participation, and is currently experiencing problems with EGMs. Julie gambles every fortnight when she receives her welfare benefits. Julie scored 13 on the CPGI. Julie was recruited from a gambling treatment service where she is receiving treatment.

Jenny (f15) is a 38 year old female and is currently living with a partner. Jenny’s first two serious relationships involved significant levels of domestic violence over a 10 year period. Jenny was an alcoholic, which she now no longer has problems with. She is currently studying a hospitality course through TAFE. Jenny has experienced problems with EGMs for more than ten years and gambles once a fortnight when she receives her welfare benefits. Jenny scored 21 on the CPGI.

John (m1) is a 70 year old divorced male with a history of mental illness including PTSD and major depression. John’s mother died when he was a young boy and a number of close family members have died within recent years, including his son. John is on a disability pension. John has gambled since he was 17 and is a social drinker. John started to gamble heavily on EGMs during the past five to six years and frequently plays on EGMs. He also bets on horses and plays keno. John generally spends his entire pension on gambling after his rent has been paid. John scored 10 on the CPGI.

Jason (m2) is a 60 year old married male born in New Zealand. Jason is employed as a manager in customer service and has three daughters. Jason’s mother had significant gambling problems during his childhood. Jason has a history of psychological problems (depression) and has attempted suicide. Jason had a gambling problem for two and a half years and stopped approximately two years ago. During the period Jason was experiencing problems he played EGMs in addition to gambling on horse races at the TAB. Jason went to gambling venues every day and gambled all of the money he received from the sale of his business. Jason scored 18 on the CPGI.
Mark (m3) is a 46 year old Indigenous Australian with 10 brothers and four sisters. During Mark’s childhood, his parents were violent towards each other and Mark was sexually and physically abused. During his childhood Mark had significant mental health issues and repeatedly attempted suicide. Mark has four sons. Mark is currently living with a new partner after his previous relationship with a problem gambler broke down. He has previously been diagnosed with major depression and alcohol dependence. At present Mark gambles once a fortnight when he receives his welfare benefits and he is experiencing problems with EGMs. Mark has been gambling for the past 13 years, experiencing significant problems for the past five and having been homeless as a result of his involvement. Mark scored 22 on the CPGI.

4.6.3 Procedure

Data were collected using semi-structured interviews and was aimed at producing detailed accounts in relation to the previously discussed areas (see section 5.4 Aims of the Current Study). The method of data collection was explained thoroughly to participants when they first made contact with the researcher since this method is reliant on open communication about potentially sensitive information disclosed by participants.

Each participant was initially asked a series of demographic and gambling participation questions, and administered the CPGI, by telephone to ascertain their suitability for the study. A mutually convenient time and meeting place known to both the researcher and participant was arranged. The researcher met each participant prior to the interview and started to develop rapport with the participant whilst walking to the University where the interview was to take place. Interviews took place in a counselling room in the School of Psychology, with two comfortable chairs placed adjacent to each other and a small table where a digital recorder was positioned.

Participants were again briefed at the start of the interview to place the interview in context by informing the interviewee about the purpose of the interview, the use of the digital recorder, and the fact they could withdraw at any time. They were given an opportunity to ask any questions (Kvale, 1996). Interviews were recorded by a digital recorder with the permission of the participant and were subsequently transcribed verbatim by the researcher. The use of the digital recorder allowed the uninterrupted interaction
between the researcher and the interviewee (Smith, 1995). Since IPA is focused on the meanings within the text the aim of the transcription was to reproduce verbatim everything the respondent and researcher said during the interview. In addition, significant non-verbal events such as laughter, crying and long pauses were noted in the transcripts (Smith & Dunworth, 2003). To enhance the reliability of the analysis, brief notes were also taken during the interview; effort was made to not allow this to detract from the interview process (Hesse-Biber & Leavy, 2006; Willig, 2001). The researcher also maintained awareness of the language used by each respondent and attempted to communicate in a way the participants were comfortable with (Smith & Dunworth, 2006). All of the interviewees’ responses to the structured questions were recorded on a record sheet by the interviewer. The interviews ranged between 50 to 120 minutes, with most lasting 90 minutes or more.

At the conclusion of the interview a brief verbal summary of the prominent areas identified during the course of the interview was discussed informally, allowing the participant and researcher the opportunity to clarify any points, provide any additional information and conclude the interview process. Participants were debriefed to minimize any negative effects the discussion may have had (Kazdin, 1980; Kvale, 1996). Information regarding services providing help and treatment for gambling-related problems was provided to all participants on the information (i.e. telephone numbers of various telephone help-lines such as Gamblers Anonymous) (Appendix A). Participants were given a $50 ColesMyer gift voucher at the completion of the interview to compensate for their time, effort and transport costs to the University of Adelaide North Terrace campus.

Weiss (1994 cited by Hesse-Biber & Leavy, 2006) recommends that pilot interviews are conducted to provide the opportunity to test the effectiveness of the interview schedule e.g. the schedule is clear and reliable, covers pre-identified areas of research interest and identifies if any areas are missing. A pilot study was conducted employing the above procedure and the interview schedule (described below) with two participants (Mark and Jenny). The transcripts from these pilot interviews were analysed using IPA and have been included in the final analysis. The pilot study aimed to determine if the interview schedule was appropriate to IPA principles. The first 10 interviews influenced how the researcher conducted subsequent interviews because of recognition of
common experiences reported by respondents. The researcher attempted to explore these common experiences in greater depth.

4.6.4 General interview schedule design

The researcher was reluctant to develop a fixed interview schedule because of issues of reflexivity, as the aim of the study was to allow respondents to discuss matters they felt were important. In response to this concern, at each stage of developing the general interview schedule, the researcher was mindful of the potential effects past research could have in influencing the wording and direction of the interview schedule. The interview schedule (see Appendix B) was developed to provide a basis for the semi-structured interview in accordance with the ideals of IPA, thereby allowing the direction of the interview to be guided by the participant. By designing the interview schedule in this manner, the interviewee was able to explore issues the researcher had not anticipated (Hunt & Smith, 2004). The interview schedule used a small number of open-ended questions as recommended by Willig (2001) and aimed to assist the participants’ ability to communicate their own experience using their own explanatory framework (Smith et al., 1997). Care was taken to maintain an interview process in line with IPA ideals, acknowledging the interview is a collaborative process whilst placing the participant as the primary expert (Alexander & Clare, 2004).

The interview schedule was designed to address a set of preconceived areas of interest: their own perception of their personal backgrounds, how they perceived themselves to have acquired their excessive gambling behaviours, the manner in which their gambling participation developed over time, within-session behaviours, and any uncharacteristic experiences, and the meanings they attached to these experiences. The areas of interest were developed in an attempt to gain a thorough understanding of what problem gambling had meant to the participants and their own subjective experience of the disorder taking into account their personal history and anything that had been out of character for them. Colleagues utilising the IPA method were shown the interview guide and were engaged in discussion about the appropriateness of the schedule in the IPA framework. No obvious conflicts of interest were identified during this process.

Minimal prompts and probing questions about feelings and perceptions were used to facilitate the interview and encourage the participants to talk (Keats, 2000; Kvale, 1996).
The interview questions were initially broad in nature and then narrowed into those of a more focused nature in an attempt to help participants feel more comfortable talking about more sensitive experiences (Keats, 2000; Kvale, 1996). At each stage of the interview the researcher was guided by what the participant was saying and asked questions in response to what the participant had said earlier in the interview.

4.6.5 Ethical considerations

The potentially sensitive nature of the areas to be addressed during the interviews made it imperative the ethical considerations of the project were outlined. The nature of the researcher’s Combined Master of Psychology (Clinical) and Doctor of Philosophy degree exposed the researcher to clinical practices and professional responsibilities and this assisted in the interview process. The Human Research Ethics Committee (University of Adelaide) granted ethical approval for the project and regular contact was made with the researcher’s supervisory panel.

The issue of informed consent was addressed by providing participants with an information sheet describing the overall purpose of the study, what was required of them and any potential risks or benefits associated with participating in the study. It was made clear to the respondents that participation was voluntary and they could withdraw from the study at any time (Kvale, 1996). Participants were required to sign a written consent form outlining they understood this and gave their informed consent to partake in the study.

The confidentiality and anonymity of participants was preserved by not reporting any private identifying data and by changing their names and any other identifying features. These non-significant changes were made so the case was non-recognisable without impacting upon the main form and content of the data. Data was stored in a secure facility and was only available to the researchers and participants if they requested a copy. Participants were informed they could obtain a copy of their own transcript and any of the written reports produced as a result of the study if they so desired. They were able to remove their content from the study, or remove any information they regarded as unsuitable for recording. None of the respondents requested a copy of their transcript, or indicated that they wished for their material to be withdrawn from the study.
The nature of some of the experiences participants chose to disclose had the potential to cause them some psychological distress. There was a continual and strong emphasis placed on building rapport with the interviewee before broaching more sensitive issues, particularly when they were describing their personal backgrounds (i.e. moving from broad questions to more sensitive topics). Participants were given the opportunity to stop the interview when they became visibly upset; no participant withdrew from the study. The researcher conducted a risk-assessment for one participant who appeared to be psychologically distressed by her involvement with gambling; this was related to her fear of being unable to cease gambling rather than to her participation in the study. Follow up of the client was also conducted. Information regarding services providing help and treatment for gambling-related problems were given to all participants (i.e. telephone numbers of various telephone help lines such as Gamblers Anonymous). At the conclusion of the interview participants were debriefed to minimize any negative effects the discussion may have had (Kazdin, 1980; Kvale, 1996).

4.6.6 Data analysis

The interview was subjected to Interpretative Phenomenological Analysis (IPA). Data analysis was conducted with the main aim of reflecting the interviews (Willig, 2001).

The principal focus of data analysis within the domain of IPA was to allow the participant to make sense of their own experience, with the researcher then attempting to make interpretations of what was represented in the transcript. Analysis requires an interaction between the researcher and the transcript with the goal of attempting to understand the transcript whilst using their own interpretation (Hesse-Biber & Leavy, 2006). Although there has been some criticism of this approach (these are discussed in Chapter 10), IPA always acknowledges that a ‘co-construction’ of the phenomenon is developed from both the respondents’ interpretations and the researcher’s. For the sake of transparency it has been recommended that researchers disclose their own background when utilising such approaches (Brocki & Wearden, 2006). The researcher for the current study is a final year Combined Master of Psychology (Clinical) and PhD candidate. This course provides a qualification that allows registration as a psychologist and also a full-sized PhD in clinical psychology. The clinical training provided by the Masters program, more specifically the counselling skills training and instruction on clinical disorders and their treatment, assisted the researcher during the interviews and would also have
influenced the development of themes. More specifically, her prior training assisted her to establish rapport with respondents and in her interpretation of the clinically relevant material. The researcher was a novice to the area of gambling research, and had no previous significant gambling involvement. The researcher’s knowledge of gambling prior to the interviews involved her completing a literature review that was significantly informed by Jacobs’ (1986) General Theory of Addictions and a multi-faceted conceptualisation of problem gambling. The researcher at all times was open to respondents’ own understandings regarding gambling.

In Brocki and Wearden’s (2006) review of studies using IPA, they indicated that each researcher performed the analysis in their own unique manner to reflect the data they were analysing. Smith et al. (1999) argued it is not appropriate to provide a prescriptive methodology. Due to these cautions, the current analysis has been guided by the data whilst maintaining the integrity of IPA.

Each of the interviews was initially transcribed and reread to assure the accuracy of the transcription. A process of familiarisation with the data was then engaged in, with the researcher rereading the transcripts in an attempt to gain some insight into the essence of what the participant described. Brocki and Wearden (2006) acknowledge “different researchers use the initial familiarisation stage in different ways” (p. 97). During the current study’s familiarisation phase the transcripts were read a number of times and any seemingly important initial thoughts and comments placed in the left hand-margin of the transcript. Also performed during this stage was the development of preliminary summaries, with any preliminary emerging themes listed in the right hand margin (Stage 1; first order coding) (Smith & Dunworth, 2003).

Once an initial list of main themes was identified, they were given key descriptive labels, and condensed through a process of placing them into relevant clusters. Clusters were found by looking for connections and similarities of the first level of themes. These clusters were then defined using a descriptive superordinate theme label that described the conceptual nature of the cluster. Smith and Osborn (2003) describe this process by instructing one to imagine “a magnet with some of the themes pulling others in and helping to make sense of them” (p. 71). A master list of the superordinate clustered themes and their related subordinate themes was developed (Larkin & Griffiths, 2004; Willig, 2001). The themes were not only selected on the basis of their prevalence across the transcripts
but also in accordance to their explanatory nature (Brocki Wearden, 2006) (Stage 2; second order coding).

Each of the first ten interviews was treated in the same manner as described above. The first ten transcripts were then integrated by reading the master lists together and producing a consolidated list of themes for the group as a whole (Smith, 1995). This process allowed new themes to be found (Hunt & Smith, 2004). An idiographic perspective was taken when analysing the transcripts as a whole. Smith (1997) described how “from an idiographic perspective, it is important to find levels of analysis which enable us to see patterns across case studies while still recognising the particularities of the individual lives from which those patterns emerge” (p. 424). Any nonconforming/negative cases were examined closely during the process of data analysis to help refine theme classification (Silverman, 2005). The final eight transcripts were then analysed by referring to the master list of themes developed from the first ten transcripts. The final eight interviews were then reread to establish if there were any other emergent themes not accounted for by the initial ten interviews. No additional themes were found.

A master list for the entire group as a whole was then constructed. Following the example of Smith and Dunworth (2003) when they had a large number of superordinate themes in their study (as in the current analysis), the process of looking for connections and groupings amongst the master list was repeated. The final list of master themes for the group as a whole was then developed through this process. A final rereading of the original transcripts was also conducted to ensure the interpretations were grounded in the transcripts (Collins & Nicolson, 2002). A matrix was produced that gave illustrative verbatim extracts for each theme for the group as a whole. Verbatim extracts of the data are essential in the IPA approach, as they retain the voice and essence of the participant’s experience, in addition to providing the reader the opportunity to assess the interpretations reached by the researcher (Newton, Larkin, & Wykes, 2007).

Larkin, Watts and Clifton (2006) suggested that, IPA aims to understand and describe the participants’ world and then develop an interpretative analysis that places the initial description into a framework that allows for social, cultural and theoretical implications. The authors also allowed for the placement of themes in a theoretical context, as will be followed in this analysis (e.g., Jacobs’ General Theory of Addictions 1986).
A colleague with experience using qualitative methodology conducted an independent audit to establish whether the analysis was grounded in the data and was internally coherent (Osborn & Smith, 1998). The audit focused on the analytical process and the final analytical model. Discussion was engaged in with the auditor, who was ultimately satisfied that the analysis represented the data derived from the transcripts and followed IPA principles. The aim of the audit was not to determine if the current analysis was a singular true account because IPA is subjective and it is unlikely two analysts working with the same data would produce the exact same analyses. Rather the audit was aimed at ensuring the credibility of the final account (Osborn & Smith, 1998).

4.6.7 Themes to emerge from the study

The analysis has been separated into three distinct areas of focus derived from the interviews. Although the study initially focused on four areas of research, the thematic analysis suggested that EGM players’ subjective experiences of the development and acquisition of problem gambling could be discussed together with the within-session experiences, thereby reducing the principal areas to three. Participants spoke about these research areas in a way that complemented each other. Within-session experiences were discussed to the extent that they contributed to the development and acquisition of problem gambling. The three final sections were as follows:

Section 1: Participants’ subjective understanding of the life experiences that shaped them into the person they were when they first started developing gambling problems.
Section 2: Players’ subjective experience of the development of problematic gambling behaviours and within-session experiences (behaviours, emotions and cognitions).
Section 3: Participants’ perceptions of how problematic gambling involvement contributed to the development of antisocial and uncharacteristic behaviours.

Each of the superordinate themes to emerge from the analysis was comprised of component subordinate themes. For each section of analysis the resultant superordinate and subordinate themes are described in depth. An analysis of the emergent themes in light of the current psychological literature was also considered in each discussion session. The results section aimed to provide a detailed account of hierarchical structure of the themes derived from the transcripts. Table 5.2 depicts the hierarchical structure of the themes
according to each section of the analysis. Due to the substantial volume of the research findings, the results of each section of the study are reported (and briefly discussed) in its own chapter, followed by the main discussion in chapter 10.
<table>
<thead>
<tr>
<th>Section Heading</th>
<th>Superordinate Themes</th>
<th>Component Subordinate Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1) Problem EGM Players Subjective Understanding of the Life Experiences that Shaped Them</strong></td>
<td>Negative Life Experiences</td>
<td>Negative Home Environment During Childhood</td>
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<td></td>
<td></td>
<td>Traumatic Relationships During Childhood</td>
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<td></td>
<td></td>
<td>Stressors/Traumatic Events During Adulthood</td>
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<td></td>
<td></td>
<td>Traumatic Adult and Family Relationships</td>
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<td></td>
<td>Psychological Problems</td>
<td>Developmental Needs During Childhood Unfulfilled</td>
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<td></td>
<td>Mental Health Problems During Childhood</td>
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<td></td>
<td></td>
<td>Negative Psychological States and Mental Health Issues During Adulthood</td>
</tr>
<tr>
<td><strong>2) Problem EGM Players Subjective Experience of the Development of Problem Gambling Behaviours and Within Session Experiences (Behaviours, Emotions and Cognitions) During EGM Play</strong></td>
<td>Early Positive Gambling Experience</td>
<td>Early Introduction to Gambling by Family</td>
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<td>Early Introduction to EGM by Family Member or Close Friend</td>
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<td>Early Big Win</td>
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<td>Early Observation of Big Win</td>
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<td>EGM Play Fulfils Individual Needs</td>
<td>Attractive Playing Environment</td>
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<td>Attractive Features of Machine</td>
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<td>Allows Means to Escape Life</td>
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<td>Produces Arousal</td>
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<td>Relieves Boredom and Provides a Social Atmosphere</td>
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Table 5.2

Hierarchical structure of analysis according to analysis section continued

<table>
<thead>
<tr>
<th>Section Heading</th>
<th>Superordinate Themes</th>
<th>Component Subordinate Themes</th>
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<tbody>
<tr>
<td>2) Problem EGM Players Subjective Experience of the Development of Problem Gambling Behaviours and Within Session Experiences Continued</td>
<td>Downward Spiral</td>
<td>Chasing Behaviours</td>
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<td>Big Win</td>
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<td>Addictive Thinking/Irrational Beliefs</td>
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<td>Control</td>
<td>Early Control Over EGM Gambling</td>
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<td>Loss of Control over EGM Gambling</td>
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<td>No Control Over Life Outside Gambling</td>
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<tr>
<td>3) Self-Perceptions of How Problem EGM Gambling Impacted Lives and Contributed to the Development of Antisocial and Uncharacteristic Experiences</td>
<td>Negative Psychological Impact</td>
<td>View of Self</td>
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<td>Erratic Moods Dependent on Win/Loss</td>
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<td>Self-Harming Behaviours and Other Mental Health Issues</td>
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<td>All Consuming and ‘Insidious’ Nature of Problem Gambling</td>
<td>Unsociable</td>
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<td>Uncharacteristic Acts to Finance Gambling</td>
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<td>Debt</td>
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<td>Sense of Entitlement</td>
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<td>Sacrificed Relationships</td>
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<td>Relationship with Machine</td>
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<td>Hidden EGM Involvement</td>
<td>Manipulation and Lies</td>
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<td></td>
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<td>Social Taboo</td>
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Chapter 5

Study 2

Problem Electronic Gaming-Machine Gamblers’ Lived Experience: An Interpretative Phenomenological Analysis

5.1 Overview of Chapter 5

The current chapter reports Part (1) of the qualitative analysis of Study 2, which relates to that component of the interviews dealing with the personal histories of respondents. The aim was to gain insights into participants’ personal backgrounds and how these were seen to have contributed to their problems with gambling. This chapter presents the superordinate and subordinate themes that emerged from an analysis of transcripts, and examines the extent to which the views expressed reflect current developments within the gambling research literature relating to this area.

5.2 Problem EGM Players’ Subjective Understandings of the Life Experiences that Shaped Them.

Participants were initially asked to explore their personal history prior to the development of their problem gambling; in particular, to focus on the experiences they felt had shaped them into the people they were when their gambling problems first began to emerge. From analysis of the transcripts, it was possible to show how respondents discussed their personal development in terms of two superordinate themes. Interestingly, these themes emerged for both those people who had only recently experienced problems with gambling and those who described themselves as former problem gamblers. It was clear that former problem gamblers were better able to articulate their understanding of their experiences, perhaps due to the passage of time, or because they were more likely to have undertaken some form of gambling-related treatment or counselling. These additional experiences may have allowed them to contemplate their behaviour and find reasons to explain or justify it.
The first superordinant theme to emerge from the transcripts was labeled ‘negative life experiences’ and referred to a variety of significant negative or traumatic experiences that had significant influence of respondents’ lives. The second superordinate theme, ‘psychological problems’, was related to their experiences of psychological problems that had influenced their personal development prior to their problem gambling. These two themes were, in a sense, linked in that the former experiences were seen to have contributed to the subsequent psychological problems and ultimately the person’s involvement in gambling.

5.3 Superordinate Theme: Negative Life Experiences

The first superordinate theme to emerge from participants’ accounts of their personal history reflected their recall of traumatic physical and psychological experiences that occurred either during their childhood, or later in life. Participants acknowledged that these negative experiences had shaped their character prior to the onset of their gambling problems.

5.3.1 Negative home environment during childhood

From the transcripts it was evident that the overwhelming majority of participants felt that they had grown up in ‘negative’ home environments, which had influenced how they had developed as adults. Such negative experiences included issues such as instability within the family, domestic violence, childhood physical/emotional/sexual abuse and/or parental substance abuse.

A central component of this theme was how a lack of stability within the respondents’ childhood family units had caused them psychological distress and feelings of uncertainty. Respondents as children were aware of difficulties in their parents’ relationships, and they perceived this to have contributed to personal problems they developed later in life.

For example, Christine in Extract 1 below described how her parents divorced after an unsteady relationship throughout her childhood and adolescence. She recalled how, as a
child, this was such a central feature of her life that she was compelled to share it with her class, due to her uncertainty regarding her father’s continued visits.

“Christine: My father and mother divorced when I was thirteen. And my father remarried shortly after… Um actually no it wasn’t eight, it was five when they first separated. I gave a morning talk about my parents breaking up. So I was quite. Although I it must have been upsetting for me. I. I do remember missing my father and looking forward to his visits on the weekend. Um, and I do remember um, waiting for my father and he’d often be late.” Extract 1, Christine.

Megan also recalled how her parent’s relationship problems became a central feature of her childhood and caused instability within her home. She described how she felt rejected by a key parental figure and how this loss had contributed to the development of adolescent problems.

“Megan: When I was 6 my parents got divorced and umm my Dad remarried he’s secretary. (laughter). And then my mum got remarried as well. Umm I was a pretty nasty teenager umm because we had to move and I didn’t like that… And then when I was 16 and I ended up getting kicked out of home and so I went and lived with my Dad.” Extract 2, Megan.

The theme of negative childhood home environment, in particular, the instability within the family unit and the relationship between the respondents’ parents, coincided with recollections of domestic violence. As illustrated by Caroline in Extract 3, respondents described feelings of powerlessness and rejection and often had a sense of living in constant fear.

“Caroline: I would probably have to say the beatings that my mum would get from my dad. Um yeah they were pretty horrendous I still remember back then as a kid getting five cents and screaming “stop, stop it or else I’ll call the police”. Um and then he’d come and he never hit me. Never ever did he lay a hand on me. Um probably he thought that he couldn’t because I wasn’t his, his natural child. So I um, but the way he screamed at me that pretty terrifying.” Extract 3, Caroline.
Childhood abuse was also a common feature of these destructive home environments, as recalled by Mark:

“Mark: Well I had a really bad childhood. I was umm sexually abused… And ah I used to get bashed a lot... He [father] used to beat us all [Mark and his siblings].” Extract 4, Mark.

Mark, like most of the respondents, perceived his childhood home environment negatively because of multiple instances of physical and sexual abuse. Some respondents appeared to rationalise these experiences in an attempt to understand them. For example, as illustrated in the extract from Samantha below (Extract 5), the violence perpetrated by her mother was almost excused when she attributed it to the physical abuse her mother had received from her husband.

“Samantha: Us children yeah [mother physically abused] but she’d had violence in the fact my father actually hit her and she walked out on him when us kids were fairly young. So you can’t really blame her in a way, it’s not good though.” Extract 5, Samantha.

This pattern was also illustrated in Extract 6, which showed how abuse was attributed to personal flaws and illustrated how the blame was internalised by the respondent. An example of this was Caroline, who provided the following observations about her father:

“Caroline: My natural father was a child molester and he had been spotted molesting me… It’s only come up recently that I was sexually abused by the priest there... eleven and twelve [years of age]. So um to have that mind set that I had sinned and all of a sudden this priest also doing these things.” Extract 6, Caroline.

Another common explanation given by respondents for their abuse and/or disruptive home environment was their parents’ addiction to drugs and/or alcohol, which resulted in their parents’ negligence or incapacity (Extract 7):
“Mary: My father was drinking and he was really putting us down and smacking us and tried to kill us with an axe, all the time… I was all black when I was a child. My lady [mother] was bashing me badly.” Extract 7, Mary.

This early contact with parental addiction exposed participants to a pattern of behaviour that was almost seen as normative within the family, although it also drew their attention to the consequences of addiction, as evidenced in the following extracts from Samantha and Julie:

“Samantha: There’s alcoholism, both parents, um self destructive parents like with addictions. Um my sister was a heroin addict before she died… Both parents [had depression], and my sister had bipolar. She died of an overdose.” Extract 8, Samantha.

“Julie: We were quite poor… Probably [because of] my father’s gambling because he used to leave us in a terrible state at times when we mummy, mum used to sort of oh [worry] how are we going to eat? And because he used to go off and gamble there was no money and that’s something.” Extract 9, Julie.

As Samantha’s extract illustrated, her parents’ addictions were perceived as self-destructive behaviours and were associated with depression. She also had a sister who overdosed on heroin and was diagnosed as having bipolar disorder. Both experiences highlighted the common understanding that addiction can arise from both mental health problems and also from dysfunction within the family. Julie’s Extract 9 also illustrated how both financial difficulties and physical absence can arise from problem gambling within the family.

5.3.2 Negative adult life experiences

Respondents reported difficulties in coping with a number of meaningful negative/traumatic adult life events. These life events were perceived to have a significant psychological influence on respondents
Many respondents described experiencing negative life events that influenced their everyday living. John for instance in Extract 10 reported the constant daily stress of the fear associated with being a victim of crime:

John: “I used to live in XXX and this caused me a lot of stress. And a neighbour who lives opposite me… because he’s into crime and every time he got picked up by the police he looked across at me ‘I’ll get you’. And he started to threaten me, threaten my life ‘I’m gonna firebomb and murder you’… So now I’m a victim of crime which gives me a lot of stress.”
Extract 10, John.

Respondents provided numerous examples of traumatic experiences related to medical procedures. These medical procedures were perceived to be traumatic because they were uncontrollable and physically invasive. They also caused respondents considerable distress, and for some, had implications on their self-identity:

Danielle “I got diagnosed with endometriosis when I was 34… I ended up having to have a full hysterectomy and one ovary removed when I was 34 and when I had grown up believing that all life would bring me was getting married and having children that was um, pretty hard. So I still struggle with Mothers Days sometimes and, and, and not having a child.” Extract 11, Danielle.

Vanessa “I had three back operations in three years. Um the first two operations they scraped my disc. The third operation it had to be fused. So I’ve got no disc and that’s when I got told I went crazy because they gave me the wrong drugs in hospital. And I lost my memory… Very traumatic um being told I’d never run again and I was an athlete. When I was at school I was training for the Olympics.” Extract 12, Vanessa.

As demonstrated by Danielle and Vanessa’s Extracts above, they were forced to change their life goals and reevaluate how they perceived themselves. Their unsuccessful coping with these events had both an immediate and enduring influence on their psychological well being.
Vanessa in Extract 13 below reported her inability to cope with her experience of rape and attempted suicide:

“Vanessa: “I’d been raped. And I was found in Brisbane they pumped my stomach because I’d been raped and it was my way of dealing with it.”

Extract 13, Vanessa.

Respondents reported a lack of support from significant others in dealing with their traumatic experiences. Brooke, in Extract 14 below, described how a lack of support from her partner increased the negative consequences associated with her hysterectomy.

Brooke: “I ended up having to have an operation and he [partner] left me on my own and I wasn’t I’d just come out of hospital and I wasn’t um supposed to be left on my own and he did it for a whole week. I had a hysterectomy and normally just when you come out of hospital from one of them you’re supposed to you know stay in bed.” Extract 14, Brooke.

5.3.3 Traumatic significant relationships during childhood

This subordinate theme related to reports of traumatic relationships or the loss of significant relationships during childhood. Such experiences were perceived to have influenced respondents’ understandings of how their own relationships had developed during adulthood. As Christine related:

“Christine: My mother had a relationship with a man who sexually abused both of my sisters, and tried to sexually abuse myself. Being the eldest I um told my mother what was going on and then it came about that my two sisters had been interfered with as well. So I remember that. Initially after I told my mother she didn’t believe me. She went through disbelief and the grief process. And she um after that there was a great deal of resentment that built up from me towards my mother. And we were continually arguing.” Extract 15, Christine.

Christine’s extract described how an adult male who was placed in a position of trust had abused both her and her sisters, and how this had led to ongoing feelings of anger
towards their mother. Respondents also spoke of the emotional abuse that been perpetrated by at least one of their parents, for example, Christine below:

“Christine: And he’s [father] a little bit controlling and um we can get into arguments where he turns authoritarian figure and is quite um controlling and can be abusive I believe I feel towards me... mentally to some degree. He’ll yell at me he’ll just [do] those types of things he’ll say things um he’ll put my behaviour down. Lots of different things and looking back his behaviours are very similar to the behaviours of my boyfriend when I was 17 [who was physically abusive]. Although my father, as far as I know, um was not physically violent. But the emotional sort of stuff was there. The controlling behaviour um the put downs those type of things.” Extract 16, Christine.

In the above extract, Christine drew parallels between the relationship she shared with her emotionally abusive father and physically abusive ex-boyfriend. Both had involved emotional control or domination over her behaviour.

As described previously, a second element of this subordinate theme focused on the loss of significant key figures in the respondents’ childhood and concomitant psychological effects.

“Joanne: “I had a really close relationship with my grandmother. So it was very hard to leave her when we came out here. And she came out um on holiday twice after we immigrated. But then she died when I was eleven. Um, Christmas day, yeah. So um that was one of those big life altering moments… after that I don’t remember a lot but I had a break down apparently.” Extract 17, Joanne.

“John: “I was about 7 or 8 years old and my father said, “son your mother just died in hospital having another baby. Now get to school. Big boys don’t cry.” Extract 18, John.

Both of the extracts above provide examples of respondents’ experiences of loss of significant relationships and their inability to grieve due to poor coping skills and/or
receive appropriate support from others. John’s experience also illustrated how gender role expectations can make it difficult for males of any age to express their emotions. This experience may have led John to develop a tendency to repress his emotions whenever he was subsequently confronted with adversity.

5.3.4 Traumatic adult and family relationships

The presence of traumatic relationships during adulthood also emerged as a dominant theme. Many of the respondents described experiences of domestic violence that had occurred over long periods of time and which had resulted in both physical and emotional harm. Similarly, there were descriptions of the loss of significant adult relationships respondents found difficult to accept. In some cases, this extended to the loss of significant loved ones. Joanne, for example, recounts how she had lived with a partner who had difficulty in controlling his anger.

“Joanne: Ah well my partner we have issues because he has um very bad anger management problems. And really I I found myself wondering the other day if I actually got together with him because he is a bit of an emotional cripple. And that would allow me to hide. He would never demand that I step outside of my comfort zone because he is so limited in that respect. Um and we actually went to counselling and he went to an anger management course. Um because he’s just got a vile temper an absolutely vile. I mean he’s never hit me or hit the kids. Because I said to him that would be the first and last. He’d be out the door. And I’ll call the police. I’m quite happy to send you to jail so there’s your options.” Extract 19, Joanne.

Although Joanne’s partner had not physically harmed her, the psychological consequences of living with someone with a violent temper had led her to be constantly fearful. As a result she developed a pattern of repressed behaviour to avoid angering her partner. Other respondents described how they had been subjected to physical and sexual abuse within their relationships.
“Mary: He [first husband] was aggressive towards me. He put the knife on my neck, throat. He said if you don’t give me sex I’ll just kill you.” Extract 20, Mary.

Relationships could also be traumatic in situations where one partner had been unable to cope with the infidelity of the other partner, as related by Brooke below:

“Brooke: My husband had an affair with another woman. That was one of the reasons I left and he started being really friendly to her so. So I suppose that didn’t help and I ended up leaving, I couldn’t handle it in the end.” Extract 21, Brooke.

Mark similarly reported being unable to cope with his relationship problems and reported how he had turned to alcohol to escape from the emotional pain. It is likely that gambling played a similar role thereafter.

“Mark: Also when I was 19 I had a love of my life she left me and I tried to. I tried to drink myself to death but it didn’t work.” Extract 22, Mark.

Emotional problems were also seen to have arisen from the grief and loss associated with the death of significant others. John, for example, perceived that his development of mental health problems prior to his gambling had resulted from the loss of a family member.

“John: I lost ah my youngest son in a road accident... Because I’ve lost my Mother. In my life I lost my Mother, my Father, my wife, four sisters died of cancer, my brother was from cancer. Then to lose a son. You do not expect in your life to outlive your children.

Interviewer: No.

John: So I’ve lived with a mental illness [because of these deaths].” Extract 23, John.
Similarly, in Extract 24, Mary describes how she began drinking heavily in response to the loss of her husband.

“Mary: When my husband, before he suicided himself, he was drinking and everything and after he died I was completely lost. My everything you know, I just going down and down and down and I was drinking and carrying on, going to parties.” Extract 24, Mary.

In such cases, there was evidence that some of the respondents, because of the protracted nature of their experiences, had come to perceive traumatic relationships as an accepted facet of life and so it was not uncommon for them to engage in the same self-destructive behaviours as their partners.

5.4 Superordinate Theme 2: Psychological Problems

A dominant theme revealed by the transcripts, which was closely linked with the negative life experiences superordinate theme, related to participants’ experiences of problems with their psychological health. Given that many respondents had experienced trauma extending back into childhood, many described the development of psychological problems during childhood, adulthood, or both. As described below, some felt that their childhood had not been fulfilled and this was believed to have ongoing significance during adulthood. Respondents believed that their psychological problems had contributed to their initial interest in gambling and had motivated their ongoing urge to gamble.

5.4.1 Developmental needs during childhood unfulfilled

This subordinate theme related to participants’ reports of being developmentally unfulfilled during their childhood because of the quality of their relationships with parents or other parental figures. Many reported problems of attachment and how this had led to feelings of low self-esteem or rejection from the family, or of being considered the ‘black sheep’ of the family. Mary and Stacy relate such feelings in the extracts below in the context of a discussion of what they remembered about their relationships with their mothers.
“Mary: You just have to, I’ll stay in the corner and stay there and that’s it. That was my life.” Extract 25, Mary.

“Stacey: I know if we wanted to ask mum anything at home, she would normally read all day and watch teli, and you’d sort of say ‘oh mum can I go out mum can I go out’, and you’d be doing that for five or ten minutes before she said anything. And so there was no sort of relationship.” Extract 26, Stacey.

Mary’s extract suggested she was isolated from her mother (with no outside interactions) and this was the extent of her relationship. Stacey also recalled how she perceived her mother to be an absent figure who rarely engaged either with her or her siblings, and this had made it very difficult for them to develop any meaningful attachments with her. Alternatively, where some interactions did occur, the relationship lacked affection or only occurred when the parents wanted to exert discipline.

“Caroline: Very strict [upbringing]. Um I had to excel in school um if I didn’t get an A I was I was unworthy. Um he [her Father] would give me his time when he was trying to teach me things. So he wouldn’t be the type of dad that would just give me a cuddle for love. He would spend time with me to teach me things and that was it. Um I never ever remember getting a hug for from him or a kiss or anything like that.” Extract 27, Caroline.

In effect, Caroline had come to believe that she could only be accepted by her father by excelling academically. Such relatively affectionless childhood experiences may have led to the impression that respondents were unworthy or unlovable, and this may have contributed to their low self-esteem. This is borne out by Joanne’s description of her interactions with her mother (Extract 28).

“Joanne: Um, myself image for most of my life has been bad. Very much so, a just quite I don’t know how do you say that. My mum is very good at the backhanded compliment. It’s the one with the sting in the tail. I love you but. My mum is very good on the psychological warfare side of things.” Extract 28, Joanne.
In using the term ‘psychological warfare’ Joanne appeared to suggest that her mother attacked her in a psychological rather than physical sense and this had contributed to Joanne’s poor self-image. Others such as Denise described themselves as “outsiders” and this had led to an exaggerated sense of rebellion and desire for independence when she matured.

“Denise: Um over the years ah I always felt like I was an outsider, having so many brothers and sisters. I always felt like I was the black sheep of the family and whatever I did it was never right. So I, I became very rebellious. And then as the years went on um, I sort of had to stand on my own two feet basically and fend for myself. Yeah but knowing that I’ve still got the support there of my parents if I went back but I just I had this big distance between them.” Extract 29, Denise.

5.4.2 Mental health problems during childhood

The transcripts suggested respondents had experienced significant mental health issues during their childhoods and felt that these had affected their development. This theme is closely linked with the negative experiences and unfulfilled childhood developmental needs as discussed above. For example, in Extract 30, Megan described how instability within the home environment had affected her psychological wellbeing during childhood, to such a degree that she had been unable to talk or remember certain periods of her life.

“Megan: I didn’t talk for a year after my dad left. And I’ve got very vague recollections of being little. I don’t remember that year at all and this is just what my mum’s told me that I just used to run away from school every day at lunchtime and come home and wedge myself in between the corner of my bed and my dolls house and sit there and cry. And I don’t remember any of that and I’m really glad I don’t.” Extract 30, Megan.

The negative life experiences respondents experienced during childhood (encapsulated in the negative home environment) had sometimes resulted in depression and suicidal attempts during childhood, as indicated by Mark and Christine:
“Mark: I tried to commit suicide when I was six years old. Throughout childhood I tried to commit suicide.” Extract 31, Mark.

“Christine: Significant levels of depression. Um I would say my first recollection of being depressed would be probably be around the age of 13. I didn’t know what it was at the time but now when I look back I would have been depressed intermittently from 13 til now. And I still suffer with depression and I’m on medication. Light medication. For antidepressants ah antidepressant medication rather.” Extract 32, Christine.

5.4.3 Adult mental health problems

This subordinate theme developed from participants’ reports of ‘negative life events’ and how these experiences were seen to have contributed to their development of adult psychological problems and problem gambling.

“Vanessa: I wasn’t doing too well and I got depressed. Um, and I hung around with the wrong crowd and met some people with bad news again. I moved to a caravan park and I stayed there and tried to make ends meet. I wasn’t doing too well and I got depressed. Um, and [attempted] suicide because of that and that’s when the pokies started. The pokies came in.” Extract 33, Vanessa.

Vanessa, in Extract 33, linked her battle with depression to her first involvement with poker machine gambling. Caroline related a similar experience.

“Caroline: I was on anti-depressants for easy three years. When I first got convicted in ninety eight [for committing crime related to funding her gambling habit] I actually went to a Mr or Dr XXX a psychologist… Back then he actually diagnosed I had post-natal depression um, and other bits and pieces, and this and that. And rather than actually dealing with it back then it wasn’t dealt with. So that depression just grew and grew and grew and grew. So that when the court case came back up when it was finalised in two thousand and four, that from that it just became such a huge you
know little ant hill turned into a termite mould. And um, there was major
depression um, where the psychiatrist started me on fifty milligrams of
Zoloft and in the end I was on two hundred. So that’s a fair wack. Um,
afterwards, after about two years of being on that it wasn’t doing anything.
They changed me to Vexal or something like that and when I came out I
managed to get myself off it. So I weaned myself off it with my GP
supervision. Because I just thought no um, I’m not going to keep on just
because it was another way of numbing out as well it was like these pills are
just going to make it all go away for awhile. And I thought no it’s not going
to do anything so I need to just deal with it so I got off them.” Extract 34,
Caroline.

Caroline suggested that her gambling and dependence on anti-depressant medication
had been a method of escaping her problems.

Some respondents also indicated that depression was not the only psychological
problem being experienced. Other comorbid conditions such as anxiety and/or addictions
other than gambling were reported.

“Stacey: Depression, major depression, borderline personality, um, post
traumatic stress disorder, um, bipolar, ah and OCD (Laughter). The only
one I haven’t had is schizophrenia, I just don’t tell them about the people in
my head. No (laughter).” Extract 35, Stacey.

“Caroline: I was addicted to everything else as well. Um, anything that was
gambling virtually… When I don’t gamble I’ve drank to excess… Yeah
there’s um, not just substance but anything that’s mood altering. So you
know I’ve gone from gambling to alcohol ah to sex addiction you could
even say. Um, drugs I haven’t but I know that I could very easily. I’ve done
dope three times and I thought wow I like this. So and the think, the stupid
thinking in that I would say no I’m not going to do drugs because I lose
[control] of my body. And it’s like well what have I done with the rest so
yeah (laughter). And food addiction as well that’s another one so I’ve never
gone to the extreme where I’ve you know bulimic or anything but I’ve just
overeat. So I binge eat as well.” Extract 36, Caroline.
“Christine: At one stage in my life I did drink relatively heavily. But, that I stopped it by myself. And that would have been around I think it was around twenty two, twenty three that I was gambling yeah I was gambling then. But no I was drinking around then. I actually stopped drinking and started gambling. So yeah one sort of transferred onto the other I guess.” Extract 37, Christine.

In the above extracts, both Caroline and Christine reported having transferred between different forms of excessive or addictive behaviours that included promiscuous sex, binge eating and excessive alcohol consumption. These reports suggested that they appeared to have a desire to constantly engage in certain behaviours to fulfil a psychological need. There was also acknowledgement from respondents who felt their excessive drinking contributed to their excessive gambling, and that this reduced their inhibitions and thus led to increased gambling participation. An example of this was Brooke:

“Brooke: Umm, that’s when I started drinking even I used to drink a bit and I’d have we’d have parties and stuff with people drinking so I used to binge drink. But then when I left I really drank heavily umm, and so and probably played cross lotto and keno and umm, and that sort of thing and a bit more of than what I would have normally.” Extract 38, Brooke.

5.5 Discussion of Participants’ Personal Histories Analysis

The overarching aim of the first section of the qualitative study was to elucidate the subjective understandings of the participants’ personal backgrounds and the events they felt had shaped them into the people they were prior to their involvement in EGM gambling, and also the development of subsequent problematic behaviours. Since problem gambling has previously been conceptualised as a maladaptive method of coping with trauma/life stress (e.g., McCormick, 1994; Taber, McCormick, & Ramirez, 1987) it is interesting to establish through subjective recollections, if such life experiences occur and the coping styles that are employed. Participants’ accounts of their life experiences prior to their gambling involvement were characterised by consistent themes relating to negative
life experiences and psychological problems. In the rare instance a participant recalled ‘happy’ childhood memories (only 3 of 18), when they further expanded on their personal histories they recalled traumatic/stressful experiences that had occurred later in their development. In some cases, negative life experiences were recalled in both childhood and adulthood. In accordance with IPA ideals, the number of instances of events is unimportant but rather the salience of the theme to the individual. The nature of the experiences recalled both from childhood and later in life clearly caused participants significant psychological distress. As a result, the first superordinate theme derived from the transcripts *Negative Life Experiences* was related to the second superordinate theme *Psychological Problems*

5.5.1 Negative childhood experiences and stressful/traumatic experiences of problem gamblers

The *Negative Life Experiences* superordinate theme encompassed a number of experiences reflective of unstable and negative home environments during childhood (*Negative Home Environment During Childhood*). Participants described how they were exposed to the relationship problems between their primary caregivers and how, in some instances, they were raised in environments where domestic violence was considered normal. This exposure to their caregiver’s relationship issues and domestic violence caused the children significant psychological distress and uncertainty and was reflected in the *Traumatic Adult Relationships* subordinate theme and the *Psychological Problems* superordinate theme (more specifically the *Developmental Needs of the Child Being Unfulfilled* subordinate theme). The theme also highlighted the occurrence of inconsistent parenting causing instability within the family and feelings of neglect and rejection in the child, with key parental figure(s) being either physically and/or emotionally unavailable to the child.

A disturbing feature of the theme was the recollections by participants of occurrences of physical and sexual abuse during their childhoods. These findings correspond with research evidence that suggests the majority of women (and significant minority of men) seeking treatment for addiction (substance use disorders) have higher rates of physical and sexual abuse than the general population (Rosen, Ouimette, Sheikh, Gregg, & Moos, 2002; Simpson & Miller, 2002). Acknowledgement has been made that childhood sexual abuse may be an etiological risk factor for the development of substance use disorders (Simpson & Miller, 2002). Indeed, traumatic experiences have been
hypothesised as being risk factors of problem gambling (e.g., Blaszczynski & Nower, 2002; Jacobs, 1986). Research has found that exposure to childhood trauma appears to be significantly associated with problem gambling (Scherrer et al., 2007). Indeed, evidence indicates that a history of child abuse is prevalent amongst treatment seeking problem gamblers, with higher rates of abuse found in female problem gamblers (Ciarrocchi & Richardson, 1989; Specker et al., 1996). Parental addiction to substances and/or gambling was also a feature of the negative home environment during childhood subordinate theme, and affected participants’ perceptions of their childhood. Participants noted how, as children, their parents’ addiction affected them both psychologically and physically. Research has concluded that a family history of substance abuse is associated with an increased risk of being a poor monitor of child activity (Chassin, Curran, Hussong, & Colder, 1996), and this accounts for feelings of rejection by respondents.

Another emergent theme was the importance of negative life experiences during adulthood to participants’ self-perceptions on their self-development. The subjective evaluation of the adult life stressors described by participants caused them psychological distress and affected their self-identity. John, for example described how he perceived living with the threat to his physical safety and his self-labelling as being a ‘victim of crime’. These findings are consistent with the work of Higgins and Endler (1995) who found that life event stress positively predicted distress both as an independent contributor of the variance and in the interaction with a number of coping styles. The occurrence of negative life events prior to gambling onset is also consistent with Lesieur and Rosenthal’s (1991) suggestion that problem gambling was often preceded by significant life events such as the death of a close family member, a physical illness or a recession in an individual’s career. The connection made by some participants between distressing life events and the onset of their gambling problems could suggest that they utilised gambling as a way to cope with their experiences. Dickerson (2003) provides some support for this assertion and reported a relationship between maladaptive forms of coping and the recent occurrence of a distressing or disruptive life event.

The findings are consistent with Scherrer et al. (2007) who found that life time exposure to trauma (and childhood trauma) is significantly related to problem gambling and supported participants’ subjective understandings of how they developed into the people they were at the onset of their gambling problems. The associations Scherrer et al. (2007) found between lifetime and childhood trauma and problem gambling were in part
accounted by psychiatric covariates and genetic and family environmental factors. Scherrer et al.’s (2007) findings also provide support for the theme related to their subjective experience of psychological problems. Participants’ experiences of psychological problems may therefore be associated with their histories of negative life experiences and negative home environment.

5.5.2 Unfulfilling and/or traumatic relationships and experiences of loss

Another strong theme to emerge related to reports of traumatic relationships with significant others occurring both in their childhood and/or in adulthood. These relationships were characterised as being emotionally unfulfilling and, for some, personally destructive. The relationships that occurred during childhood acted as role models for respondents and laid a foundation for how they came to view how relationships function. At the same time, the traumatic relationship subordinate themes (both childhood and adulthood) were closely linked with the negative home environment subordinate theme and the negative adult life experiences theme. For instance, Caroline experienced a traumatic relationship with her father during her childhood as a result of the sexual abuse he perpetrated.

The Childhood Traumatic Relationship subordinate theme for some of the participants was characterised by their perceptions of having a controlling parental figure and a lack of affection and unconditional love necessary for developmental growth, and that these problems were evident in their adult relationships. This is consistent with research, which has suggested that relationship issues for individuals who experienced severe cumulative interpersonal violence, or experienced childhood abuse and/or neglect are more complicated than for those who have not (Pearlman & Courtois, 2005). This has been found to be particularly evident for individuals who were harmed in childhood by their primary attachment figure, as were many of the problem gamblers included in the current study (Pearlman & Courtois, 2005). One reason for this is that traumatised/abused individuals may form relationships with other individuals who themselves have unresolved traumatic experiences and who also have similar relationship difficulties (Pearlman & Courtois, 2005). Thus, respondents may establish adult relationships that are characterised by additional abuse and instability.
In addition to these negative experiences participants endured during childhood were experiences of death of significant loved ones. The loss of these significant relationships was often accompanied by an inability to cope with the loss. John for example, was instructed to repress his grief over the loss of his mother as a child. He was subsequently unable to grieve when he lost other significant people as an adult. This example highlighted the repression of grief and experiences of traumatic relationships both as a child and the enduring effects it had into adulthood. These findings reflect those of Doiron and Mazer (2001) who conducted a qualitative study involving interviews with seven individuals with significant problems with VLTs. The aim was to investigate themes associated with the different phases of their gambling career. As in the current study, Doiron and Mazer (2001) found that, during their participants’ preinvolvement phase, their lives were characterised by a lack of meaningful and problematic relationships and feelings of loss. The subjective recollections from participants in the current study highlighted how they perceived themselves as being unable to cope with the loss and/or breakdown of their significant relationships. Participants recalled engaging in self-destructive behaviours such as alcohol abuse and gambling when their relationships ended. These extreme reactions suggest that participants’ previous negative life experiences may have left them ill equipped to deal with relationship breakdowns and/or loss and associated grief. Participants suggested they may have either learnt ineffective coping strategies and/or their psychological resources needed for coping had been adversely influenced. As Schum, Hobfall and Keogh (2004) have argued, it may be that victims of trauma such as those in the current study may have their internal resources that are necessary for coping with traumatic events depleted by their childhood experiences. In other words, although relationship breakdowns, tragedy and losses are elements of life which all people have to face, these people were particularly ill-equipped to deal with them because of what they had experienced previously during childhood.

5.5.3 Problem gamblers’ experiences of psychological issues

The second superordinate theme identified in the transcripts concerned participants’ perceptions of the Psychological Problems they had experienced prior to their commencement of gambling problems. This was a strong emergent theme and initially involved the developmental needs respondents perceived as having been unfulfilled during childhood (these may have in part been due to the negative home environment and traumatic relationships they had endured), and then the mental health issues they
experienced during childhood and adulthood (again these mental health issues may have possibly related to the Negative Life Experiences superordinate theme).

The lack of secure attachment to key parental figures was a defining feature of the developmental needs during childhood being unfulfilled. As described by Mary, her childhood was spent away from any positive contact with her parents. Some participants perceived their parents to be lacking in affection or love, and controlling their behaviour by withholding approval. For participants who were physically, sexually and/or emotionally abused by their parents, it was unlikely that any beneficial attachments developed. Pearlman and Courtois (2005) note how an insecure attachment style is developed in childhood when the affectional and security bonds are severed through loss, violence, abuse or neglect. These experiences, in turn, gave rise to psychological problems such as depression and suicidal ideation during childhood. These problems have frequently been related to similar early experiences in the literature. Indeed, Dolan (1988) reports how a large proportion of individuals who experience abuse develop insecure and dissociative attachment styles. These attachment styles have been found to contribute to a number of psychological problems such as “sleep disturbance, flashbacks, concentration difficulties, memory problems, eating disorders, substance abuse, self destructive behaviours and self mutilation” (Dolan, 1988, p. 45).

It also became evident from participants’ accounts of their subjective experience of childhood that their parents’ engagement in addictive substances and behaviours also detrimentally affected their development. Both parental intoxication and absences due to gambling affected respondents’ relationships with their parents and the stability of the home environment. A qualitative study conducted by Darbyshire, Oster and Carrig (2001) investigated the perceptions of children living in families with a parent/caregiver with a serious gambling problem. The central finding reported in this study was a sense of pervasive loss that went beyond just the physical separation when the parent left to gamble (or the physical loss of home). The children disclosed how they perceived their parents as ceasing to care for or love them, as the addiction had become their parents’ central focus to the detriment of the child. Respondents from the current study also reported strong feelings of rejection and the negative impact this had on their self-esteem. It would appear the attachment bonds between the addicted parent and child may be damaged and as a result the child loses dependence and trust in the parent (Darbyshire et al., 2001). Interestingly research has suggested that having a parent who had gambling problems places the
individual at greater risk for developing problems themselves (Darbyshire, et al., 2001). Perhaps this pattern develops through a process of learning and modelling the parent’s addictive behaviours. Lorenz (1987 cited in Darbyshire et al., 2001) asserted that children of parents with gambling problems were exposed to poor role modelling. There was also some suggestion that such children experience emotional deprivation and display behavioural problems, as was also evidenced in the current sample. The negative home environment that respondents were raised in had the potential to dramatically influence developmental needs and cause psychological problems later in life.

Research indeed supports the idea that early experiences influence the subsequent development of psychopathology. Work conducted by Finzi-Dottan and Karu (2006) found that emotional abuse experienced during childhood and the perception of having uncaring and controlling caregivers (as in the current sample) had an indirect effect on the development of psychopathology later in life. Another study reported similar conclusions and suggested that emotional abuse during childhood is an important factor in the development of long term psychopathology e.g., low self-esteem, impaired interpersonal relationships, depressive moods, anxiety, suicidal tendencies and eating disorders (Harmer, Sanderson, & Mertin, 1999). It is believed the defence mechanisms that enable individuals to cope with stressors are adversely influenced in individuals who have been abused because they tend to view themselves negatively, feeling they are unworthy of their parents’ love and attention (Finzi-Dottan & Karu, 2006). These findings may help in explaining why the theme emerged of low self-esteem and feelings of rejection that resonated with respondents and the development of psychological problems in both childhood and adulthood. For these reasons, the importance of a stable home environment with the presence of loving parents/caregiver cannot be understated. Respondents in the current sample reported life histories that involved unstable home environments and a lack of positive attachment figures (Bunman, 1994 cited by Darbyshire et al, 2001).

The Psychological Problems theme also indicated that high levels of comorbidity (e.g., depression) were frequently connected by participants to their gambling. Desai and Potenza (2008) also reported comorbidity in problem gamblers and suggested an association between lifetime problem gambling and major depression, generalised anxiety disorder and severe substance use disorder. As previously discussed, there has been some suggestion in the literature that gambling may be used as a method of coping with trauma and abuse, or as a means of regulating dysphoric mood and this may account for
respondent’s perceptions that their gambling followed periods of depression (Lesieur & Blume, 1991; Lightsey & Hulsey, 2002; Thomas, 2003).

5.4 Conclusions from the Qualitative Analysis of Problem EGM Gambler’s Personal Histories

The superordinate themes of negative life experiences (negative home environment in particular) and psychological problems provided some support for one of the predisposing factors of Jacobs’ (1986) General theory of Addictions. Problem gamblers appeared to be less capable of coping with negative life events such as relationship breakdowns, the death of loved ones, abuse experiences and other stressful major life events. This may result in the development of psychological problems such as depression, anxiety and other addictions. Blaszczynski and Nower (2002) reported that emotionally vulnerable gamblers usually have a history of poor coping. Jacobs (1986) stated that individuals who internalise feelings of inadequacy, etc (due to early experiences) withdraw from interacting with their environment, and do not learn adequate coping skills and methods to moderate their stress levels.
Chapter 6

Study 2


6.1 Overview of Chapter 6

Chapter six summarises the analytical results from Study 2 that relate to the development of problem gambling and respondents’ within-session gambling experiences. Of particular interest in this analysis was people’s phenomenological experience of playing the machines and whether they reported ‘trance-like’ or ‘dissociative-like’ states as postulated in Jacobs’ (1986) General Theory of Addictions.

6.2 Problem Electronic Gaming-Machine Players’ Subjective Experience of the Development of Problem Gambling Behaviours and Within-Session Experiences (Behaviours, Emotions and Cognitions) during EGM Play

The second section of the interviews related to participants’ perceptions of how their problems with gambling had developed, as well as their subjective experiences of what occurred when they were playing on the EGMs. Since these two areas are conceptually linked, the results for both are discussed in a single chapter.

Inspection of the transcripts revealed four superordinate themes. The first superordinate theme involved positive early gambling experiences that encouraged participants to perceive gambling as an enjoyable activity they wanted to undertake again. The second superordinate theme related to different ways in which playing EGMs fulfilled certain internal ‘psychological’ needs. A cluster of themes was aligned with what has been termed a ‘downward spiral’ into deeper gambling involvement. The final superordinate theme to emerge related to the issue of control.
6.3 Superordinate Theme 1: Early Positive Gambling Experience

Participants described how their gambling ‘careers’ commenced with a positive gambling experience that they wanted to repeat. Respondents reported playing EGMs with family or close friends. For many, this was the only activity they participated in with their significant family members, and which made them feel accepted and loved. For participants who did not participate in gambling activities in their formative years and/or who had experienced a ‘big win’, they nevertheless described how they observed other people have a ‘big win’, and thus concluded they too could replicate this success and that gambling was an easy method to obtain money.

6.3.1 Early childhood introduction to gambling by family

This subordinate theme arose from participant descriptions of how gambling had been introduced by family members. Even in the case where a child was not allowed to gamble, the respondent remembered the excitement and the benefits they received from their parents’ gambling success. Vanessa provided such an example, when she recalled how excited her mother was after she had been gambling (and won) and the treats she received.

“Vanessa: And from what I remember she used to go down there and she’d come home and in the mornings I’d go and get my lunch money for school. And she had these little plastic containers full of 20 and 5cent pieces on the dresser in the bedroom. And you’d know she’d won a lot of money and she used to be all excited and she be lying in bed and I’d be saying ‘I’m off to the bus to go to school’ and she’d say ‘oh take a little bit of extra money’, because she was all excited because she’d won that night on the pokies. And you see that was a treat for me because mum used to be um, hardly ever any money, we never had anything.” Extract 39, Vanessa.

In effect, Vanessa learnt early as a child about both the monetary benefits and positive feelings that might result from gambling. This early family introduction to gambling also provided participants with the idea gambling was a normal activity to engage in, as also reported by Caroline in the extract below:
“Caroline: The women would have and play bingo at home. So they’d have their cards and they would do it with beans and they and my great grandma would have that at her house... And I remember at the age of seven or eight even though I couldn’t gamble because I was, they said I was too young. Um, I was there with my great grandma and she would say pick the piles and I would pick the piles and she won. So and looking back on that now since I’ve been doing the treatment it’s like that was my first form of recognition from my great grandmother. I belonged and you know I was worthy of her love because I was winning for her so I think that’s when it first got planted in there like it even got me somewhere it got me love... at grandma’s house you’d have all the little old ladies coming over and they’d be playing bingo and I’d be calling out the numbers and I’d be getting praise and yeah so it was like, it was put in my mind that by gambling I belonged somewhere and I was good at it. It was a family thing. Um, and it was just normal.” Extract 40, Caroline.

In addition to gambling representing a regular and acceptable family activity, Caroline further explained how she perceived gambling as a method of gaining recognition and acceptance from family members. Gambling provided Caroline with a sense of belonging and a feeling of being loved. In other words, gambling may have served to overcome feelings of rejection in families where children did not have strong relationships with their parents.

6.3.2 Early wins

A number of respondents reported how they had obtained early wins on EGMs and how this had resulted in them believing they would always win. When these early wins were combined with the enjoyment of playing, respondents thought they had found a profitable and fun activity.

“Brooke: I won a heap of money [in early sessions]. Like they were you know 3 figure 3 figure sums and on a one cent poker machine it was you know. Umm, and I thought wow this is good fun I can keep doing this and win but then you started losing and you think oh no I won before I’ll win again and it became a vicious cycle.” Extract 41, Brooke.
Brooke also acknowledged that she used these initial wins as evidence to support her continued EGM play and this had contributed to the vicious cycle of her gambling. Respondents who were experiencing financial problems believed they could consistently win and therefore increased their gambling in an attempt to solve their problems, as described by Christine below:

“Christine: And I managed to win I think it was somewhere around four hundred five hundred dollars. And to me who was, you know, pretty poor at the time. That was like the most unbelievable thing that could possibly happen. To just do that and win so much money. So after that it became every day that I was thinking oh I’m just going to put four dollars in and it’s going to happen. And for awhile I did win well. Like a lot of money but I kept putting it back in. and then it just went from there on.” Extract 42, Christine.

Early gambling wins also contributed to participants’ sense that playing EGMs was ‘easy’ money. John’s assertion that playing EGMs was better than working highlighted his desire for an alternative reality that provided opportunities to obtain ‘easy money’.

“John: And so I went in there and had an incredible win. And I thought oh shit this is better than working.” Extract 43, John.

6.3.3 Early observation of big win

Respondents’ early experiences with EGMs also involved descriptions of observing people in the venues having ‘big wins’. This contributed to a belief they would also have a ‘big win’ if they played long enough. For example, Vanessa in the extract below described observing a ‘big win’ early in her gambling career:

“Vanessa: We were looking at them and we were just standing there and this the boss he was playing them and he the bells all started going off and he won he won a lot of money. And we were all watching and then he started shouting us drinks”. Extract 44, Vanessa.
Vanessa also observed the positive attention a venue manager received from other patrons when he won playing EGMs and his machine bells announced his big win to the room whereby they received free drinks. In this way, Vanessa experienced first hand the excitement of winning and how it could also enhance her self-esteem and identity. She too could be successful and become the centre of attention if she played and obtained a large win.

6.4 **Superordinate Theme 2: EGM Play Fulfilled Individual Needs**

The second superordinate theme encapsulated subordinate themes that described how playing poker machines fulfilled certain psychological needs of the participants and how this led to a desire to continue gambling. Each of the subordinate themes is conceptually linked because they all relate to respondents’ reasons for gambling.

6.4.1 **Attractive playing environment**

The analysis revealed that different elements of the EGM venue/environment contributed to its attractiveness and fulfilled specific psychological needs. Because IPA is not focused on the prevalence of themes but rather how respondents make sense of their own reality, each feature that made the venue environment attractive is considered in turn, in no particular order.

Most of the participants were female and they described the venues as social and safe environments without the negative social consequences they usually associated with hotels. In Extract 45 below, Joanne used her gender to explain why she required a safe environment, and provided examples of common perils that could be avoided in the gaming room. Given that many respondents had personal backgrounds involving abuse, it is likely that the need to feel safe in venues was an important motivation.

“Joanne: You could actually go out as a woman on your own, you could go out safely. Without someone spiking your drinks or some drunken yob all over you.” Extract 45, Joanne.
Respondents perceived the gambling venues as safe havens that allowed them to escape from problems in their non-gambling life. For example, Jenny in Extract 46 described how she attended venues regularly to escape domestic violence:

“Interviewer: When you started to have problems. Was there any reason why you think that that happened or you somehow became more hooked? Jenny … yeah I think umm, just being in domestic violence [relationship] and...
Interviewer: Mm hmm
Jenny: That caused a lot of it.” Extract 46, Jenny.

Male respondents had also experienced ‘negative life events’ and described this need for a safe environment. John provides an example of this below:

“John: XXX club is for, is you know, for members and I feel it’s a, it’s a safe environment.” Extract 47, John.

Another component of the ‘attractive playing environment’ theme included respondents’ descriptions of the friendly atmosphere provided by the venues. Joanne, in Extract 48, explained how the atmosphere of the environment contributed to her development of problems.

“Joanne: First of all to start with where I would go was country pubs. So it was even more welcoming. So it was really fatal in that respect. Um, but it got to feel like you know the places that you go to all the time, it’s comfortable. People know you. They say hello, hi how are you?” Extract 48, Joanne.

Joanne focused on the attention she received from people in the venues and how this fostered a sense of belonging, which encouraged her to return. This sense of belonging and acceptance was further promoted with venues providing special incentives. Christine provides example of this below:

“Christine: Um, I was in some type of high gamblers group that was given free drinks. It was some type of particularly at the casino. There was you a
letter that was sent to me and I was in the high gamblers I got um, a high gamblers group or something. A certain amount of people got a high gamblers card and they were allowed free alcohol.” Extract 49, Christine.

Christine in the above extract described the importance of becoming a member of the ‘high gamblers club’ where she was treated as being special through the provision of free drinks. Respondents developed alternative identities directly related to their gambling participation through this sense of belonging and venue incentives.

Such experiences led some respondents to feel that they could escape from their normal reality by becoming engaged in their own ‘gamblers’ community’. Megan’s extract highlighted the distinction drawn by some respondents between gambling and non-gambling realities through the use of terms such as ‘unhuman’ and ‘unreal’.

“Megan: They [the venues] felt like little bubbles like little capsules where you know you got your free tea and coffee and soft drinks and biscuits and you could sit there and no one would bother you if you didn’t want to be bothered it just it felt like it was a different kind of community in there. It didn’t it wasn’t people helping each other it was just unhuman.” Extract 50, Megan.

Alcohol consumption during play was a dominant theme and contributed to the perception that gambling venues were attractive places to attend. However, the consumption of alcohol whilst playing also influenced their gambling behaviours and contributed to respondents’ development of problems.

“Mary: I have scotch and coke a lot… Oh until I get wobbly in the head. And ah, I’m happy. I’m always thinking that I gonna get more bigger money than I do (laughter).” Extract 51, Mary.

“Julie: I wouldn’t have had more than maybe two. Because when you drink it loosens your inhibitions and you tend to play them faster you know (laughter). Which isn’t a good thing for somebody like me. And also the drinks were free you see.” Extract 52, Julie.
Mary and Julie reported how alcohol consumption impaired their cognitions and gambling behaviours, reducing their inhibitions. Julie attempted to excuse her alcohol use by emphasising that the drinks were provided free by the venues and, as a result, she often consumed more alcohol.

6.4.2 Attractive features of machine

Respondents described specific features of the machine that attracted them to play and how these fulfilled different psychological needs.

The sensory stimulation provided by the unique features of the machines such as the sounds and colours were very attractive components. Megan provides an example of these sensory stimulating features below:

“Megan: The machines, it was colourful. And it stimulated me I don’t know, it was the noises like a kid’s toy it’s bright and flashing and the noises… So it was kind of like an adult’s kids toy. It was a toy it was a novelty.” Extract 53, Megan.

The sensory stimulation provided by the EGMs, when combined with the novelty element, also reinforced respondents’ gambling because they fulfilled the need to experience something new and exciting. Denise, in Extract 54, described how she believed these features contributed to her development of problems.

“”Denise: It was ah it was pretty exciting it was the lights, the noise. But, more so the lights. I’ve got this infinity thing with lights I love coloured lights and that’s where my um my mechanism in conjunction to the machine became so focused. It was more of the lights like I’m in there not so much for the free spins because after awhile I realised that the free spins would only come up when they want to come up so it was it was more to do with the lights. It’s got lights and it’s got noises there that sucked me in. Absolutely sucked me in and still controls me, but I have to be aware of those things and know that the damage that it’s caused.” Extract 54, Denise.
Denise reported how initially the free spins encouraged her play, but how over time she focused on the lights and music. The free spins and anticipation of the next game, in addition to the sensory stimulation, reinforced her EGM play. Megan in Extract 55 reported how the anticipation and surprise of each spin reinforced her play.

“Megan: Yeah, it’s, it’s the pushing or the pulling of the arm and its seeing what’s coming up next it’s the, it’s the not knowing, it was the surprise.”
Extract 55, Megan.

The above extract also described how the repetitive nature of pushing buttons became a conditioned behaviour. The challenge of trying to beat the machine due to the respondents’ belief (due to their earlier experiences of winning) it would eventually pay out was also an attractive feature as described by Danielle below:

“Danielle: Um, and then try to beat the machine by mucking around how you if you just keep doing one line or five lines or nine lines and one bet or five bet or ten bet. Um, try and drop the money out of the machine thinking that that will break the machines thought patterns so that you might get the free games. Umm, I’ve sat in front of a machine [and] absolutely counted each turn of the machine until I’d get a free game. Um, and even when I got up to like 376 turns and I still hadn’t got a free game. I’m thinking it’s going happen any [minute] it’s gonna happen the next turn, it’s gonna happen the next turn.”
Extract 56, Danielle.

Danielle reported how she tried to beat the machine, and believed that she would find a system that would allow her to get free spins. Danielle spoke about breaking the machine’s ‘thought patterns’, humanising the machine to make it controllable. The challenge and belief of being able to beat the machine was a way in which some respondents tried to enhance their self-esteem, as Jason related below:

“Jason: I think it was like you thought you were smart that you know you could increase or lower the bets or the timing of it. I remember I had system at one stage I used to go for five or whatever it was and then change it to something else. I thought that that would you know you were trying to
outwit the machine. Thinking you know there must be a code breaker or something that you it sort of have happen and it was ok.” Extract 57, Jason.

6.4.3 Allows means to escape life

Respondents explained how gambling on EGMs allowed them to escape from their ‘normal’ lives. Participants conceptualised this ‘need to escape’ as a form of avoidant coping that enabled them to ignore their responsibilities and engage in fantasies. EGMs provided respondents with a means of escaping through a process of narrowing their attention and modifying their mood.

Christine, Denise and Caroline in the extracts below gambled to escape negative emotions since they found gambling elevated their mood and blocked out problems.

“Christine: It did [gambling worsened depression] but I think I gambled a lot to escape depression. Because it would make me feel good so it’s difficult for me to work out whether like you know I wouldn’t gamble and feel suicidal. That wouldn’t happen. I’d feel suicidal and then I’d gamble. Do you get me? The gambling for me was a way of pepping me up and making me feel better and helping me to escape reality for awhile.” Extract 58, Christine.

“Denise: And thinking that I was actually out there socialising but I wasn’t. I was actually out there trying to numb out all the other stuff that needed to be dealt with at home. And it was much easier to run away from all of that stuff and you know it will probably still be there later but I’ll be in a different frame of mind. Never, it never worked out like that.” Extract 59, Denise.

“Caroline: I know that I’ve certainly used the pokies to zone out um, and to get away. At times it was little problems it was in the like when I was married. I’d get away from the crap but deep down I think because of all that stuff that happened to me as a kid. Of always wanting to seek love and acceptance from the family that, but that’s just buried deep down. And gambling is a way of not thinking about that.” Extract 60, Caroline.
Denise initially reported gambling socially, but eventually recognised that she gambled to alleviate her negative moods, which would then deteriorate at home. Caroline reported using gambling to block out problems and to escape childhood experiences. The mood-altering and escapism effect of EGM play was short lived and dependent on directing their attention to the machine. Despite respondents’ recognition of this, the benefits of gambling for even a short period of time outweighed the reality of ‘normal’ life. Respondents became reliant upon gambling to improve their mood and provide feelings of escape, and this contributed to their development of gambling problems.

Respondents reported how they narrowed their attention in order to dissociate and escape from their reality.

“Megan: “Sometimes I’d talk, sometimes I’d just want to sit there and stare at the screen and push the buttons and be a robot… Sometimes I would only be able to see the screen. And not, my peripheral vision wouldn’t work, it would just be my line of vision would be from here to the screen and I would not know anything else that was going on around me until a machine started spitting out money and you could hear the money hitting on the metal and then it sounded like a lot of money so you’d turn and that’d sort of snap you out of, snap you out of it but it’s kind of like. It’s kind of like I was half in a dream. Like you know sometimes you have those floating sort of dreams where you feel like you’re flying sometimes. And yeah it was sort it was sort of like that for me, that just that that heady euphoria. Just not knowing what everything else was going on around… I think its just because my brain also wanted to do that as well, because it it did want to tune out. I didn’t want to worry about the fact that I didn’t have a job and it was I think it was just a coping mechanism for me at the end of the day. And to be able to justify what I was doing to myself so I didn’t feel as guilty about what I did. Because I knew what I was doing was wrong.” Extract 61, Megan.

“Caroline: “You were there but you weren’t there type of thing. Yeah. Um, and I think that’s like I said before it’s like within a couple of minutes of me starting to gamble it was like what am I doing here but yeah I would
continue to do it. And it’s a bit like your body was there but your mind wasn’t there... A zombie. Totally, umm, zombie. Not interested in other people ah very antisocial ah yeah. I just wanted to be on my own and like this is my little bubble, my space and don’t come in it.” Extract 62, Caroline.

Megan described how her brain wanted to ‘tune out’ and become a “robot”, and she became engrossed in the euphoric feelings produced by the machine. Megan’s use of the word “robot” suggests that her behaviour was on automatic pilot, devoid of emotion and rational control. This ‘robotic’ or ‘narrowed attention’ reduced her awareness of her surroundings. Megan’s comparison of this phenomenon to a ‘dream state’ suggested this was a type of ‘unreal’ or ‘dissociative-like state’ that allowed her to focus on her internal experience. Caroline (Extract 62), likened her within-session experience to feeling like a zombie that created an image of her being mindlessly focused on EGMs, despite her initial conscious desire to not gamble. She also described being aware of her body playing the machine, but that her mind was disconnected. From this, it could be that some participants were attracted to achieving this ‘dream’ state and problems developed as a result of this desire. Vanessa’s (Extract 63) experience is consistent with this hypothesis:

“Vanessa: It [her problem gambling] got worse because my relationships weren’t working out um, and also then I was depressed. And I’d go and play them and it’d take my mind [off]. And the thing is half the time I’d be playing them and I wouldn’t even know if I was winning. I’d just be staring blank into the screen and just pushing a button, not even thinking about what was up there or what was over here and people would say oh don’t push it you won, you won. And it’s because I wasn’t thinking of that, I was thinking about what was emotionally affecting me… Everything around you is nonexistent. And you’re the only like dimension that’s it. And all you can see is just what’s going over the reels. It’s just like that’s, that’s it. The only thing you can feel and see and hear. Nothing else around you.” Extract 63, Vanessa.

The phenomenological experience of respondents’ ‘narrowed attention’ consisted of various elements. Christine reported that it took approximately “20 minutes” to reach this state.
“Christine: Um, it felt like that there was nothing else around me. Um, I couldn’t people would speak to me and it would be like I hear them but I don’t hear them… I’d hear sounds very quietly in the background and everything around me was just very quiet and even if the pokie machine was going off next to me I could just hear it type thing… I would only get to that level I think if I’d been gambling a certain amount of time. So I’d feel that probably after being there for about twenty minutes that trance. Entering that trance for about twenty minutes and then when the money runs out. It’s like it’s gone again and you want it back. I don’t know if it’s true. I don’t know if they’re hypnotic. There’s some suggestion that they may be but you do feel when the money runs out, it’s like you’re slowly coming out of this trance. And it’s like oh I’ve gotta get money to get back in again.” Extract 64, Christine.

Respondents reported how this ‘narrowed attention’ provided relief from problems when they were away from the machine for short periods. Samantha in Extract 65, described “sleepwalking” when away from the machine:

“Samantha: It would be like a bit like hypnosis. That you’d be like staring at the one thing just over and over again and like there’s just like no. Like meditation in a way. Like there’s no thoughts whatsoever and um, because like we were doing a meditation... And all your thoughts and your worries and your troubles go away. Um, and like even when you get up to go to the loo. It’s like if you if you’re sleepwalking to that toilet. Um, because all you’re thinking about is winning and winning. You want to get back to that machine as quick as you can. Um, yeah it’s like that that’s all that’s in your mind is just that machine and everything else just goes out. So yeah it’s a bit like meditation that all that noise goes. It’s like you’re blank like nothing. Like your brain’s been taken out. That’s what it’s like.” Extract 65, Samantha.

Respondents compared the ‘narrowed attention’ to a state of hypnotic trance and this is consistent with the dissociative trance state/or an altered state of consciousness during
gambling postulated by Jacobs’ (1986). Joanne and Julie provided examples in Extracts 66 and 67.

“Joanne: Because I think it’s almost like a hypnotic trance. You’re away with the pixies. You are so focused on one thing you’re not really aware of much else that goes on around you. Ah, I remember being in one venue um, and it there was a couple of guys arguing. And they, they must have been arguing for a little while because everybody else had basically stopped and turned around and it took a while for them to register on me. And it registered and I turned around and as I turned around one swung a punch at the other and I jumped out the way because they collected the chair that I was sitting on. Um, and I when I was thinking about it afterwards I thought I did hear them but it didn’t register.” Extract 66, Joanne.

“Julie: Almost like a um, like I was on automatic pilot. And my body was doing something that my mind didn’t want to do. But I couldn’t stop my body from doing it. I was like a zombie type you know just putting it in and even sometimes I would, I would get a win but I was in such a trance that I didn’t even recognise that I had won something. I was in such a trance of just putting this money in all the time.” Extract 67, Julie.

Joanne was so absorbed in playing the machine that she was unaware of her external environment and her fight or flight response was impaired by the ‘trance state’/altered state of consciousness. The ‘trance state’ was also highlighted when Julie continued to play and did not recognise she had won. In a similar way, the respondents below described how they ignored physical urges during their ‘trance state’ while gambling EGMs.

“Danielle: I wouldn’t think about the bad day I’d had at the office. I wouldn’t think that I was hungry and I should be eating.” Extract 68, Danielle.

“Christine: There were no feelings of pain, an example of that I’m not sure if I bring it up now. But one time I fell off the pokie stall at the casino. And now I fell so hard that I think I cracked my ribs. Now I was in such a deep
trance that I got back on that pokie chair and I kept playing for another three hours with pain in my ribs. Now every time I had a pain I had some more drinks. When I got home the next day and I started to laugh I realised that I’d either severely bruised my ribs or I’d, I’d done some damage. I didn’t attend hospital because I was so embarrassed about what I had done. But yeah I I fell off a chair and continued to play pokies and I didn’t even I felt pain for two seconds and got back on there.” Extract 69, Christine.

The reports of ‘narrowed attention’ and feelings of being in a ‘trance state’ suggested that other aspects of consciousness would also be altered, for example, perceptions of time. In Extract 70, Brooke recalled her experience of time flow during her gambling sessions.

“Brooke: I sat there for hours and hours and hours and hours, and then got told it was closing time. I said no it’s not its only ten o’clock, he said no its three thirty in the morning and I used to say you’re kidding!” Extract 70, Brooke.

Brooke’s perception of time was altered because she believed less time had passed than what had occurred. Brooke further explained this phenomenon in Extract 71.

“Brooke: Because they never ever had clocks in pokies venues. I don’t think, I don’t think, I can’t remember one pokie venue that’s got a clock in it. So you couldn’t unless you had a watch on. Um, and I very rarely looked you know. I suppose in the beginning when I had like my husband home then I used to try and keep track of time because I needed to. Because I had to usually go home and cook tea and we sort of you know, I’d think oh yeah he’s working back I’ve got another fifteen, twenty minutes you know. And then you’d next time you’d look at your clock, you’d been sitting there for an hour. So you would lose track of time. When I was on my own I’d go in there and it oh ok it’s nine o’clock oh, yeah, ok I’ll stay here til about ten and then I’ll go home. It was two o’clock in the morning and they were getting ready I said what’s the time? And they said oh it’s about half past one. We’ll be closing up shortly. Depends what night it was. So yeah, you
lose track of time. Time seemed to go so fast in those places.” Extract 71, Brooke.

Brooke reported that venues did not have clocks and that when she tried to monitor the time to leave the venue, she still miscalculated the passage of time due to her altered state of consciousness.

Respondents also escaped through the use of fantasies about how their lives would change for the better if they had a win and this provided them with hope and motivated their continued gambling. Caroline in Extract 72 demonstrated this.

“Caroline: Probably thinking if I have a good win it’ll fix a lot of problems. C’mon give me a win, give me a win, give me a win, give me a win. Ah, because I would probably start by thinking oh this is a problem I’ve got on my mind how can I fix it? Oh I can fix it with money. And it would just be that that’s all it would be. Just like c’mon win it for me win, it for me give me that win. Over and over again.” Extract 72, Caroline.

The previous theme of gambling venues being like a different world as compared to the non-gambling reality was also perceived as a way for respondents to escape from their problems and responsibilities. Joanne and Samantha described this:

“Joanne: It is another world. It’s like being transported into another world. The reality of your day to day life doesn’t touch you. Um, it’s wonderful. It’s just you. There’s no one else. There’s nobody else’s needs or wants or nothing. Nothing intrudes on it.” Extract 73, Joanne.

“Samantha: There you’ve got responsibilities and um, when you’re actually in a gambling environment like pokies your responsibility is taken away um, you’re sort of almost escaping reality in that effect.” Extract 74, Samantha.
6.4.4 Produces arousal

Respondents described how the anticipation and play of EGMs produced feelings of arousal, as described below:

“Stephanie: I feel very like I’m a bit get butterflies in my stomach and you feel very nervous. And because you know all this is sort of it’s a big step. You’re going to win or you’re going to lose. And um, probably yeah a bit of nervousness as well. And um, yeah just feel very excited at the same time I feel nervous so sort of like a nervous excited kind of reaction. Um, which is normal I guess. And um, but mainly a lot of butterflies and just the feeling of you know I hope I’m winning and you know.” Extract 75, Stephanie.

“Vanessa: It was like you race, it’s like racing, it’s like you are on speed or something, or not speed but you get an adrenaline not an adrenaline rush but it’s just.” Extract 76, Vanessa.

6.4.5 Relieves boredom and provides a social atmosphere

Respondents reported that early in their gambling careers they had used gambling as a method of relieving a void created by boredom and/or loneliness and that this had eventually led to excessive gambling. Initially gambling was used as a method of fulfilling this void but it eventually developed into a habit. Megan described below how her gambling was initially a leisure activity with her partner but became a problem when she lost her job and needed the activity to relieve her boredom. Others such as Joanne described using gambling as a social activity.

“Megan: “To begin with it was only when my partner and I would go out for lunch and whatever change we got from like just say for example you know lunch costs you know 22 dollars, we’d go and stick you know the balance to bring it up to 30 in the pokies and we’d split it, and then whatever we’d win we’d take it home and put it in this tin that we bought, like because we were saving up to go on a holiday. It was fine, I reckon for probably about 3 months and then I lost my job and I couldn’t find another one and I had like 30 job interviews and they all rejected me. I was very
bored and because he was at work and he works very long hours and it was just let’s take a little bit of money out, let’s go over there. It was just, yeah, that’s sort of how it gradually started. Because I didn’t have anything else to focus my attention on. I didn’t have anything else to do so yeah, it was boredom.” Extract 77, Megan.

“Joanne: Um, I enjoyed the bells and whistles and it was a laugh. And I enjoyed the time with the other two girls and we’d be talking about softball or volleyball or life in general… I really think it developed into a problem because it provided a social atmosphere.” Extract 78, Joanne.

6.5 Superordinate Theme 3: Downward Spiral

Guided by the respondents’ transcripts, the following subordinate themes emerged as factors that reinforced gambling involvement and contributed to a ‘downward spiral’/progression into problem gambling.

6.5.1 Chasing behaviours

The central explanation given by participants to describe their development into problem gambling encompassed a well-known phenomenon of ‘chasing’. Participants gambled on a more regular basis because they wanted to win back money from previous losses. Brooke, in Extract 79, described the process of chasing.

“Brooke: I kept going back on a regular basis because I kept losing money and I wanted to go back and see if I could get um if I could win it back.” Extract 79, Brooke.

These chasing behaviours were sustained through participants’ beliefs that one big win would improve their financial/life circumstances and alleviate their problems.

“Caroline: I thought it’d be fixed by getting one big win, all my problems would be fixed. The way that I could tell that there was problems is because of the finances. In that I was, rather than paying bills, I was gambling.
Thinking oh I’ll win extra then I can pay those bills and then pay the other bills as well. But in the end it was just chasing all the time… Chasing, totally chasing, spending more time at the place. Ah where before I would go once a week, we would end up going every day. And then sometimes from going every day, we would be going in the morning, at lunchtime and after work. So that you could see how it was getting.” Extract 80, Caroline.

“Jason: Well it just started, I came back and thought oh well every place I go to I’m going to win. Of course it didn’t happen. I thought shit that’s funny I’ve lost all my money. I’ll have to go back and get it from the machines that I’d won from and I wanted to keep to win again. Sort of thing. I wanted to win my money back. I wanted my money back.” Extract 81, Jason.

As described above, Caroline was willing to incur debt because she believed she could ‘chase’ the one ‘big win’ that would solve all her problems, but the more she gambled, the greater her debts became. The phenomenon of chasing was also reinforced by previous wins that led participants to believe they would win again, for example Jason in Extract 81. Jason also had a ‘sense of entitlement’ that the machine should pay back the money he had lost previously. He also believed that the machines he had previously won on would give him another win.

6.5.2 Big win

The importance of a ‘big win’ and its contribution to the development of problem gambling (and thus the ‘downward spiral’ into problem gambling) was discussed in the Early Positive Gambling Experience superordinate theme. A ‘big win’ later in respondents’ gambling careers also contributed to the ‘downward spiral’.

Although respondents gambled to satisfy internal needs, a big win served to intensify the effect of winning, as described by Danielle in Extract 82.

“Danielle: She died [mother] um, and I was lonely and I um, was I guess stressed. And that [gambling] was my means of chilling out. Not looking at my responsibilities, not facing up to the world and so I would go and chill
out in front of the machines. And that’s when they changed and turned around. And I had had a big win. I was cheesed off after work and I just stopped at a venue in um the city before I caught the train and um, I was playing a five cent machine actually and it had had a few free games so I got up to two hundred dollars in the machine... and then it um, got into a free game and I got the um, it was a dog machine and I got the wishbone the dog bones and the pussycats, I got the five pussycats and the two wishbone dogs bones so I got nine and a half thousand dollars.” Extract 82, Danielle.

In other words, both the motivation to escape, as well as the big win, made Danielle’s gambling worse. She could recall fine details of the spins leading to the win suggesting that it was a very salient experience in her gambling career.

6.5.3 Addictive thinking/irrational beliefs

Respondents reported a number of irrational beliefs and behaviours during EGM gambling. This contributed to their increased involvement in gambling and their development of problems.

Respondents described various rituals they believed would increase their chances of winning. Megan described an obsession with obtaining three free games, whereas Caroline and Julie referred to superstitious beliefs about objects.

“Megan: Pretty much I used to like getting three free games. I couldn’t get off the machine until I’d had three free games. And it didn’t matter I don’t understand I still to this day don’t understand that. But it was the free games I wanted and I don’t know why. (Laughter). But yeah, until I’d had three free games like three lots of free games I couldn’t get off of it.” Extract 83, Megan.

“Caroline: Ah I had my own little rituals. I’d put my cigarettes in this corner and the lighter had to be on top of it in a certain way. Ah and if I didn’t win I’d swap them to this side.” Extract 84, Caroline.
“Julie: Or you would rub the screen or something. God can’t you pay me you know and anger.” Extract 85, Julie.

Participants also reported a number of irrational beliefs. Brooke and Stephanie in Extracts 86 and 87 respectively reported being able to beat the machine and believing a ‘big win’ was imminent, whereas Samantha was convinced there was a lucky machine (Extract 88).

“Brooke: I’m stronger that, I I’ll be able to beat it.” Extract 86, Brooke.

“Stephanie: I guess feelings of um, you know thinking that I am actually going to win. And win really big. And like because I’d seen other, a few other people do the same and even though I know that it probably isn’t possible. Um, I’ve got I’ve still got this feeling that you know I keep thinking it’s yeah that I’m going to always win and um that feeling is always there with me, like as if you know like you pick up something on the ground and it could be good luck.” Extract 87, Stephanie.

“Samantha: I think probably every person who plays pokies decides there’s a lucky machine and I know that I’ve got one which I probably mistakenly think is lucky and um, I always go towards the same machine I seem to always pick the same one because I like that machine more than the others even though they’re probably all the same giving out money, but it does seem to have more luck than the other ones I’ve played and I’ve played on so many and you just never seem to get anything back”. Extract 88, Samantha.

6.6 Superordinate Theme 4: Control

The concept of self-control arose in participants’ self-perceptions of their gambling involvement. Respondents reported early control over their gambling and how this control weakened as their problems progressed. Participants’ control over their lives outside of gambling mirrored their loss of control over gambling, although paradoxically many respondents also described how gambling became the one thing they felt they could control.
6.6.1 Early control over EGM gambling

At the onset of respondents’ gambling careers they believed their gambling was completely under control, as described by Caroline. Caroline supported this assertion by indicating that she initially only gambled with a set amount and did not chase her losses.

“Caroline: It [gambling] was, it was controlled back then because it was like I had a set amount and if I lost it, I lost it. I wouldn’t go and try and chase that loss”. Extract 89, Caroline.

Respondents were initially focused on meeting their psychological needs through gambling and were unaware of the possibility that they could lose control and develop problems. Danielle described this in Extract 90:

“Danielle: Originally I thought I was in complete control over it. Um, originally I just thought it was a bit of harmless fun. That you um, really are never ever aware oh how strong something could, could take control over your life.” Extract 90, Danielle.

6.6.2 Loss of control over EGM gambling

Following respondents’ initial feelings of control over their gambling came the recognition that they had lost this control as their gambling had progressed. Joanne, in Extract 90, described how she had “very limited control” at the height of her gambling problems. Joanne used gambling as a coping mechanism in order to escape from her problems and believed this exacerbated her ‘loss of control’.

“Joanne: Back then. None. Very limited. Very limited control. Um, when the gambling was at its peak, it was my answer to everything. So the more things got out of control, rather than trying to deal with each and every issue and solve it. I’d run away. To the gambling.” Extract 91, Joanne.

It emerged from the transcripts that respondents ‘lost control’ of their urge to gamble often at an almost unconscious level. Danielle, in Extract 92, articulated how the
‘urge’ to gamble controlled both her decision-making and gambling behaviours, but that she did not feel that she could prevent it from happening.

“Danielle: It’s not a deliberate mental choice um, but there’s just something there that um, that I could only put it down to being like the addiction that that um, it it’s there so I’m going to keep doing it. Um, um, and it is irresistible. It just had the stronger um, pull than anything else. The stronger pull of walking down the ramp or walking into the venue. And you just walk into the venue even though your, your mind’s saying don’t do it um, or maybe it’s your heart that’s saying don’t do it because that’s really where the basis or everything comes from, but it’s your mind saying oh I’m stronger than this I’m stronger that I, I’ll be able to beat it. And so you give into your mind.” Extract 92, Danielle.

Respondents’ perceived the urge to gamble as removing their capacity to make a “mental choice” despite their “mind” telling them not to gamble. Danielle hypothesised that it is the “heart” that told her not to play and this highlighted the emotional component of her gambling. In effect, she stated that it was her mind providing reasons to justify her desire to continue gambling.

Stacey and Christine (below) also highlighted the significance of the mind in the ‘loss of control’ over gambling and how having access to money weakened their control. Stacey ‘tested’ her control over gambling by tempting herself to monitor how much money she spent. Gambling was a self-harming behaviour for Stacey, as it confirmed her poor self-view when she was unable to control it. Christine’s extract provides an example of how as soon as she had money she was unable to control her ‘urge’ to gamble again.

“Stacey: I mean today’s payday and I’ve got my money at the bank and I’m just sort of crossing my fingers that, you know, cause sometimes I even think oh I’ll test myself. And spend five dollars, that’s all I’ll do. But I don’t, you know, and, and then I get angry with myself and it it’s you know I and I know it’s stupid I know it’s I shouldn’t be there and I you know. But I it just it’s a habit I know it’s a habit yeah.” Extract 93, Stacey.
“Christine: I’d rarely be able to stop myself. Very rarely. I’d you know for me a week without the pokies was just like amazing. You know, like if I managed to get through one week without going to the pokies that was just unbelievable. And there were times very occasionally where I’d have a week break. But because I’d have to generally, because I wouldn’t have any money coming. But every time I’d get, as soon as money came into my hands it was gone”. Extract 94, Christine.

6.6.3 No control over life outside of gambling

Some participants reported how their control over gambling became impaired over time, and how this soon extended to their non-gambling lives as well.

Caroline in Extract 95, suggested that gambling was a way of seeking help for her other problems because at the time as she was engaged in a number of self-harming behaviours.

“Caroline: My life was probably out of control. Um, just like gambling was out of control. I thought I had things under control but I didn’t. Um, I mean my marriage was in a shambles, everything was in a shambles. And I was just, I suppose in my own way I was trying to reach out for help. But I didn’t know how to go about it. So I just did it by raging and partying and um, self harm’s a huge one.” Extract 95, Caroline.

Respondents used gambling to escape their problems and this eventually contributed to excessive gambling. As a consequence of this gambling became an all-consuming activity in their lives. Julie supported this supposition in Extract 96:

“Julie: No I don’t have much of a life outside of gambling. I um, don’t have any interest in things, other things. I find it very hard to do anything else other than gamble. Just a simple thing like going to a film or socialising or things like that. It’s [gambling] always on my mind.” Extract 96, Julie.
6.7 Discussion of the Onset and Development of Gambling Problems and Within-Session Experiences

The aim of the second component of the interviews and IPA analysis was to explore subjective experiences of both the development of problem gambling and the features characteristic to within-session experiences of EGM play. The initial superordinate theme to develop from analysis involved Early Positive Gambling Experiences. This theme then contributed to the second emergent superordinate theme that examined how participants perceived particular internal needs as being fulfilled during EGM play (EGM Play Fulfilled Individual Needs). Another feature of the transcripts was a superordinate theme that referred to behaviours and cognitions that were characterised as inducing excessive play and the development of problems, the Downward Spiral into gambling problems. This downward spiral was facilitated by a loss of control over gambling, with the issue of Control over both gambling and life in general emerging as a superordinate theme. This reflected the findings in Chapter 5 that showed how the Negative Personal Experiences superordinate theme was associated with the development of Psychological Problems. The superordinate themes to emerge in this chapter may also influence each other and contribute to excessive gambling.

6.7.1 The importance of early gambling experiences

When describing how respondents were initially introduced to gambling, participants spoke of early positive experiences that left them with a positive impression of gambling. For many participants this included: observing or having an early win and/or being left with an early positive impression from a family member’s win. Researchers and clinicians suggest that early gambling histories are important for some individuals who develop problems (Sharpe, 2002). Respondents reported being introduced to gambling by people whom they trusted and had close relationships. These findings are consistent with Li (2007) who reported that close family and friends introduced problem gamblers to gambling because they were curious about gambling. This sense of curiosity, combined with the social acceptability provided by gambling with a trusted individual, may have contributed to a sense that gambling was an acceptable recreational activity. This is consistent with the reports from the present sample of participants and other research showing that women who develop gambling problems are more likely to have been
involved in social groups in which gambling is an acceptable regular activity (Trevorrow & Moore, 1998).

The introduction to gambling by family members may be important in the formation of gambling attitudes and patterns of behaviour (Sharpe, 2002). Sharpe (2002) stated that family attitudes towards gambling are likely to determine an individual’s attitude to gambling, and suggests that positive family attitudes may encourage people to view gambling as a recreational activity. Darbyshire et al. (2001) suggested that children who have parents/caregivers with gambling problems are at an increased risk of developing problems themselves. A number of respondents in the current sample were clearly exposed to parental addiction.

The early experiences of respondents suggested a strong positive emotional connection between gambling and the exhilaration of winning. It has been previously acknowledged that people who receive an early large win(s) or even frequent small wins may be more likely to develop future gambling problems because they may develop illusions of control over gambling (Sharpe, 2002). Sharpe (2002) argues that early gambling experiences potentially contribute to the development of cognitive biases and irrational beliefs about gambling.

It is interesting to note the importance of respondents’ observations of other people having a big win on EGMs, and how this encouraged them to believe they also could win. This observation may have also influenced their beliefs about their chances of winning in the sense of: “if he can do it, I can do it too”. Children of parents with gambling problems observed the excitement their parent(s) showed after winning and the associated monetary benefit. Other respondents, who as children participated in family gambling activities, for example card games and bingo, also developed positive emotional responses due to the acceptance and attention they received. These early positive emotional connections made it more probable they would repeat the behaviour in the future.

6.7.2 EGM play fulfills personal needs within problem gamblers

When asked to elaborate on the EGM gambling experience itself, it became apparent playing on EGMs encompassed more than just the physical elements. The subordinate theme of Attractive Playing Environment suggests the gambling venue itself
played an important role in the gambling experience and appeared to satisfy certain needs within the individual. Respondents’ perceptions of the venue suggest that it provided a feeling of safety and a place to escape, a place of refuge. Due to the respondents’ ‘negative life experiences’, the safe environment of the venue was an important feature that encouraged future attendance. The welcoming atmosphere of the venues provided respondents with a feeling of acceptance and it was socially acceptable for people to attend by themselves. Previous research has indicated EGM venues are more socially acceptable for women than traditional gambling activities (Scannell et al., 2000). Scannell et al. (2000) noted local hotels and clubs have made a rigorous effort to ensure EGM venues are perceived as being attractive and comfortable environments for women, in particular, those who wish to gamble alone. The attractiveness of a safe environment was also important for the male respondents who had histories of abuse. It emerged from the transcripts that the venues fostered a sense of belonging, with a number of features providing the impression that patrons were special, for example, membership to high rollers clubs, the provision of free food and drinks, the accumulation of points via play and recognition from venue staff members. This finding is consistent with Brown and Coventry’s (1997) findings that gamblers report increased feelings of safety and belonging.

Another emergent theme was that respondents initially perceived themselves as engaging in gambling to relieve feelings of boredom and/or loneliness to fill a void of something lacking in their lives, which over time became a habit. A number of researchers have reported similar findings (Brown & Coventry, 1997; Coman et al., 1997; Li, 2007; Trevorrow & Moore, 1998; Wood & Griffiths, 2007a). Castro et al. (2007) suggests that unstructured time and/or boredom appear to be risk factors for gamblers as it can lead to them spending more time gambling.

Another feature of the gambling environment described in participants’ accounts involved their perception of belonging to a ‘gambler’s world’ distinctly different from their non-gambling reality. In this ‘gambler’s world’, they were able to isolate themselves and attend solely to their activity of choice with no external responsibilities. The acceptability of alcohol use whilst playing was also an attractive element of the venue, particularly because many of the respondents had comorbid alcohol problems. The attractiveness of the gambling venue appeared to encourage return play and this theme appears consistent with Jacobs’ (1986) postulation, that gambling provides addicts with a sense of a different reality (in this case an environment where they were able to foster a sense of an altered
identity e.g. successful and accepted). According to Jacobs (1986), an addiction will develop when the addictive behaviour occurs in a ‘conducive’ environment.

Griffiths (1993a, 2003) highlighted the importance of situational characteristics that facilitate people’s decision to gamble, and noted the primary features of the environment, such as the location of the gambling outlet and how this could influence people’s decisions to gamble. Respondents in the current sample appear to support this assertion by speaking of their attendance at local venues. However, no mention was made of other situational characteristics previously reported as important e.g. membership requirements and/or the number of outlets in any given area (Griffiths, 1993a). This may be due to the focus of participants’ on the characteristics of the venues that fulfilled their psychological needs, for example, feeling safe and accepted.

The subordinate theme of Attractive Features of Machine suggested that the sensory stimulation provided by the machines, such as the noises and colorful lights, were important components of the play experience and may have induced feelings of excitement. Stark, Saunders and Wookey (1982 cited in Griffiths, 1993a) suggested that lights and colours can induce affective states and influence behaviour, for example, the colour red was found to be less inhibitory on play than other colours. Griffiths (1993a, 2003) also highlighted the importance of such structural components of gambling activities. White (1989 cited in Griffiths, 1993a) suggested that flashing lights and sound effects create an atmosphere of fun and activity with the sounds providing the impression of more wins than what actually occurs e.g. the sound of falling coins into the metal tray is suggestive of a big win, and the musical effects after a win inform the entire room.

Some respondents also believed that the expectation of playing EGMs and their participation produces excitement and arousal. Anderson and Brown (1984) hypothesised that the physical arousal and subjective excitement associated with gambling may be capable of sufficiently narrowing attention to allow the individual to escape their current emotional state. The role of arousal in excessive gambling has received attention in the literature, with Sharpe (1995) suggesting that arousal patterns appear to be different between social and pathological gamblers. An increased need for excitement/arousal or a susceptibility to boredom is related to impulsive excitement/sensation seeking which is associated with excessive gambling (Goodie, 2005).
The anticipation created through the ‘free spin’ features of the machine and the challenge of trying to beat the machine also fulfilled needs within the individual and encouraged feelings of hope that it was possible to win larger sums of money. These attractive features may have enhanced enjoyment and increased the likelihood of repeated play. Doiron and Mazer (2001) identified a similar theme relating to the importance of competition between the player and the machine and ultimately the attractiveness of the challenge of defeating the machine.

Another theme related to how EGM play met certain psychological needs of respondents’ was how it enabled them to escape. Respondents perceived that their EGM play allowed them to escape their previous and current negative life events. The theme suggested EGM play is used as a maladaptive form of coping that allows them to avoid or block out the reality of their lives and alleviate their mood. Research has previously reported problem gamblers disclose more negative affect and depression than their non problem gambling counterparts and describes gambling as a method of avoiding such negative feelings (e.g., Dickerson et al., 1996; McCormick, 1994). The frequent comorbidity of addiction, depression and anxiety symptoms have led some authors to summarise that these findings are suggestive of an affective dysregulation (Castro et al., 2007).

Respondents’ ‘need to escape’ is satisfied by venues through the transformation into a ‘gambler’s world’. This ‘gambler’s world’ is characterised by gamblers becoming completely absorbed in the gambling activity. Recent qualitative research has also found themes suggestive of gambling as a method of escaping life problems and a method of becoming immersed in a ‘gambler’s world’ (Doiron & Mazer, 2001; Li, 2007; Wood & Griffiths, 2007a). Observational studies of slot machine (EGM) adolescent players have also reported that problem gamblers are more likely to gamble to escape problems (Griffiths, 1991a cited in Griffiths 2003). Woods and Griffiths (2007) hypothesised that feelings of ‘escape’ when gambling was enabled through a process of mood modification that is usually achieved by a:

‘Dissociation from reality that was achieved through either altering arousal levels and/or engaging in a fantasy of being a successful gambler who would be able to pay off all of their debts and be respected’ (p. 114).
A characteristic of respondents’ within-session experiences involved narrowing their attention to focus solely on the machine. This narrowed attention ameliorated the impact of internal and external events (e.g. a lack of awareness of other customers and a neglect of physical urges) and was likened to a hypnotic trance, or being a robot or zombie. These reports of focused attention suggest the action of playing the machine relied on automatic behaviour, and that there may be an absence of higher order cognitions or dissociative-like experiences. Doiron and Mazer (2001) similarly noted that their respondents became self absorbed and focused on play and that these features acted as the ‘key ingredients’ to facilitating escape.

Participants in the current study also reported trying to escape from negative stressors through a process of altered consciousness that led to alterations in time perception. Jacobs (1986) argues that dissociative-like experiences are present during participation in addictive behaviours such as EGM play. A number of studies have reported problem gamblers more frequently endorse that they have dissociative-like experiences when gambling (e.g., Diskin & Hodgins, 2001; Jacobs, 1988; Kuley & Jacobs, 1988). In Jacobs’ (1986) model, the dissociative-like states serve to redirect attention away from chronic aversive levels of arousal, and divert thoughts of self-perceived inadequacy to enable the individual to participate in wish-fulfilling fantasies. The literature also indicates that dissociation can act as a method of managing overwhelming emotions, and this suggests that some respondents may have dissociated because they were unable to cope with their negative affect (Pearlman & Courtois, 2005). Research has also found that individuals who report childhood sexual abuse and/or other forms of complex trauma (as many of the current sample have) may spontaneously and unconsciously reactivate dissociative defences during periods of stress like what occurs when gambling. They may experience difficulties in modulating their emotions; alterations in consciousness and self-awareness are possible (Dolan, 1988). Researchers investigating changes in phasic arousal in attention and memory have suggested attention narrows during arousal and that general awareness of other options is restricted due to attentional filtering (Tracy et al., 2000). These findings suggest there may be implications for problem gamblers who, as discussed previously, report subjective changes in arousal.
6.7.3 The downward spiral into problem gambling

The Downward Spiral superordinate theme related to self-perceptions of the factors that contributed to a progression into problem gambling. One of the subordinate themes that was central in these accounts was Chasing. The phenomenon of ‘chasing’ involved respondents playing EGMs more frequently in an attempt to win back money from previous losses. ‘Chasing’ has previously been defined as continued gambling in an attempt to recover losses and has been observed in both recreational and problem gambling (Campbell-Meiklejohn et al., 2008; O’Connor & Dickerson, 2003a). ‘Chasing’ is one of the criteria for a psychiatric diagnosis of ‘pathological gambling’ according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, APA, 1994). The ‘chasing’ behaviours of participants were sustained through access to money and a strong belief that they would win back their losses. This is consistent with findings by Campbell-Meiklejohn and colleagues (2008) who argued chasing is sustained by a belief that a win is imminent. Respondents also described a strong sense of entitlement to the money they had entered into the machines and that this encouraged further ‘chasing’.

‘Chasing’ losses has been found to be closely related to impaired control over gambling and is thought to increase gambling participation and problematic gambling (Campbell-Meiklejohn et al., 2008). ‘Chasing’ and experiences of a ‘big win’ may facilitate the ‘downward spiral’ into problems. The subordinate theme of Big Win related to early gambling successes, which encouraged the belief in further ‘big wins’. O’Connor and Dickerson (2003a) suggest people’s tendency to continue to gamble following ‘big wins’ may be indicative of impaired control over gambling. Respondents in the current study were aware of how a ‘big win’ had negatively influenced their progression into problem gambling and some participants acknowledged how the ‘big win’ interacted with other phenomena. For example, some respondents gambled to escape. When this was combined with a ‘big win’, their problem gambling intensified. A qualitative study conducted by Wood and Griffiths (2007a) reported similar findings that suggested their entire sample had at some point ‘chased’ their losses, and recognised that their ‘chasing’ was related to avoiding problems. The downward spiral recalled by problem gamblers appears to be consistent with the early and middle components of Stage 2 of Jacobs’ (1986) General Theory of Addictions. These stages referred to the initial development and maintenance of problem gambling (Jacobs, 1985).
The subordinate theme of *Addictive Thinking/Irrational* beliefs encapsulated participants’ irrational beliefs and cognitions during EGM play. These irrational beliefs and addictive thinking patterns contributed to the ‘downward spiral’ into problem gambling and may have influenced chasing behaviour. Support for this assertion comes from previous research that has reported that irrational gambling cognitions and gambling-related behaviours are direct causal factors in the development of problem gambling (Miller & Currie, 2008). Respondents reported superstitious behaviours and rituals that contributed to prolonged play and beliefs that they would have a big win. There was also a commonly held irrational belief that they possessed personal attributes capable of beating the machine (Langer, 1975). A pertinent feature of the addictive thinking/irrational beliefs subordinate theme was the perception by participants that there is a lucky machine on which they would win. A belief in luck has previously been suggested to increase gamblers’ feelings of control (Wood & Griffiths, 2007a). A number of cognitive distortions have been cited in the literature that are suggestive of skill misperceptions, superstitious behaviours/beliefs and interpretative biases occur in problem gambling (MacKillop, Anderson, Castelda, Mattson, & Donovick, 2006). Researchers employing the ‘talking aloud’ method have also found evidence to suggest gamblers may hold irrational beliefs. As previously discussed, a study conducted by Delfabbro and Winefield (1999) found a total of 14% of all verbalisations were irrational, with this percentage increasing to 75% when only play related verbalisations were analysed.

6.7.4 To control or not to control?

Closely related to the *Downward Spiral* superordinate theme emerged discussions around control, not only in relation to EGM play, but also in life more generally. Respondents initially believed that they had complete control over their gambling behaviour, but gradually developed impaired control with continued participation. Dickerson (1993) also noted that, the more a person gambles, the more likely they are to have difficulties controlling their behaviour. Impaired control has been defined in the gambling literature as difficulties in resisting the impulse to gamble, and continued gambling when presented with a number of psychosocial and financial problems (Corless & Dickerson, 1989). Respondents appeared to recognise that their gambling was motivated by a desire to meet specific psychological needs such as a way to deal with stress. They were also aware that this loss/impaired control over gambling was not a mental/conscious decision, but was characterised by an ‘uncontrollable’ urge or irresistible desire to play. It
became apparent from the transcripts that (irrational) beliefs and (addictive) thinking influenced respondents’ loss of control over gambling. There was also some recognition that access to money influenced how much control they had over gambling that is, they were only able to stop gambling when they had no money and they immediately gambled again when they had money.

The final theme suggested that participants began to lose control over their lives outside of gambling. The occurrence of negative life events such as marriage breakdowns reinforced respondents’ feelings that had no control over their lives. An ethnographic study conducted by Li (2007) found that the female respondents appeared to have a disadvantaged socio-economic status and experienced a lack of control over their troubled life situations. Li (2007) argued that these factors significantly contributed to their gambling involvement and subsequent progression into gambling problems. The progression into gambling problems also meant respondents in the current sample were completely consumed with their EGM play and neglected to focus on their lives outside of gambling. One participant reported how the only thing in her life she felt she had control over was ensuring she had money to gamble.

6.8 Conclusions from the Qualitative Analysis of Problem EGM Gamblers’ Within-Session Experiences and the Development of Problem Gambling

In summary, the problem gamblers in the current study commonly reported that chasing, impaired control over gambling and irrational cognitions reinforced their gambling behaviours and contributed to their ‘downward spiral’ or development of problem gambling. The downward spiral recalled by problem gamblers may reflect the early and middle components of Stage 2 of Jacobs’ (1986) General Theory of Addictions. The respondents also described dissociative-like reactions or altered states of consciousness during EGM gambling, similar to Jacobs’ (1986) postulation.
Chapter 7

Study 2


7.1 Overview of Chapter 7

The current chapter presents the results from the final section of Study 2; namely respondents’ self-perceptions of how their problem gambling influenced their lives and contributed to the development of any antisocial/uncharacteristic experiences and behaviours.

7.2 Self-Perceptions of How Problem EGM Players’ Gambling Involvement Influenced Their Lives and Contributed to the Development of Antisocial/Uncharacteristic Experiences

Three superordinate themes emerged from participants’ accounts of how they perceived their gambling problems to have influenced them and contributed to the development of any antisocial behaviour and/or uncharacteristic experiences. The first superordinate theme was related to the negative psychological influence of gambling and the second reflected the all-consuming nature of problem gambling, which fostered the development of uncharacteristic and unsocial behaviours. The final superordinate theme related to the need to conceal their EGM involvement and its associated effects.

7.3 Superordinate Theme 1: Negative Psychological Effects of Problem Gambling

A number of negative psychological effects were described in the transcripts that respondents attributed specifically to their EGM involvement.
7.3.1 Negative view of self

Respondents perceived themselves to develop negative self-views as a result of their problem gambling. Respondents described how initially playing EGMs enhanced their self-esteem and fostered a sense of self worth, but this was solely dependent upon experiences of obtaining free spins and winning. Once the inevitable losses began to accumulate, respondents experienced a corresponding decrease in self-esteem. Mark in Extract 97 stated that he felt like a “millionaire” when he won on EGMs.

“Mark: I liked the way the machine goes, it spins down and when you win you feel like a millionaire.” Extract 97, Mark.

Mark’s statement above shows how playing EGMs allowed him to feel positive about himself. Similarly, Christine in Extract 98 described how her self-esteem was enhanced by the positive attention she received when she won:

“Christine: So I guess I felt special, good about myself. Um, and at the same and people when I’d won were looking at me so and crowded around. So I felt good about myself to some degree I think. Even it may have lifted my self-esteem.” Extract 98, Christine.

The inconsistent nature of winning on EGMs and the fact that problem gamblers ‘chase’ their losses, may have contributed to respondents’ reports of how gambling eventually caused negative feelings and decreased their self-esteem and self-identity. Christine and Stephanie in Extract 99 and 100 below reported how their self-esteem decreased because of their gambling involvement.

“Christine: Then I’d feel terrible [after losing]. You’d feel like you’re nothing and that you’re not worth anything and you’ve got yourself into debt, you’re in trouble, you’ve got to pay that money back and ah depressed”. Extract 99, Christine.

“Stephanie: I’ve lost my pride probably, my self esteem. Because your self-esteem goes down a lot. Because you feel like you know um oh the next day you’re back to being poor and you think all that money I could have done. I
could have you know. Um, it’s just a waste of energy like as well. Um. I’ve lost yeah a lot of energy I guess and a lot a lot of things in your life that you could have done.” (Extract 100, Stephanie).

Christine reported above how she felt worthless and depressed upon the realisation that she had placed herself in debt, whereas Stephanie’s self-esteem was lowered when she realised she had wasted her energy and money.

Joanne, in Extract 101 below, reported how her feelings about herself became worse as her gambling career progressed, and contributed to her perceiving her entire life in a negative manner. Joanne also highlighted how she experienced anger and frustration regardless of whether she did or did not gamble.

“Joanne: My whole image of myself got dramatically worse. The longer I gambled and the worse it got, the worse my feelings of self worth got. Um, I felt like I was just hopeless at everything. Um, and that I’d never been successful at anything in my life. It, it coloured my memories of the past as well as the present. Um, frustration and anger when I really, really wanted to gamble and I couldn’t. Frustration and anger with myself when I had been gambling.” Extract 101, Joanne.

7.3.2 Mood dependent on win/loss

Closely linked to the Negative View of Self subordinate theme were descriptions of how respondents’ perceived their moods to be reliant upon their wins and losses.

Respondents were able to focus on their own internal needs and described feelings of contentment and ‘trance-like’ states/narrowed attention while playing EGMs (see chapter 6, Need to Escape subordinate theme). However, these positive or contented feelings changed when losses accumulated and their money was gone, as described by Megan in Extract 102 below:

“Megan: I felt calm, relaxed for most of it [playing on the EGM]. When my money started to run out, what I’d taken with me, then I started to get anxious. Very anxious. I’d get sweaty palms and things and be really
worried and, and be extremely worried about losing all the money. And often it wouldn’t be about um, needing the money, it would be about losing the money because I wanted more money to gamble. It’s kind of weird (laughter).” Extract 102, Megan.

Megan clarified that the anxiety she experienced was not directed at having lost her money, but was due to the fact she wanted to play for longer. Megan may have wanted to gamble for longer in an attempt to regain those initial feelings of contentment.

Respondents reported extreme and contrasting emotions related to their EGM wins and losses. Jason and Julie in Extracts 103 and 104 described this below:

“Julie: Well, if I won I oh, WOW but if I lost, I would feel very, very almost suicidal. I’ve got to stop this, I’ve got to stop this.” (Extract 103, Julie).

“Jason: The guilt and the, and the really high highs and the low lows that you got with it, if I won I was just ecstatic and then if I didn’t I was really upset.” (Extract 104, Jason).

Julie explained how she felt suicidal when she lost and wanted to stop gambling, whereas Jason focused on the guilt associated with his gambling. In a similar vein, Samantha in Extract 105 explained that she felt guilty about the money she lost from gambling as opposed to other reasons, such as loss of time or productivity.

“Samantha: Um, there is always the thing oh I’ve lost so and so money, you know, you want to try and win it back and you feel guilty. That’s the main feeling, you feel guilt because you know that you shouldn’t have wasted that money and it’s definitely a guilt factor.” Extract 105, Samantha.

Although respondents felt guilt and extreme despair after losing money gambling, they were still compelled to play EGMs for the momentary feelings of contentment and then the exhilaration they experienced when they won.
In addition to reports of moods swings during EGM play, respondents also disclosed how their moods outside the gambling context changed and they directly attributed this to their EGM involvement. Christine and Denise in Extracts 106 and 107 demonstrated this below.


“Denise: Mood swings were just atrocious. Ah depression. Even though I had post natal depression, the gambling just added to it more. Um, suicidal thoughts. Ah I won’t say isolation because I’ve always been good at isolating, I still do it now. Um pushing people away and things like that, I still do that... I alienated them ah didn’t want anything to do with them like I said my mood swings as well.” Extract 107, Denise.

7.3.3 Self harming behaviours and other mental health issues

A number of uncharacteristic self-harming behaviours and other mental health concerns respondents attributed to their problem gambling, were explicit in the Negative Psychological Impact superordinate theme.

As a result of the desperate need for money, some participants reported providing sexual favours for monetary gain.

“Christine: I would have sexual relations with men because I thought that they would give me money. Um, it wasn’t so much as an agreement that if I had sex with them that they would pay me. But I guess it was more of a nonverbal thing from me that I know that if I sleep with this person that they’re going to give me money. Not if I have sex with you, you pay me for money. It wasn’t that, it was knowing that if I had a relationship, sexual relationship, with somebody that they would fund my gambling basically. And that’s something that I would never in my wildest dreams have behaved like that.... So um, so yeah I was sexually promiscuous with myself because of my addiction.” Extract 108, Christine.
Christine in Extract 108 above stated clearly that she engaged in risky sexual relationships in order to obtain funds for her gambling and that this was completely opposed to how she usually behaved in relationships. Other participants, regardless of any monetary benefits, also engaged in sexually promiscuous behaviour. These findings suggested that being sexually promiscuous was another form of risky behaviour in addition to gambling.

“Jason: I think I whether it was part of gambling or not I don’t know but I during the time that I was gambling I went to a prostitute. Ah probably about two and a half years. I don’t know about 6, 6 times. I’d never ever done that in my life. But whether that was a linked thing or not, I don’t know. It was something that I wouldn’t normally do.” Extract 109, Jason.

Another serious psychological problem reported by respondents associated with their gambling was significant levels of anxiety. Julie in Extract 110 below described what appeared to be a panic attack after losing a lot of money.

“Julie: Sometimes I would get fatigued. But there was one time I was in a hotel and it was er fairly late at night and it was very hot and stuffy and I had a sensation where everything was closing in on me. And I went got up and walked toward the bathroom and I just dropped… I think it was probably the loss of all the money plus the atmosphere… So probably the anxiety.” Extract 110, Julie.

Closely linked with other subordinate themes (within the Negative Psychological Affects superordinate theme) was the presence of depression and suicidal ideation linked to respondents’ gambling. In Extract 111 Julie stated that she had never experienced such a degree of depression before her gambling involvement.

“Julie: I can’t remember ever being that depressed when I wasn’t a gambler. I can’t remember when I, being not interested in anything. Feelings like ah anger, a real anger. And ah low self-esteem that sort of thing. I’ve been think, I think about suicide. A, lot, ah. I think about my life being
meaningless and worthless. I’m just taking up space. Incredibly low self-esteem. I get times where I come out of it and I get a little bit higher and I found I’m not that bad and that sort of thing. And all this comes back to same old thing that I am.” Extract 111, Julie.

The severe depression experienced by respondents because of their problem gambling led some to develop a desire to harm themselves, as described by Vanessa and Caroline in Extracts 112 and 113 below:

“Vanessa: Um, I wanted to kill myself quite a few times, um, I got put into mental hospitals… Every day I had guilts. Um, and like self-mutilation basically all I wanted to do was die. I didn’t want to wake up al I wanted to do was go go to sleep and not wake up. And guilty over what I was doing and what I’d done. Um, knowing knowing full well that I had a problem but it was just something that triggered me. It’s, it’s the emotional um the emotional things would trigger me so it, it was trying to get in control of my emotions.” Extract 112, Vanessa.

“Caroline: Suicide was something that was something that was there all the time. Um, but I would always think I’m not going to do it in an obvious way.” Extract 113, Caroline.

7.4 Superordinate Theme 2: All Consuming and Insidious Nature of Problem Gambling

Respondents reported that problem gambling became an ‘all consuming’ and insidious element of their lives and became their sole focus. They convinced themselves that their other commitments were irrelevant and sought only to gamble. Subordinate themes to emerge involved the uncharacteristic methods they used to obtain finance, the sense of entitlement that fostered their rationalisations to continue EGM play, and the effect on their relationships and finances. This ‘all consuming’ urge to gamble was used to excuse uncharacteristic behaviours.
7.4.1 Unsociable behaviours

Respondents developed unsociable behaviours in order to continue gambling. Respondents reported how they isolated themselves from their usual social and family contacts, as described by Joanne and Danielle in Extracts 114 and 115 below:

“Joanne: I’d started to avoid other social invitations to be able to go to the machines. Um, go to those places that I felt safe because they knew me. And I knew what happened there and everything was predictable. You would lose your money.” Extract 114, Joanne.

“Danielle: I became um, I don’t know if the word’s lazy or just selfish in the fact that I felt sorry for myself so I didn’t do my ironing, my housework suffered um, my friendships suffered because I didn’t entertain people. Um, so I guess you, you feel remorseful. You know you should be doing things and you’re not doing them… It’s made me I guess lose confidence in myself because I’ve let something what I see as being insidious take over. Negative um, it ah had made me lie. Um, um it’s um, made me put material things before people. Um, yeah, um. It’s made me an angry person, which I um had never been even with all the things that had happened.” Extract 115, Danielle.

Joanne isolated herself in order to gamble and achieve the feelings of safety she was lacking. Danielle described how she lied about her gambling and isolated herself from her friends in order to gamble. She also reported how she stopped normal daily activities because of her gambling. In her view, her value system had changed and she became ‘materialistic’, “angry”, “negative”, and ‘lost interest’ in maintaining her household. Many respondents reported regularly lying to their significant others to hide their gambling debts in order to continue to their habit.

7.4.2 Uncharacteristic acts to finance gambling

Respondents reported that they took money from significant others without their knowledge to maintain their gambling habit. They justified ‘borrowing’ the money due to
the belief that they would return the money through a ‘big win’. Caroline provides an example of her belief in borrowing the money in Extract 116 below:

“Caroline: So I was just gambling, I was doing keno, scratch tickets. Also like a way of thinking if I win I can pay everybody back and I won’t be in trouble anymore. Ah and even like when I was taking the money I wasn’t actually looking at it as me stealing. It was me borrowing. With always having the intention of paying it all back. Always.” Extract 116, Christine.

Denise, in Extract 117, explained how taking money from her sister was the worst thing she had done.

“Denise: That’s the worst that I have ever, ever done. I mean taking from my husband I mean that was justifiable, taking from my daughter that was justifiable but taking from my sister nah that's not.” Extract 117, Denise.

Respondents did not consider stealing money from their spouses or family members as theft because they believed they were entitled to the money since it was ‘mutual funds’ (as demonstrated by Denise in Extract 117). However, the methods utilised by respondents’ to conceal their theft indicated some awareness that their partners would not have approved of the funds being used for gambling. Megan demonstrated in Extract 118 how she concealed taking money from ‘mutual funds’.

“Megan: The money that I took that was meant to be for our holiday. Like the, the couple of thousand that I blew in there in the space of you know a nine month period. Umm, that we were saving and I would put money in there. I’d show him yeah look here I’ll put I’ll put 50 dollars in here that later on during the day I’d go and take it out. So and because it was a sealed jar too as well and I’d worked out how to get money out of there, so yeah, and I think in the end when he cracked it open there was only about one hundred and forty-six dollars left in there.” Extract 118, Megan.

Other methods employed by respondents to obtain funding to gamble were quite creative. Respondents manipulated the use of store credit cards by selling the goods they obtained on credit in order to obtain cash to gamble. Participants again justified these
actions through the belief that they would have a big win, which would enable them to clear their debts. The ‘all consuming’ nature of the addiction made it essential to respondents that they had access to money regardless of how they obtained it. The accessibility of obtaining money influenced the methods they employed. Joanne in Extract 119 below explained how she obtained funds to gamble through multiple methods.

“Joanne: What could I sell. I did things like I had a Harris Scarfes card and I went in and I bought expensive things at Harris Scarfes, walked out the door and around the corner to Cash Converters and I would spend months then trying to pay off the card. I sold jewellery. Um things like that. I had CDs, records all sort of stuff that I sold that was mine… Um we used to this thing at work where you’d put a dollar in a pot for a can of soft drink and it was in where I was in the office and I used to take money out and put an IOU in and that was how I convinced myself that I was doing alright. It was fine. Um but I would do things like take five dollars out and then when I had my half an hour lunch break I would drive to the nearest venue and play with that five dollars and try and turn it into more money.” Extract 119, Joanne.

In the more extreme cases of problem gambling and greater accumulations of debt, respondents reported embezzling money and committing fraud to finance their gambling. Respondents described these behaviours as being completely out of character, and defended their actions by attributing it to their problem gambling. The importance of having access to funds for gambling meant that some of those participants who had access to money through their work environments, stole from their places of employment. Caroline demonstrated in Extract 120 how she rationalised her theft by using the pressure she felt of being the sole wage earner.

“Caroline: Started working um, and started embezzling money from there. Um, with the excuse that I said oh well my ex-husband gave up a really good stable job at the gas company and wanted to become a truck driver. So he got his money and bought a truck that was a dud and yeah like the, I sort of looked at it that the pressure was on me to bring money into the house. Um, and I just got more and more into the gambling and started stealing money from my employer. And because I was also like the bookkeeper, I
was able to hide it until the accountants actually did an audit and they saw the discrepancies.” Extract 120, Caroline.

This ‘all consuming’ urge to gamble overwhelmed participants and influenced their decision-making to contribute to their uncharacteristic behaviours. The following extract by Caroline demonstrated how this ‘all consuming’ urge to gamble overcame any previous criminal conviction related to gambling and she again embezzled money from her workplace.

“Caroline: Someone must have told em and rang them up about my previous conviction and the board manager actually called me about it and I said look and at that point when that had come up actually said to them ‘look check everything because everything’s ok’ and it was. I hadn’t been gambling or anything and it’s as if I’d been given like that had given permission to now stop start stealing because they knew about my past and I didn’t have to hide that anymore. Um, and so I got back into the gambling again, I started stealing again and ah this time it was a hundred and forty eight thousand dollars.” Extract 121, Caroline.

The financial debt accrued by respondents’ meant that some were forced to engage in other illegal acts in order to physically survive. Julie and Stacey in Extracts 122 and 123 reported stealing basic necessities:

“Julie: Stealing… Just um, I got so desperate that I stole food to eat. Because I was so hungry.” Extract 122, Julie.

“Stacey: I have shop-lifted. Um, because I was desperate for food and, and you know and um, yeah mostly shoes. I’ve sort of well learnt you know you can take the old ones off and you dump them under the thing and just walk out with, with a new pair on. Yeah. And, and it’s not, I’m not proud of myself. Um, um, yeah mostly shoes and things. And you know I’ve done clothes because I’m not into clothes sort of thing. I’ve only done it when I really needed it. I’ve tried. Oh I’ve probably done a few drinks and all that from the shops as well. So yeah.” Extract 123, Stacey.
7.4.3 Debt

Unsurprisingly the ‘all consuming’ nature of problem gambling meant that respondents accumulated debt. As the severity of problem gambling increased, so too did the level of debt disclosed by participants.

Respondents with less severe gambling problems noticed they were unable to provide themselves with the same standard of living. For example Samantha (Extract 124) below:

“Samantha: I’m probably spending the money which I more likely spending on you know sort of luxury items on pokies and you know I’m not sort of like um, not paying the bills but then I’m sort of spending money which I could probably be spending more on you know better food and better quality of life and you know things that you need on pokies instead of what you should be spending them on.” (Extract 124, Samantha).

However, respondents with more severe gambling problems appeared to accumulate greater levels of debt. Often this would progress to a point where they were unable to pay their bills and in some cases resulted in the loss of their homes. John (Extract 125 below) described how his gambling involvement limited his finances to the extent that he was unable to afford his rent and Mark (Extract 126 below) reported losing his residence:

“John: At one stage I was gambling all my money including the rent and the housing manager said ‘If you don’t pull yourself together and start paying your rent I’ll, I’ll a kick you out of the house’.” Extract, 125.

“Mark: I didn’t pay the rent so I was homeless for awhile. Oh my kids they wouldn’t have got their shoes or whatever they needed. But I always tried to feed them properly.” Extract, 126.
7.4.4 Sacrificed relationships

Due to the ‘all consuming’ nature of the urge to gamble it was not unknown for participants to sacrifice their relationships. The significant relationships between problem gamblers and their family/friends were negatively influenced as a result of issues surrounding money, trust, lies and manipulative behaviour.

“Megan: It was more my relationship with my partner… he still doesn’t trust me with money… He wanted to split up. Umm, and he ended up, we ended up sorting it up and it was sort of on the proviso I needed to tell my parents umm, and his parents and they were some of the hardest phone calls I had to make. Umm, and just that I was not to go gambling anymore and if he caught me that would be the end. That would be the end of it so.” Extract 127, Megan.

Megan in the above extract described how the relationship with her partner was damaged because of her gambling involvement; she took money from their mutual funds and concealed her gambling. She also described how the costs associated with problem gambling could be enduring; and there is now a lack of trust within her relationship. Respondents’ theft in some cases resulted in financial difficulties for their significant others and this caused ongoing damage to their relationships, as described by Caroline in the extract below:

“Caroline: Mum was impacted a lot financially as well because when I left she was you know you she had all the bills and she’s helped me a lot financially that she’s given me loans. Ah she’s allowed me to use or not use but she paid for a lot of my debts on her credit cards (cough). Which I’m paying off now. Emotionally done a lot a lot of damage.” Extract 128, Caroline.

7.4.5 Relationship with machine

Some respondents became engrossed with their gambling and reported forming relationships with the machines.
Jenny in the extract below described how she made a personal, physical connection with the machine when she ‘rubbed it’ after a win.

“Jenny: Umm, and if I was winning I’d get real excited and start touching the machine and rubbing it and it’s horrible when you think about it now.” Extract 129, Jenny.

Many respondents also reported feeling possessive towards their favourite machines and anger when somebody else played them. Caroline in Extract 130 below described her feelings for the machine:

“Caroline: It’s my machine and no-one else’s! Um, yeah um I’d get very pissed off if someone else was on it. Ah and I would actually hover behind that person til they moved. Ah keeping an eye on their credits. Ah yeah it was like it was mine. No-one else’s. Especially when you put all this money into it (laughter). It owed you money. Um, it’s like you have this sense that I bought it. Um, no one else could win on it. Ah, it was part of me. I would talk to it. I would pat it. Ah, I would rub it. Oh god (laughter). Ah I would clean it. Um, yeah so. Like it was a human really. Ah, I mean some people say you treat them like they’re your lovers. And in one way you could say it’s true. Um, you expected this thing to bring you happiness when nothing else did so.” Extract 130, Caroline.

In the above extract Caroline humanised the machine by calling it her “human lover” and described how she was affectionate towards it i.e. she rubbed and cleaned it. Just as in a human relationship, Caroline depended on the machine to bring her feelings of happiness. This suggested that respondents’ relationships in the non-gambling world were unfulfilling and that they were trying to achieve the positive emotions associated with relationships through playing the machines. The language of relationships was even used by respondents who had some understanding of how EGMs work (Denise, Extract 131).

Denise: It would have to have been my best friend. My lover basically. Um, even though I know and I understand I mean even though I know from working in the venue and knowing how the machines sort of operate. I, I how, how to fix them if something goes wrong. Um, that didn’t that had no
relevance to me whatsoever. No, it was just ok, go in there. You understand me. How can a bloody machines understand me? It doesn’t understand you, it’s just a stupid machine.” Extract 131, Denise.

Denise described above how she felt understood by the machine, which could have fulfilled an internal need to make a connection with someone/something.

7.5 Superordinate Theme 3: Hidden EGM Involvement

Respondents felt compelled to keep their gambling participation hidden from the world so they lied to and manipulated people close to them. Respondents reported how these behaviours were out of character and were used to conceal their gambling and maintain a sense of normality. Despite the lies and attempted concealment of their gambling respondents believed their friends and family were aware something was wrong. The subordinate theme Gambling-focused Behaviours also included how respondents lied to maintain their gambling, however, a more detailed description is provided here since it related to a more overarching theme of hidden EGM play.

7.5.1 Manipulation and lies

Respondents described how they lied in order to obtain finances to sustain their gambling; Rebecca and Danielle in Extracts 132 and 133 below describe this:

“Rebecca: The lies that came, I was borrowing money from my family, my mum and dad… ‘I haven’t got any money to pay bills’. I was earning good money but I was gambling it all.” Extract 132, Rebecca.

“Danielle: Um, you lie. You, you really do lie. Um, you um, ah, lying I think would be the absolute pits. And I was never brought up to lie. And I never did lie. But for those five years I certainly did lie.” Extract 133, Danielle.

Danielle implied that the urge to gamble was so strong that she acted against the values she was raised with. Respondents were so consumed with obtaining money to gamble that they began to engage in uncharacteristic behaviours. An example of this is
Brooke in Extract 134 below, when she described how she ‘schemed’ to get cash and would delay worrying about the consequences.

“Brooke: I would think a lot about where I was going to get money. How I was going to get money. Um, on occasion it would creep into my mind to take money. From people and pay it back. Um, not like saying I would pay their bills for example on my credit card if they gave me the cash and then having to pay the credit card. So I didn’t actually go and ever steal money from someone’s wallet. But I would take money to gamble but I would pay them pay their bill or whatever with credit cards. So I was always scheming how I was going to get my next lot of money.” Extract 134, Brooke.

Respondents hid their gambling by fabricating stories about how they were really spending their time. This demonstrated an awareness that they realised that others would not approve of their gambling which resulted in premeditated clandestine behaviours.

“Megan: I would [lie] I’d tell him I went over my nanna’s house or you know I was looking for a job or I went into the city or I’d just make something make something up. I hid it, I really, I was ashamed of what I was doing and I knew what I was doing was wrong and I didn’t want people to think badly of me. I didn’t want them to think I didn’t have my crap together. So I, I really really hid it, I really tried to hide it… It was the premeditation of you know well he’s not going to be home for another hour and a half so that’s all right I can sneak back over there just as long as I’m back you know and pretend I’d been doing something else. The sneakiness and the premeditation.” Extract 135, Megan.

Respondents manipulated relationships through lies and creating excuses so that they could gamble. The accumulation of lies became difficult to maintain and contributed to respondents living in a fabricated world. Brooke in Extract 136 below described how she manipulated her relationships and felt like she was living in a “dreamworld”:

“Brooke: Causing arguments… So I could get out of the house and go and gamble. So yeah, when I look back yeah, I used to cause a lot of arguments. And you know I could um, one was when he’d been drinking he was very
he used to get very agro. So it was easy to pick a fight with him. Easy to pick a fight. And so I’d say oh stuff you I’m going down the pub. I’m getting out of here and I’m going down the pub. And then he’d, he’d keep drinking at home. Occasionally he might come and find me. Um, but I used to pick heaps of fights to get out of there so I could go and play the pokies. I used to use it as an excuse so that I could go and enjoy myself. I used to lie heaps. Which was something I was never you know I was always brought up to be honest. So I became very dishonest. Totally out of character for me. I used to make up stories and um, sometimes I couldn’t remember what I’d said. And that um, and I got caught out a few times. Because I’d forgotten what I said. You tend to live in a lie. You tend to live in a dream a dreamworld and all you’re doing is lying and then you’ve got to work out what lies you’ve told what people. Um, and my head became just like a spin.” Extract 136, Brooke.

7.5.2 Social taboo

Problem gambling also remained hidden from friends and family in part because problem gamblers were ashamed of their behaviour. Respondents reported how they believed that their friends and family were aware of their problems but did not discuss it with them. Megan and Danielle in Extracts 137 and 138 below described this awareness:

“Megan: I think a few friends suspected it but they never said anything… Oh every time we went out for lunch you know I’d always go and put money in even if they weren’t doing it. It wasn’t a social thing it became something that took over for a while. Um, they’d be no, no I don’t wanna play, but I’d go in there and play them anyway…” Extract 137, Megan.

“Danielle: No. I think she [mother] might have suspected yeah um probably the last 6 months of her life but she never said anything.” Extract 138, Danielle.

One of the explanations provided for this lack of discussion related to personal characteristics of the involved individuals. Stephanie in Extract 139 below described how
she was too scared to discuss her gambling with her father, and how he was unlikely to confront her:

“Stephanie: My friends know I’m gambling um, my family kind of know but you know what I mean like I, I think they do know but I’m too scared to actually confront them about it. Like my dad especially. I think he may know there’s a problem but he’s a bit, he won’t direct, you know, contact with me and I won’t sort of you know say to him. It’s too scary.” Extract 139, Stephanie.

Respondents also expressed their own perception that gambling was ‘taboo’ by drawing the distinction between those whom they felt comfortable talking about their gambling and those they were not. Joanne (Extract 140 below) described how she would lie to people who were not part of her gambling world:

“Joanne: If it was somebody that I knew as part of my gambling world then that was fine. If it was somebody I knew as part of the other world that wasn’t good. Then I’d have to start lying my head off to try and cover being there. Um, and making up excuses and all that sort of stuff.” Extract 140, Joanne.

7.6 Discussion of the Effects of Problem Gambling and Uncharacteristic Experiences

The final component of the qualitative study aimed to explore problem gamblers’ reflections on the effect problem gambling had on their lives, and how problem gambling may have contributed to the development of any uncharacteristic behaviours. The subjective experience of the development of uncharacteristic cognitions and/or behaviours was embedded in the discourse surrounding how respondents’ gambling problems had affected their lives.

7.6.1 Psychological effects of problem gambling

Respondents discussed a number of mental health problems that they believed were due to their gambling involvement (Negative Psychological Effects of Problem Gambling). Individuals who had been involved in some form of therapeutic process (either through membership of Gamblers Anonymous or individual therapy) appeared to connect
uncharacteristic emotions/moods/behaviours to their problem gambling more easily than those who had not been through such a self-reflective process. However, respondents who had not participated in some form of therapy still recalled similar negative psychological effects that EGM play had on their lives.

EGM play appeared to influence how problem gamblers perceived themselves. Gambling initially had the ability to enhance their feelings of self-worth (dependent on obtaining free spins and winning); however, once an accumulation of losses occurred, the self-esteem and self-worth of participants reduced. There was an acknowledgement that these feelings of unworthiness led to depression the longer respondents were involved in gambling. Because many victims of abuse (like many of the respondents in the current sample) have impaired self-esteem and negative perceptions of themselves (Dolan, 1988), it is perhaps unsurprising the theme emerged to suggest that the EGMs’ ability to enhance their self-view encouraged further play. However, EGMs also appeared to have the opposite affect because an accumulation of losses (and debt) would result in negative perceptions of oneself.

Respondents’ moods were also dependent on the outcomes of EGM play. The initial excitement and focused attention on the EGMs produced a positive internal state, but once the money began to run out participants described feelings of anxiety. The respondent’s subjective within-session emotions were characterised by extreme polar emotions, for example, joy from wins and/or contentment when blocking out stressors, and anxiety and despair when losing. Dorion and Mazer (2001) also reported a theme that was characterised by emotional highs and lows associated with VLT play, which then developed into feelings of self-blame and despair when losses occurred. There was also some awareness that respondents’ mood states were altered outside of the gambling arena; they described more depressive moods and suicidal ideation, likely due to their financial debt. Other difficulties reported by problem gamblers included family, social and occupational dysfunction.

There were also other recollections by respondents that suggested they attributed their self-harming behaviours and other mental health problems to their problem gambling. In order to obtain funds for gambling some respondents were willing to engage in risky sexual practices. This form of risky behaviour was reportedly uncharacteristic and had only been used in response to their desperation to continue gambling.
Literature indicates that problem gamblers are at a higher risk of suicidal ideation and suicide attempts (e.g., Andrew, 1997; Blaszczynski & Farrell, 1998; Ledgerwood & Petry, 2004; Newman & Thomson, 2003). There is also some indication that the intensity of suicide ideation is associated with the severity of gambling problems and the use of gambling as an escape mechanism, as in the current sample (Ledgerwood & Petry, 2004).

7.6.2 Problem EGM gambling’s all consuming nature

Respondents perceived their EGM gambling to become their central focus and described how it became All Consuming. This theme embodied the degree to which respondents attempted to maintain their gambling habit, and the affect their involvement had on their financial resources and significant relationships. This ‘all consuming’ urge to gamble eventually became a ‘double bind’ whereby problem gamblers realised that the initial feelings of escape and contentment that they received from gambling had numerous negative consequences on their lives. It appeared that this experience reflected Jacobs’ (1986) and Jacobs et al. (1985) middle to end components of Stage 2 in the General Theory of Addictions. The middle to end components of Stage 2 activities often included consequences such as: isolation from significant loved ones, financial debt, contacts with the legal system and diminished psychological and physical health. The suicidal ideation and suicide attempts described by respondents in the current study, according to Jacobs et al. (1985), often occurs in Stage 3 which reflects a “rapid deterioration of the entire addictive pattern of behavior and a helpless plummeting into a state of total physical, social, and psychological collapse” (p. 275). Respondents also likened the depth of involvement with the EGM as like being in a relationship. This is consistent with Doiron and Mazer (2001) who reported a similar theme that during problem gamblers’ deepening involvement phase (when their gambling experiences were at their most intense), VLT play became the principal life focus of their participants.

The ‘all consuming’ nature of problem gambling was in some cases sustained by obtaining funds through sources out of character for the gambler i.e. stealing from family, friends and/or work places. These thefts were justified through a sense of entitlement and the rationalisation that the money was only being ‘borrowed’ because an inevitable ‘big win’ would allow the gambler to return the money.
Problem gamblers also reported that they became uncharacteristically unsocial and believed this was a result of their gambling. Family and social contacts were avoided in order to maintain respondents’ gambling habit. They also described how they Sacrificed Relationships in an attempt to maintain their gambling behaviours.

Relationships were ruined and/or negatively affected during the gamblers’ career because of the negative costs associated with gambling such as the loss of money, accumulation of debt and loss of trust. Many problem gamblers also developed a Relationship with the machine that enabled them to relax and connect with the machine through behaviours such as rubbing and touching the machine. Respondents’ displays of possessiveness, jealousy and affection towards EGMs suggested that they interacted with the machines like humans. Consistent with this is the findings reported by Doiron and Mazer (2001) that problem gamblers were trying to fill relational voids, and that with time the relationship with the machine became unbalanced and unsustainable. Shaffer (1996) also suggested, “it is the relationship of the addicted person with the object of their excessive behaviour that defines addiction” (p. 465 cited in Doiron and Mazer, 2001).

The level of debt experienced by problem gamblers was related to their personal circumstances and the extent of their gambling problems. Individuals with less severe gambling problems noticed that in order to sustain their gambling their standard of living declined. However, as their problem gambling developed, living expenses became overwhelming and in some cases they ended up homeless. The majority of respondents felt that the accumulation of debt and risky financial behaviour was out of character. To maintain their gambling and address increasing financial pressures respondents ‘borrowed’ money from significant others. Money was borrowed from significant others (with their consent), and respondents also took from joint accounts, wallets, etc without their knowledge. Due to the personal relationship the problem gambler had with the ‘lender’, respondents rationalised that the theft was justifiable because they intended to return the money once they had a ‘big win’ and believed they were entitled to the money anyway. This ‘borrowing’ behaviour in many cases contributed to the negative fallout within the relationship. However, the lies and concealment of their gambling suggested at some level respondents were aware their behaviour would not be supported by significant others.

Respondents also disclosed other illegal and/or out of character activities they engaged in to sustain their habit and pay off debts. Many of the methods used to obtain
funds were creative and dependent on their level of access. Some obtained store credit, and bought goods and then sold them at Cash Converters (second hand dealer) to provide funding, and others sold family heirlooms. Once personal avenues of financing the addiction were exhausted some respondents reported other (illegal) activities. Lahn and Grabosky (2003) suggested problem gambling is a risk factor for offending. Some respondents who held employment positions that allowed them access to money engaged in fraud and theft. They justified this theft with their belief that a ‘big win’ would allow them to return all borrowed money undetected. One participant was caught stealing from her workplace and had been given a suspended sentence. She described that once her new placement of employment was aware of her past (with no discrepancies found in the bookwork) she felt that she had permission to steal again and returned to her previous problem gambling behaviour. This behaviour in effect negated the psychological impairment defence, as she was able to control her behaviour when it was required.

Some respondents had considered and/or engaged in prostituting themselves to fund their gambling. There were also reports of stealing basic necessities such as food and clothing due to ongoing financial debt. The commission of illegal activities by problem gamblers is well cited in the literature and consists of mainly white collar embezzlement and fraud crimes in an attempt to fund the behaviour (e.g., Blaszczynski, 1994; Blaszczynski & Silove, 1996). Potenza et al. (2000) indicated that whilst most problem gamblers report financial and family problems, those who had committed crimes were more likely to be experiencing more severe gambling problems and had higher levels of debt. Blaszczynski and Silove (1996) reported those individuals with higher levels of psychosocial problems and who used emotional escape as their primary motivator, had committed illegal acts. The current sample of problem gamblers also used emotional escape as a primary reason to engage in gambling, and many had stolen to support their gambling habit.

7.6.3 Problem gambling: The hidden addiction

The concealment of EGM involvement emerged as an important element of the problem gambling experience and was the final superordinate theme formulated from the transcripts. To maintain the secrecy of their EGM participation a subordinate theme of Lies and Manipulation emerged and illuminated some of the methods respondents used to conceal their behaviour, and thus continue gambling. Lies were used to obtain money from
family and friends and to conceal their participation at venues. Respondents demonstrated an awareness that their behaviour would not be approved by significant others. The *Social Taboo* of problem gambling was also highlighted with respondents recalling how they delineated their gambling world from the non-gambling world. Gowen (1996) suggested that the stigma of losing encourages many people with gambling problems into the closet. Respondents indicated that they believed their friends and family were aware of their gambling problems, but never discussed this with them. This may be because of a social stigma surrounding problem gambling, the individual’s pride, and the unsympathetic reaction that this disclosure might entail if the person’s gambling became public.

7.7 Conclusions from the Qualitative Analysis of the Impact of Problem Gambling on Gamblers’ Lives and Behaviour

In summary, the problem EGM gamblers included in the current study believed that their excessive gambling participation had a negative effect on their psychological well-being. Gambling was perceived to further encourage problem gamblers’ negative self-view, and in some cases, worsened premorbid psychological conditions, such as anxiety and depression. Problem gambling was also believed to cause such negative psychological states in individuals who have not previously experienced them. The problem gamblers’ within-session mental states reflected the wins and associated ‘highs’, and losses and associated ‘lows’ that they experienced during EGM play. This eventually created a ‘double bind’ whereby problem gamblers eventually came to experience negative moods both when they lost on the machine, and also when they are unable to play. The findings also suggested that problem gamblers become so engrossed with their EGM play that they become ‘all consumed’, and as a result developed a number of uncharacteristic behaviours.
SECTION C: QUANTITATIVE INVESTIGATION OF PROBLEM GAMBLING

Chapter 8

Study 3

The Relationships between Psychological and Physiological Vulnerabilities and Problem EGM Gambling

8.1 Overview of Chapter 8

The current chapter summarises a quantitative study that was conducted to examine specific elements of Durand Jacobs’ General Theory of Addiction (1986). In particular, a variety of quantitative measures were employed that examined the psychological and physiological factors that have been hypothesised to predispose individuals to develop problem gambling. The current study also investigated the occurrence of dissociative-like experiences whilst playing EGMs, both due to the proposed importance of such experiences in Jacobs’ model (1986, 1988), and the emphasis on such experiences provided by participants’ in chapter six. An innovation of the current study is the examination of impaired control over gambling within the context of Jacobs’ (1986, 1988) model. The current study also gives specific attention to the coping styles that were employed by participants, and some of the variables that may have had the potential to buffer problem gambling i.e. self-esteem, task-focused coping and social support.

The chapter also describes the aims of the study and the methodology used to address these issues, and then summarises the results from a series of one-way analysis of variance (ANOVAs), and moderation and mediation hierarchical regressions. Three models that diagrammatically depict a vulnerability model of problem gambling based on Jacobs’ (1986, 1988) theory were also analysed through the use of Structural Equation Modeling (SEM). The first model tested was a basic model that solely addressed Jacobs’
General Theory of Addictions (1986) and attempted to replicate previous findings (Gupta and Derevensky, 1998), with the second model expanding on the original to include a construct that reflected trauma history. The final model included the construct of impaired control. The results from all of the analyses included in the study are then discussed.

8.2 The Need for Further Research that Examines ‘Vulnerable’ Subgroups of Gamblers

The literature review and qualitative chapters investigated the hypothesis that there is a subgroup of individuals more predisposed to the development of gambling problems than others, and that problem gambling has been conceptualised as a maladaptive coping mechanism (Blaszczynski & Nower, 2002; Jacobs, 1986; McCormick, 1994). The previous qualitative chapters provide initial support for the proposition that problem EGM gamblers use their gambling to fulfil certain psychological needs such as a ‘need to escape’, which is achieved through mood modification and feelings of being in a trance-like state during gambling. These qualitative findings are consistent with qualitative research conducted by Wood and Griffiths (2007a). The respondents identified how their gambling involvement and previous experiences influenced how they perceived themselves, for example, their negative life experiences contributed to their negative self-perceptions, as did their wins and losses. In addition to the effect poker machine gambling had on respondents’ identity and self-esteem, they recalled feelings of arousal during their within-session play. Both of these findings are consistent with elements of Jacobs’ (1986) General Theory of Addiction, which suggests that problem gamblers have early experiences that encourage feelings of self-doubt, and that gambling moderates arousal.

Gupta and Derevensky (1998) examined Jacobs’ General Theory of Addictions (1986) in adolescent gamblers, and reported a path analysis and logistic regression that supported the conceptualisation of adolescent problem gambling in terms of the theory. Kaufman (2002) also reported a study that addressed some of the physiological, social, and emotional variables in adolescent problem gambling using Jacobs’ (1986) theory as its framework. The study also examined a number of protective factors believed to mediate between different types of life stressors and problem gambling. Kaufman (2002) concluded that the results from the study provided support that problem adolescent gamblers possibly used gambling as a method of escape and regulating their arousal. To date, there is no Australian research known to the author that addresses the key elements of Jacobs’ model.
nor any of the variables that may be conceptually linked to the need to escape construct, for example, dissociation and coping styles.

8.3 A Potential Relationship between Impaired Control, Dissociation and Maladaptive Coping in ‘Vulnerable’ Gamblers?

The previous qualitative chapters indicated that problem gamblers are aware of how their feelings of control over gambling disintegrated during the course of their gambling careers. The construct ‘impaired control’ over gambling is a core feature in the current conceptualisation of problem gambling (Corless & Dickerson, 1989). Impaired gambling control has been linked to problem gambling on the basis of observations that problem gamblers progressively lose control over their gambling, whereby they demonstrate problematic behaviours such as chasing and spending more money than they originally intended (e.g., Corless & Dickerson, 1989; Delfabbro, 2008). However, the literature does not establish whether people experience a truly ‘clinical’ loss of gambling control, for example, losing complete volitional control of their behaviour. If problem gamblers do experience a loss of control in a clinical sense, then it needs to be established to what degree their gambling behaviours (and possibly their gambling enabling behaviours) are no longer under their volitional control. Despite the subjective nature of the reports by problem gamblers in the above-mentioned qualitative chapters, respondents’ insights, in addition to the state of the current literature, provide the basis for further research addressing the concept of impaired control in problem gambling.

Corless and Dickerson (1989) suggested that in order to obtain a deeper understanding of problem gambling, research is required to establish the variables that determine impaired control. Such variables may increase our understanding of the psychological mechanisms that constitute problem gambling. There has been no research to date that has systematically addressed how impaired control leads to problem gambling, and that also has introduced other variables with the potential to influence impaired gambling control (Dickerson, 1993). Research that addresses factors such as life event stressors, social support and coping styles has yet to be conducted to establish if they are necessary constructs in enhancing our understanding of impaired control in the development of problematic gambling (Dickerson, 1993). The current study examined the relationships between impaired control and a number of constructs that have been
previously implicated in the development of problem gambling: dissociation, maladaptive coping styles and life stressors/trauma.

8.3.1 The issue of impaired control and coping in gambling

Various theorists have postulated that gambling may be conceptualised as a maladaptive form of coping (see Chapter 2). Lightsey and Hulsey (2002) reported a stress-coping theory of addiction which posited that the use of effective coping strategies result in healthy/adaptive outcomes, and that conversely ineffective/maladaptive coping strategies contribute to the development of gambling problems. Thus, when people use effective coping skills they may be less inclined to gamble when stressed (Lightsey & Hulsey, 2002). Lightsey and Hulsey (2002) hypothesised that each of the currently identified coping styles - task, emotion and avoidant - may influence the relationship between stress and gambling. The stress-coping model of addiction has some support because stressful/traumatic events may be linked with the development of gambling problems when there is an inadequate repertoire of adaptive coping strategies (Coman et al., 1997; McCormick, 1994; Taber et al., 1987). McCormick (1994) proposed that gambling may be cued by triggering events (internal and/or external), and that it is the cognitive processing of these cues that leads to the selection of a coping strategy to overcome feelings of dysphoria. In a study conducted by Di Dio and Ong (1997) avoidance coping and the current level of subjective stress was reported to account for 43% of the variance in problem gambling. However, this study was limited methodologically by a lack of independence between coping and problem gambling; the coping measure consisted of items similar to the Diagnostic criteria of problem gambling (Shepherd & Dickerson, 2001).

In regards to the hypothesised link between impaired control over gambling and coping, the argument has been made that the use of adaptive coping skills may assist regular gamblers to control the ‘urge’ to gamble (Sharpe & Tarrier, 1993 cited by Shepherd & Dickerson, 2001). Shepherd and Dickerson (2001) linked the construct of impaired control and coping in response to similarities they observed in the addictions literature. The authors did acknowledge that there is little empirical evidence that supports a hypothesised link between coping and impaired control over gambling. However, there appears to be strong theoretical links between the two constructs, and the previously reported qualitative work also provides support for such a relationship.
A small number of studies have been reported in the literature investigating the proposed relationship between impaired control and coping. However, the instruments used to measure coping have limited the research conclusions. Shepherd and Dickerson (2001) reported that players with low control over their gambling used significantly more avoidance-focused coping in a gambling loss situation. This was also true for low control players in situations unrelated to their gambling (in both controllable and uncontrollable situations). However, the coping measure employed in this study did not allow for conclusions to be drawn about the coping style/disposition of the sample. Research that aims to address the dispositional nature of coping styles and impaired control in gamblers must use coping measures that are designed to evaluate dispositional rather than situational coping. Thus, the conclusion drawn in the Shepherd and Dickerson (2001) study that indicated players with low control over their gambling utilised an avoidance-coping style is misguided.

Scannell, Quirk, Smith, Maddern and Dickerson (2000) also investigated coping and self-control over gambling in a study with 232 female poker machine players. The authors proposed that women who reported low feelings of control over their gambling experienced higher levels of emotion-focused and avoidance-coping in response to a self-reported stressful event (as compared to a high control over gambling group). However, Shepherd and Dickerson (2001) reiterated that research that aims to address coping style and impaired control in gamblers requires a dispositional measure of coping. Therefore, Scannell et al.’s. (2000) conclusion that coping style was related to impaired control was inaccurate because the coping responses were measured in relation to a single stressful event i.e. situational coping. In the same paper Shepherd and Dickerson (2001) argued the importance of the coping instrument used in these kinds of studies, citing three other studies (Di Dio & Ong, 1997; McCormick, 1994; Scannell et al., 2000), which had made conclusions regarding the existence of a relationship between problem gambling and avoidance-coping. Shepherd and Dickerson (2001) argued that the conclusions were all based on coping measures that assessed a single stressful event, and suggested that the researchers would have been unable to control the stressful event, nor know the type of stressor that was being referred to by the participant. In an attempt to circumvent this limitation, the current study employed a dispositional coping measure that measured an individual’s coping style rather than a situational coping response.
8.3.2 Impaired control, dissociation, psychological distress and trauma history

The centrality of impaired control in problem gambling and its hypothesised theoretical link with coping, allowed for the consideration of other variables with the potential to influence impaired control, and thus the development of problem gambling. Shepherd and Dickerson (2001, p. 176) suggested that:

“Perhaps psychological variables that contribute to the erosion over gambling behaviour are similar to those implicated in the greater use of avoidance-focused coping; examples of these psychological variables are neuroticism (McCrae & Costa, 1986), low self-esteem (McCall & Struthers, 1994), and psychopathology (Vollrath et al., 1995).”

In accordance with this proposition comes the suggestion that perhaps other psychological phenomena that have been empirically linked with problem gambling may be related to impaired control, and hence problem gambling.

As previously discussed, the phenomenon of dissociation has been implicated in the development of problem gambling (Jacobs, 1986; Kofoed et al., 1997). This assertion is based on the premise that individuals with a greater dissociative experience, and/or those who experience more dissociative-like reactions during gambling are more inclined to develop problems (Kofoed et al., 1997). It theoretically follows that there may be a relationship between dissociation and impaired control in the development of problem gambling. The increased tendency to experience dissociation or dissociative-like experiences whilst gambling may encourage/enhance the gambler’s ability to lose control over their gambling behaviours. To date, there has been no empirical work that has investigated a proposed relationship between dissociation and impaired control in problem gambling. The logical question that may be raised if people do lose control over their gambling while in a dissociative state is whether problem gamblers are accountable for their actions. In other words: are there possible clinical and forensic implications if a relationship between impaired control and gambling exists? O’Connor and Dickerson (2003a) raised the issue of volitional control in their discussion of impaired control over gambling. The authors suggested that central to the notion of impaired control over gambling is the problem gambler’s inability to cease from engaging in a gambling activity
and then stop a gambling session. Problem gamblers’ control over their gambling may be further impaired if they experience a dissociative-like reaction during their play.

A potential relationship between dissociation and impaired control also suggests that research may need to establish whether experiences that are known to increase the likelihood of dissociation, such as trauma and childhood physical/sexual abuse, are related to impaired control in problem gamblers. There is evidence in the literature and chapter 5 to suggest that problem gamblers report traumatic experiences (e.g., Biddle, Hawthorne, Forbes, & Coman, 2005; Kausch, Rugle, & Rowland, 2006; Ledgerwood & Petry, 2006a; Scherrr et al., 2007).

8.4 The Potential Role of Social Support, Task-Orientated Coping and Self-Esteem as Buffers/Protective Factors in Problem EGM Gambling

Not everyone who plays poker machines develop problems, and whilst the hypothesis that some people may be more vulnerable to developing problems appears to have support, certain personal attributes may act as buffers or have protective qualities that impede the development of problem gambling. Kaufman (2002) reported that, despite the fact some problem gamblers demonstrate the ‘vulnerability-stress’ model prerequisite of certain vulnerabilities (for example physiological and psychological vulnerabilities) as hypothesised in Jacobs’ model (1986), some people do not develop addictions or other psychological problems. In addition, not everyone who employs maladaptive coping styles develop addictions. This suggests that personal dispositions may also influence the employment of stress-related coping strategies (Lazarus & Folkman, 1984). Thoits (1995) stated that the presence of various personal and/or situational variables may weaken/buffer negative consequences of stress on mental health. It is assumed under a ‘stress-buffer’ hypothesis that exposure to positive influences, for example, positive social support and adaptive forms of coping, weaken the effect of negative stressors. The current research examines social support, task-focused coping and self-esteem and if they moderate a relationship between depression and problem gambling. However, other variables may also moderate the development of problem gambling, for example, socio-economic status and positive life events (Kaufman, 2002).
Sharpe and Tarrier (1993) hypothesised that the difference between individuals who control their gambling and those who develop problems is related to the use of different coping strategies. Thus, some forms of coping are more adaptive or positive than others. Lightsey and Hulsey (2002) argued that, despite the complexity in determining which coping forms are beneficial, it is believed that:

“higher levels of task coping lead to positive outcomes, whereas higher levels of emotion and avoidant-disengagement coping leads to negative outcomes, increasing the likelihood that persons will engage in addictive behaviours when faced with stress” (Chung, Langenbuchar, Labouvie, Pandina, & Moos, 2001; Wills, Sandy, Yaeger, Cleary, & Shinar, 2001 cited by Lightsey & Hulsey, 2002 p. 203).

Thus, coping is believed to be positive or adaptive when problem or solution focused strategies are employed because they provide a variety of options to the individual (Kaufman, 2002). Therefore, individuals who employ more task-focused coping styles may be less likely to use gambling as a form of escape.

Social support was also examined in the current study because research has indicated that it can act as a coping resource and buffer stressful life events and psychological and physical symptoms (Zimet, Dahlem, Zimet, & Farley, 1988). Thompson, Flood and Goodvin (2006) argued that social support provides support for healthy psychological functioning.

“social support consists of social relationships that provide (or can potentially provide) material and interpersonal resources that are of value to the recipient, such as counselling, access to information and services, sharing of tasks and responsibilities, and skill acquisition” (Thompson, 1995, p. 43).

Accordingly, individuals who are able to seek and maintain personal/emotional support through friends and family may be less likely to develop gambling problems. The literature suggests that social support is stress preventative and stress buffering because it decreases the effect of stressors through the enhancement of positive coping. Thus, a high level of perceived social support is thought to enable individuals to use more adaptive coping skills.
Research has concluded that perceived social support is more important than actual social support because the individual believes that they have a support system on which they can rely (e.g., Barrera, 1986; Jackson & Warren, 2000; Thompson et al., 2006). Perceived social support was examined in the current study based on these findings and Dickerson’s (1993) comments regarding the potential influence that social support may have in the development of problem gambling. In addition, McCormick (1994) claimed that most problem gamblers have poorly developed skills in looking for personal and/or emotional support.

In addition to the stress buffering/protective functions of social support and positive coping strategies is the potentially positive variable of self-esteem. In the previously reported qualitative chapters the problem gamblers interviewed had low levels of self-esteem. This is unsurprising given that the respondents’ personal histories were characterised by high levels of childhood trauma and these experiences have previously been linked with low levels of self-esteem (Fox & Gilbert, 1994; Tyler, 2002). Self-esteem is commonly considered to be basic to an individual’s identity (Greenberg, Lewis, & Dodd, 1999). Greenberg, Lewis, and Dodd (1999) reported that self-esteem has rarely been studied as a predictor of addiction and suggested that:

“low self-esteem might lead some individuals to seek temporary relief through ‘mind-altering’ substances and activities, and, in turn, addiction could lead to feelings of loss of control, feelings of failure, and lowered self-esteem. Whether self-esteem functions as a cause of a result of addiction, or both, it should be negatively related to levels of addiction…” (p. 566).

Self-esteem was not related to the total addiction score in Greenberg et al’s. (1999) study. However, the total addiction score used in Greenberg et al’s. (1999) study was scored across four addictive areas (alcohol, caffeine, chocolate, cigarettes) and four activities (exercise, gambling, internet use, television and video games). A likert scale over 4 levels of addiction was employed: craving, withdrawal, lack of control and tolerance. Greenberg et al’s (1999) measurement of total addiction did not provide an adequate measure of problem gambling or indeed addiction in general. The sample also reported little evidence of gambling addiction. Due to these limitations research is needed that utilises a more standardised measure of addiction, and in terms of the current study, problem gambling.
Greenberg et al. (1999) allowed that a relationship between self-esteem and addiction might be demonstrated in individuals who have more serious problems with the variables that were measured in their study. Since no strong conclusions could be made from Greenberg et al.’s (1999) study, the hypothesis that self-esteem may have protective/buffering effects on the development of problem gambling should be further investigated.

8.5 Aims of the Current Study

The central purpose of the current study was to collect quantitative data on some of the psychological and physiological vulnerabilities that may predispose a subgroup of individuals to develop problem gambling behaviours. More specifically, the current study investigated the presence of psychological vulnerabilities such as traumatic and stressful life event histories, and psychological distress in a community sample of South Australian EGM gamblers. Physiological vulnerability was measured by examining levels of arousal. The study aimed to empirically test a vulnerability model of problem gambling.

The study expands on previous research findings that have indicated that individuals who have histories of trauma and who have previously experienced forms of dissociation are more predisposed to developing addictions (Ross-Gower et al., 1998). This study aimed to contribute to the literature on the differing forms of dissociative symptoms EGM gamblers experience whilst gambling. It also investigated whether there is a positive relationship between dissociative experiences and impaired control whilst gambling. At the present time, there is considerable debate as to the extent to which gambling can lead to experiences of dissociation in a true clinical sense, and whether these experiences of dissociation genuinely influence people’s ability to control their gambling behaviours. Thus, one practical implication of this work is to gain an understanding of the extent to which gambling can influence people’s mental states as it might be assessed in legal decision making, i.e. does gambling cause a genuine disruption to people’s capacity to make rational decisions?

The present study also explored the coping styles of gamblers due to the conceptualisation of gambling as a means of coping with experiences of trauma and abuse and/or as a method of reducing levels of anxiety and depression (Lesieur & Blume, 1991). Previous work has also found that people experiencing stress and anxiety are more likely to
focus their attention on low-skill gambling such as EGMs. One explanation for this behaviour is that gambling provides an individual with the means to divert and narrow their attention to EGM which, in turn, alleviates negative mood (Getty et al., 2000). Data was also obtained on variables that may have the potential to mediate/moderate gambling severity.

The current study also aimed to address the potential relationships between impaired control in problem gambling with a number of psychological constructs (coping style, trauma history, dissociation, and current psychological state).

8.6 Study Hypotheses

1. Problem gamblers will be more likely than non-gamblers and moderate risk gamblers to score higher on measures of dissociation, arousal and substance use.

2. Problem gamblers will be more likely than non-gamblers and moderate risk gamblers to obtain high scores on measures of traumatic life events, childhood maltreatment, negative affect (symptoms of depression, anxiety and stress) and emotion-focused coping.

3. Problem gamblers will endorse more items on the traumatic life events scale than will non-gamblers and moderate risk gamblers.

4. Non-gamblers and moderate risk gamblers will have higher levels of self-esteem and social support than problem gamblers.

5. There is a positive relationship between the frequency of negative life events, dissociative experiences and impaired control and the severity of gambling involvement.

6. More emotion focused and avoidant coping styles will be utilised by individuals with high levels of gambling severity.

7. Task-focused coping, social support and self-esteem will moderate the relationship between depression and problem gambling i.e. for higher levels of task-focused coping, social support and self-esteem, depression will have a lessor relationship to problem gambling.
8. Impaired control will be significantly related to coping styles, dissociation, psychological distress and trauma history.

9. Impaired control will mediate the relationship between depression and problem gambling.

10. Impaired control will mediate the relationship between within-session dissociation and problem gambling.

8.7 Methodology

8.7.1 Sample characteristics

People aged 18 years or older and living in the local community (Adelaide metropolitan area) were recruited for the current study via a standard advertisement placed in three local newspapers (The Messenger). Inclusion criterion required participants to be eighteen years or older to participate (Delfabbro & Winefield, 1999). Participants were also required to have played poker machines at least twice a month over the past 12 months. A total of 211 members of the general South Australian public inquired about the study and a total of 190 participated (120 females, 70 males). Participants ranged in age from 19 to 85 years, with a mean age of 50.71 (SD = 14.18).

Demographic information on socio-economic status, nationality and relationship status was obtained via a questionnaire. Socio-economic status was indirectly measured by level of education obtained, current work status, as well as average household income per year.

The majority of participants were born in Australia (72.6%), and 20.5% were born in the United Kingdom or New Zealand. Just under half of the participants were married (43.7%) and one fifth of participants had never married (20%). Table 8.1 presents frequency information about the country of birth of participants and their relationship status.
Table 8.1
N (%) of people in each country of birth (N= 189) and marital status category (N = 190)

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>138</td>
<td>72.6</td>
</tr>
<tr>
<td>United Kingdom / NZ</td>
<td>39</td>
<td>20.5</td>
</tr>
<tr>
<td>Europe</td>
<td>8</td>
<td>4.2</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>83</td>
<td>43.7</td>
</tr>
<tr>
<td>Separated</td>
<td>12</td>
<td>6.3</td>
</tr>
<tr>
<td>Widowed</td>
<td>8</td>
<td>4.2</td>
</tr>
<tr>
<td>Living with partner</td>
<td>16</td>
<td>8.4</td>
</tr>
<tr>
<td>Divorced</td>
<td>33</td>
<td>17.4</td>
</tr>
<tr>
<td>Never married</td>
<td>38</td>
<td>20.0</td>
</tr>
</tbody>
</table>

In relation to participants’ education status, over a third (39.5%) indicated that they had left school after the age of 15 years, with under a quarter (23.2%) of participants indicating they had left school at the age of 15 or younger. Over a quarter of participants indicated that they were retired (26.3%) or unable to work (20%). Approximately half of the participant’s household income was $20,000 or below (4.37%). Table 8.2 provides frequency information regarding participants’ socio-economic status.
Table 8.2
*Number (%) of participants in each socio-economic indicator category (N = 190)*

<table>
<thead>
<tr>
<th>SES Indicator Variable</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still at school</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Left school &lt;Year10</td>
<td>44</td>
<td>23.2</td>
</tr>
<tr>
<td>Left school after Year10</td>
<td>75</td>
<td>39.5</td>
</tr>
<tr>
<td>Left after 15 yrs &amp; still studying</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>Trade/ apprenticeship</td>
<td>24</td>
<td>12.6</td>
</tr>
<tr>
<td>Certificate/ diploma</td>
<td>34</td>
<td>17.9</td>
</tr>
<tr>
<td>Bachelor or higher</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Work Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full time</td>
<td>23</td>
<td>12.1</td>
</tr>
<tr>
<td>Unemployed</td>
<td>15</td>
<td>7.9</td>
</tr>
<tr>
<td>Retired</td>
<td>50</td>
<td>26.3</td>
</tr>
<tr>
<td>Unable to work</td>
<td>38</td>
<td>20.0</td>
</tr>
<tr>
<td>Part time/ casual</td>
<td>37</td>
<td>19.5</td>
</tr>
<tr>
<td>Home duties</td>
<td>16</td>
<td>8.4</td>
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<tr>
<td>Student</td>
<td>6</td>
<td>3.2</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Household income ($)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 12,000</td>
<td>38</td>
<td>20.0</td>
</tr>
<tr>
<td>12,001-20,000</td>
<td>45</td>
<td>23.7</td>
</tr>
<tr>
<td>20,001-30,000</td>
<td>35</td>
<td>18.4</td>
</tr>
<tr>
<td>30,001-40,000</td>
<td>25</td>
<td>13.2</td>
</tr>
<tr>
<td>40,001-50,000</td>
<td>12</td>
<td>6.3</td>
</tr>
<tr>
<td>50,001-60,000</td>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>60,001-80,000</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>80,001 +</td>
<td>12</td>
<td>6.3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>7</td>
<td>3.7</td>
</tr>
</tbody>
</table>

8.7.2 Procedure

Advertisements were placed in three local papers with the contact details of the researcher so that potential participants could phone if they wished to participate in the
Once contact was made with the potential participant, their name and address was recorded so that a questionnaire could be sent. Participants were also asked to complete a simple screening survey that requested how many times they had played pokies each month in the previous 12 months. A number of participants incorrectly informed the researcher of the number of times they gambled on EGMs as part of the screening questions, which was evident when they answered the frequency of gambling questions in the survey. Due to the small number of people not gambling at least twice a month over the past 12 months, their results were included in the study because they were not substantially different to participants who did report playing only twice a month. Each participant was then sent an information sheet (Appendix C), questionnaire (Appendix D) and independent complaints form. All of the participants were assigned an identity number. Upon the return of the questionnaire, each questionnaire had the initial tracking number destroyed and was allocated a random number. Also upon the return of the completed survey participants were posted a $25 ColesMyer gift voucher (non-redeemable for cash) and a thank you letter (Appendix D) in appreciation for their time and effort.

8.7.3 General survey design

A comprehensive survey was constructed to address the aims of the current study. Demographic information and participants’ participation across a number of gambling modalities was obtained from participants (based on the South Australian Department for Families and Communities, 2006, demographic questions). Questions also asked whom participants generally gambled with and their perception of their social network’s gambling involvement. The nine diagnostic items from the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) were included as the measure of problem gambling. Psychological measures were included to establish participants’ coping styles, sensation-seeking tendencies (questions corresponding to arousal levels), and control over gambling and dissociative tendencies. Two measures were included to investigate childhood and life trauma, and the psychological adjustment of participants was also addressed through current measures of depression, anxiety and stress. Participants’ substance use was also assessed in the survey. Scales measuring self-esteem and social support were included to determine if they acted as protective factors against problem gambling behaviours.

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1 Svetiera and Walker (2009) argued that the CPGI is a measure of pathological gambling.
8.7.4 Measures

8.7.4.1 Demographics

Participants were asked to complete a self-report questionnaire consisting of demographic questions: age, gender, education level, relationship status, annual gross income and country of birth. These items were included in the Gambling Prevalence in South Australia 2005 Report (South Australian Department for Families and Communities, 2006).

8.7.4.2 Gambling participation

Participants were asked questions in relation to how often they participated in a number of different gambling activities, with whom they gambled, and their history of poker machine gambling.

8.7.5 Psychological measures

8.7.5.1 The Canadian Problem Gambling Index

The nine diagnostic items from the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) were included in the current survey. Participants were asked to respond to a series of items relating to gambling impacts and behaviours in the previous 12 months. Each item was scored on a 4 point scale where 0 = never, 1 = sometimes, 2 = most of the time, and 3 = almost always. Gamblers are categorised on the basis of their scores into non-problem gamblers (score of 0), low risk gambling (score of between 1 and 2.5), moderate risk gambling (score between 3 and 7.5) and problem gambling (score of between 8 and a maximum of 27). The Cronbach’s Alpha for this scale within the current sample was very good (α=0.93).
8.7.5.2 Scale of Gambling Choices

The Scale of Gambling Choices (Dickerson & O’Connor, 2003a) comprises 18 statements that are designed to assess impaired control over gambling behaviour during the previous 12 months. The shorter version O’Connor and Dickerson’s (2003a) consist of only 12-items and has been found to have good internal consistency and was included in the current study. Eight items of the scale reflect an individual’s ability to control their gambling (e.g., “I’ve been able to gamble less often when I’ve wanted to”), six items refer to an individual’s ability to set limits on their gambling (e.g., “I tried to spend less on my gambling”), and four items reflect their failure to cease gambling (e.g., “I have found it difficult to limit how much I gamble”). Participants are asked to respond to the statements as reflecting how true they are for them whilst they are gambling. Responses are scored on a 5-point scale, 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always. Items three, four, five, six, eight, nine, eleven and twelve are reversed scored. The higher the score on this measure relates to a greater the level of self-reported impaired control. However, the scale does not provide clearly identified cut off scores indicating when there may be a problem. The Cronbach’s Alpha for this scale in the current sample was very good (α=0.91).

8.7.5.3 Depression, Anxiety and Stress Scale 21

Participants completed the Depression, Anxiety and Stress Scale (DASS) as a measure of depressive, anxiety and stress symptomology (Lovibond & Lovibond, 1995). This scale conceptualises the constructs of depression, anxiety and stress as existing along a continuum of severity. The scale is based on the individual’s feelings of each of the constructs over the last seven days.

The DASS 21 (Lovibond & Lovibond, 1995) is a 21-item scale that consists of three subscales that assess the core symptoms of depression, anxiety and stress (7 items for each subscale). For each statement participants are required to indicate how relevant the statement is for the past week. The rating scale is as follows: 0 = did not apply to me at all, 1= applied to me to some degree, or some of the time, 2= applied to me to a considerable degree, or a good part of time and 3= applied to me very much, or most of the time. This scale conceptualises depression, anxiety and stress as existing on a continuum of severity. However, the DASS Manual provides cut-off scores for defining mild, moderate, severe
and extremely severe scores for each of the three subscales. Scores on the depression subscale are categorised as mild for scores falling between 10-12, moderate for scores falling between 13-19, severe for scores falling between 20-26 and extremely severe for scores 27 and above. Scores on the anxiety scale are categorised as mild (scores 7-9), moderate (scores 10-14), severe (scores 15-19) and extreme (scores of 20 and above). The stress subscale is classified into mild (scores 15-17), moderate (scores 18-25), severe (scores 26-33) and extreme (scores of 34 and above).

The depression subscale included items such as “I couldn’t seem to experience any positive feeling at all”, “I felt that I had nothing to look forward to” and “I found it difficult to work up the initiative to do things”. The Cronbach’s Alpha for the depression subscale (7 items) was acceptable at 0.93. The anxiety subscale of the DASS addressed participants’ experience of anxiety symptoms over the past week and included items such as “I was aware of dryness in my mouth”, “I experienced breathing difficulty” and “I was worried about situations in which I might panic and make a fool of myself”. The Cronbach’s Alpha for the anxiety subscale (7 items) was good at 0.88. The stress subscale of the DASS focused on symptoms of stress during the past week and included items such as “I found it hard to wind down”, “I tended to overreact to situations” and “I felt that I was rather touchy”. The Cronbach’s Alpha for the stress subscale within the current sample was very good (α=0.91).

8.7.5.4 Life Stressor Checklist-Revised

The Life Stressor Checklist-Revised (Wolfe, Kimerling, Brown, Chrestman, & Levin, 1996) is a 30-item self report measure of traumatic and stressful life experiences and is particularly sensitive to the needs of women. Some examples of the traumatic life events included in the checklist participants may have experienced include “serious disaster”, “serious accident”, “been sent to jail”, “divorced”, “emotionally abused or neglected”, “physically neglected’ and “seen violence between family members”. The checklist meets both criterion A and B for PTSD as specified by the DSM-IV. For each of the 30 statements individuals are required to indicate if they have ever experienced the stressor, the age when this occurred, and how much it had affected them in the past year (using a rating scale between 1= not at all and 5= extremely). For stressors that are specifically related to DSM-IV criterion individuals are also asked if they believed they or someone else could have been killed or seriously harmed, and if they experienced feelings
of intense helplessness, fear or horror. These additional questions are asked to meet DSM-IV criterion B. The Life Stressor Checklist- Revised has three scoring options. The first is to assign one point to each positively endorsed stressor and to calculate a total score ranging from 0-30. The second scoring option is to obtain a subjective rating of how affected their life has been in relation to the life stressor by assigning weights to each of the endorsed life stressors. The last scoring option is to score in accordance to the stressors that meet DSM-IV criterion. The first scoring option was used in the current study since the majority of participants did not complete enough of the additional questions for any further analysis i.e., there was a lot of missing data for the additional scoring questions. The Cronbach’s Alpha for the total number of positive stressors endorsed (30 items) within the current sample was acceptable (α=0.78).

8.7.5.5 Child Abuse and Trauma Scale

The Child Abuse and Trauma Scale (CAT scale) (Sanders & Becker-Lausen, 1995) is a 38-item that assesses three intercorrelated factors that reflect: negative home atmosphere/neglect, sexual abuse and punishment. These three factors have been identified using oblique rotation, with the negative home atmosphere/neglect factor reflecting the negativity of the home environment. The second factor related to sexual abuse and the third punishment (Sanders & Becker-Lausen, 1995). The CAT scale assesses a construct termed psychological maltreatment, referring to the damaging components that underlie and connect abuse and neglect. The aim of the scale is to measure an individual’s subjective perception of the degree of trauma they experienced during their childhood (Sanders & Becker-Lausen, 1995). The wording of all of the items has been carefully structured to cause minimal distress and the name of the scale is changed to the ‘Home Environment Questionnaire’ when given to participants. For each question respondents are asked to indicate how often the statement was true for them when they were a child or teenager. Each of the questions were related to how both of their parents behaved. When these behaviours were different between the two parents, the individual is asked to respond in terms of the parent whose behaviour was the more severe. The response scale is as follows: 0= never, 1= rarely, 2=sometimes, 3= very often and 4= always. Subscale scores can be calculated for each specific dimension of maltreatment and/or an overall score can be calculated. The Negative Home Atmosphere/Neglect (NEG) subscale has 14 items: 2, 3, 7, 10, 11, 14, 16, 19, 27, 30, 31, 33, 36, and 38. The Sexual abuse subscale (SA) and the punishment (PUN) subscale comprised 6 items each (items 9, 13, 15, 26, 29, 35 and 4, 5, 6, ...
The overall CAT Scale score and each of the subscales scores are mean scores derived by dividing its total score by its number of items. The Cronbach’s Alpha was very good for the overall scale (α=0.93).

The negative home environment/neglect subscale of the CAT scale included items such as “Did your parents verbally abuse each other?” “Did you ever think you wanted to leave your family and live with another family?” and “Was your childhood stressful?” The Cronbach’s Alpha for the negative home/neglect subscale (14 items) within the current sample was acceptable (α=0.92). The sexual abuse subscale of the CAT scale included items such as “Did your relationship with your parents ever involve a sexual experience?” “Did you have traumatic sexual experiences as a child or teenager?” and “Did you ever witness the sexual mistreatment of another family member?” The Cronbach’s Alpha for the sexual abuse subscale within the current sample was acceptable (α=0.80) and the punishment subscale (α= 0.70). The punishment subscale included items such as “When you were punished as a child or teenager, did you understand the reason you were punished?” and “When you didn’t follow the rules of the house, how often were you severely punished?”

8.7.5.6 Arnett’s Sensation Seeking: Intensity Subscale

The intensity subscale of Arnett’s Sensation Seeking scale (AISS; Arnett, 1994) consists of 10 items that assess the personality trait of sensation seeking (more specifically the intensity of the stimulation of the senses) in addition to general items involving the intensity of experience. Examples of items included in the scale include “When the water is very cold, I prefer not to swim even if it is a hot day” and “In general I work better when I’m under pressure”. The scale has been found to correlate highly with physical arousal levels. Respondents are asked to respond on a likert type format (1 = describes me very well, 2 = describes me somewhat, 3 = does not describe me very well, 4 = does not describe me at all). Higher scores on this measure indicate higher sensation seeking. The Cronbach’s Alpha for this scale within the current sample was unacceptable (α=0.56) and results from this scale should be viewed with caution.
8.7.5.7 Dissociative Experiences Scale II

The Dissociative Experiences Scale II (Bernstein Carlson & Putnam, 1993) is a brief (28 item) self-report trait measure of the frequency of dissociative experiences during daily living. Examples of items included in the DES II include “Some people find that they are sometimes able to ignore pain” and “Some people find evidence that they have done things that they do not remember doing”. Three factors have been identified by the DES II and are: 1) Amnesic dissociation 2) Absorption and imaginative involvement 3) Depersonalisation and derealisation. Respondents are asked to respond by circling the appropriate percentage on a scale ranging from 0 to 100 (by tens) that describes how best the statement reflects their experience (specifying when they are not under the influence of alcohol or drugs). The scale ranges from 0% (never) of the time to 100% (always) of the time. The DES II is not a diagnostic tool. A total score for the entire scale was calculated by averaging the score for all items (i.e. add all items and divide by 28). High scores do not necessarily reflect psychopathology and norms are provided in the scoring manual. The Cronbach’s Alpha for this scale was very good within the current sample (α=0.95).

8.7.5.8 Alcohol, Smoking and Substance Involvement Screening Test

The Alcohol, Smoking and Substance Involvement Screening Test (Henry-Edwards, Humeniuk, Ali, Poznyak, & Monteiro, 2003) is a brief self-report screening questionnaire about psychoactive substance use developed by the World Health Organisation. The ASSIST comprises of eight questions that specifically assesses substances the individual has 1) used in their lifetimes and during the past 12 months 2) the problems they’ve experienced in relation to their substance use 3) their current and future risk of harm 4) their dependence on the substance and 5) their use of injecting drugs. The ASSIST has been found to distinguish between individuals who are 1) low risk substance users 2) individuals who are dependent and 3) those who are at risk of developing problems and are already experiencing problems. Scores can indicate those individuals who are at low risk, moderate risk and high risk for alcohol use and all other substances. Alcohol use scores falling between 0-10 are indicative of a low risk of problems associated with alcohol use, scores falling in the range of 11-26 suggest a moderate risk of harm is associated with their usage and is an indication of harmful use, and scores of 27+ indicate a high risk of dependence with probable health, social, financial, legal and relationship problems due to their usage. The cut of scores for all other substances is: low risk in the
range of 0-3, moderate risk 4-26 and high risk scores of 27 and above (Humeniul, et al. 2008). The Cronbach’s Alpha for this scale within the current sample was acceptable at 0.93. Each of the Cronbach’s Alpha’s for the subscales were as follows: tobacco $\alpha=0.88$, alcohol $\alpha=0.83$, cannabis $\alpha=0.87$, cocaine $\alpha=0.56$, amphetamines $\alpha=0.92$, inhalants $\alpha=0.60$, hallucinogens $\alpha=0.66$, sedatives $\alpha=0.80$ and opioids $\alpha=0.70$.

8.7.5.9 Jacobs’ Dissociative Experiences Questions (1988)

Jacobs (1988) devised four questions to investigate experiences of dissociation whilst gambling on a 5-point likert scale ranging from never having the experience, to frequently having the experience during gambling. The first question aims to determine if gamblers experience trance like states whilst gambling: “After a gambling episode, did you ever feel like you’d been in a trance?” The second question, “When you gambled did you ever feel like you had taken on another identity?” seeks to establish if gamblers experience alternate identities whilst gambling. The third question focuses on experiences of depersonalisation, “While gambling did you ever feel like you were outside yourself watching yourself gamble?” The fourth question tries to capture experiences of amnesia that may occur during gambling: “Have you ever experienced a memory blackout for a period when you had been gambling?” These questions are regularly used in research to investigate dissociative experiences whilst gambling. A total score was calculated for each of the four dissociation questions by scoring 0= never, 1= rarely, 2= occasionally, 3= frequently, and 5= always. A total Jacobs’ dissociation score was then calculated by totalling each of the scores for the four dissociation questions. The Cronbach’s Alpha for this scale within the current sample was very good ($\alpha=0.83$).

8.7.5.10 Multidimensional Scale of Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988) is a self report measure that contains 12 items of subjectively perceived social support that fall in three subscales: family, significant other and friends. Each item is scored on a 7-point likert scale that ranges from strongly disagree (score of 0) to strongly agree (score of 7). The Cronbach’s Alpha for this scale (12 items) in the current sample was very good ($\alpha=0.95$).
The family support subscale of the MSPSS includes items such as “My family really tries to help me” and “I can talk about my problems with my family”. The Cronbach’s Alpha for the family support subscale (4 items) was very good at 0.96. Examples of items included in the friends support subscale of the MSPSS include “I can count on my friends when things go wrong” and “I have friends with whom I can share my joys and sorrows”. The Cronbach’s Alpha for this subscale (4 items) within the current sample was very good (α=0.96). The significant other subscale included items such as “There is a special person who is around when I am in need” and “I have a special person who is a real source of comfort to me”. The Cronbach’s Alpha for the significant other support subscale (4 items) was very good (α=0.95).

8.7.5.11 Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (Rosenberg, 1989) is a 10-item scale that measures self-esteem. Respondents are asked to respond on a four-point scale that ranges from strongly agree to strongly disagree. Items 3, 5, 8, 9 and 10 are reverse scored. Examples of items included in the scale include “I feel that I’m a person of worth, at least on an equal plane with others” and “I am able to do things as well as most other people”. No cut off scores to identify high and low self-esteem were provided. Higher scores on the scale reflect higher levels of self-esteem. The Cronbach’s Alpha for this scale within the current sample was very good (α=0.93).

8.7.5.12 Coping Inventory for Stressful Situation

The Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990) comprises 48-items designed to assess an individual’s reaction to various stressful, difficult or upsetting situations. Each item is scored on a 5-point likert scale ranging from 1 = not at all and 5 = very much. The measure assesses three coping styles: task coping, emotion focused coping and avoidance coping (with a further distinction of distraction and social diversion made as avoidance coping styles). Scores are converted into T scores.

The task focused coping subscale of the CISS includes items such as “Schedule my time better”, “Focus on the problem and see how I can solve it” and “Try to be organised so I can be on top of the situation”. Examples of items included in the emotion focused coping subscale include “Take it out on other people” and “Get angry”. The avoidance
subscale of the CISS included items such as “Watch TV”, “Take some time off and get away from the situation” and “Phone a friend”. Within the avoidance subscale were two further distinctions of distraction (8 items) and social diversion avoidance (5 items) coping styles. Examples of these items include “See a movie” and “Talk to someone whose advice I value” respectively. All of the Cronbach’s Alphas for the subscales in the current sample were very good and ranged from $\alpha=0.79$ to $\alpha=0.92$.

A summary of the measures included in the study is provided in Table 8.3.
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Measure</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Problem Gambling Index (CPGI)</td>
<td>Assists in the classification of gambling behaviours.</td>
<td>Ferris &amp; Wynne (2001)</td>
</tr>
<tr>
<td>Life Stressor Checklist-Revised</td>
<td>Screen for life events that could be classified as criterion A for PTSD and other stressful events that are unlikely to be traumatic. Also assessing criterion B for PTSD.</td>
<td>Wolfe, Kimerling, Brown, Chrestman &amp; Levin (1996)</td>
</tr>
<tr>
<td>Coping Inventory for Stressful Situations (CISS)</td>
<td>Assesses coping styles: avoidant, emotion and task orientated coping.</td>
<td>Endler &amp; Parker (1990)</td>
</tr>
<tr>
<td>Arnett’s Sensation Seeking: Intensity subscale</td>
<td>Subscale of sensation seeking that correlates highly with other arousal scales.</td>
<td>Arnett (1994)</td>
</tr>
<tr>
<td>Jacobs’ dissociative experiences questions</td>
<td>Provides an indication of the frequency of dissociative experiences whilst gambling.</td>
<td>Jacobs &amp; Kuley (1988)</td>
</tr>
<tr>
<td>Rosenberg Self Esteem Scale</td>
<td>Measure of self-esteem</td>
<td>Rosenberg (1989)</td>
</tr>
</tbody>
</table>
8.7.6 Ethical considerations

The issue of informed consent was addressed by providing participants with an information sheet that described: the overall purpose of the study, what was required of them, and any potential risks/benefits associated with participation in the study. Participation was voluntary and participants were informed they were able to withdraw from the study at any time (Kvale, 1996).

The confidentiality of participants was preserved by not reporting private identifying data through the process of randomly allocating each questionnaire with an identification number. Data were stored in a secure facility and was only available to the researcher. Participants were informed they could obtain feedback if they so desired. No participant requested further feedback.

The sensitive nature of some of the study questions had the potential to cause minimal psychological distress. The information sheet supplied participants with contact numbers of counselling services and the Gambling Helpline in case they experienced any psychological distress as a result of participating in the study. To the researcher’s knowledge no one experienced adverse consequences from participating in the study.

8.8 Overview of Results Section

The results section of the survey data is presented in sections. The participants’ levels of gambling participation across a range of gambling modalities, with gender and age differences are first described. The sample is then categorised into groups of gambling severity (e.g., no/low risk, moderate risk and problem gambling groups as classified by the CPGI). Prevalence data is provided on the participants’ self-perceptions regarding their involvement with problem gambling in terms of both their personal experience and that of family members and/or friends. The next component of the results describes the within-session experiences and the behaviour of participants.

The final section of the results summarises the analyses undertaken to investigate the hypotheses of the study. Descriptive statistics and results from a series of one-way ANOVAs are provided in an attempt to compare the levels of emotional and physiological functioning across participants as classified by the CPGI. Similar analyses are then
conducted for variables that were conceptualised as potential protective factors, for example, social support, task-focused coping and self-esteem. A series of moderation analyses are also conducted to determine if the protective factors moderate the relationship between depression and problem gambling. Two mediation analyses are also reported to examine whether impaired control mediates the relationship between depression and problem gambling and Jacobs’ need to escape and problem gambling. Three Structural Equation Models (SEMs) are then presented, diagrammatically depicting relationships between variables. The first SEM model replicates a vulnerability model of gambling based on Durand Jacobs’ General Theory of Addiction as developed and reported by Gupta and Derevensky (1998). The second SEM model expands on the first model by including an additional construct reflecting trauma history. A final SEM model is described that includes the construct of impaired control.

The data produced in the current study was analysed using SPSS 17, Excel 2007 and AMOS 17 software. Data was screened for homogeneity and skewness, and missing data was addressed by inserting the mean score for cases with no more than 3 missing items.

8.8.1 Gambling participation

Participants were asked about their general gambling behaviour and frequency of this behaviour during the course of the past 12 months. The results revealed that participants had engaged in a variety of activities during the past year, with EGMs, scratch tickets and the lottery being the most frequently played activities. Table 8.4 describes the distribution of participant gambling involvement over the 11 gambling activities.
Table 8.4  
*Number (%) of participants gambling frequency across different gambling modalities*

<table>
<thead>
<tr>
<th>Gambling Activity</th>
<th>Never N (%)</th>
<th>1-2 times per year N (%)</th>
<th>Year up to monthly N (%)</th>
<th>2-3 times per month N (%)</th>
<th>Weekly or more often N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poker machines</td>
<td>2 (1.1)</td>
<td>1 (0.5)</td>
<td>48 (25.3)</td>
<td>52 (27.4)</td>
<td>86 (45.3)</td>
</tr>
<tr>
<td>Racing (horses, dogs, trots)</td>
<td>98 (51.6)</td>
<td>46 (24.2)</td>
<td>31 (16.3)</td>
<td>7 (3.7)</td>
<td>8 (4.2)</td>
</tr>
<tr>
<td>Scratch tickets</td>
<td>51 (26.8)</td>
<td>45 (23.7)</td>
<td>54 (28.4)</td>
<td>8 (4.2)</td>
<td>32 (16.8)</td>
</tr>
<tr>
<td>Lottery games</td>
<td>27 (14.2)</td>
<td>24 (12.6)</td>
<td>43 (22.6)</td>
<td>20 (10.5)</td>
<td>76 (40.0)</td>
</tr>
<tr>
<td>Keno</td>
<td>97 (51.1)</td>
<td>44 (23.2)</td>
<td>32 (16.8)</td>
<td>8 (4.2)</td>
<td>9 (4.7)</td>
</tr>
<tr>
<td>Casino tables</td>
<td>143 (75.3)</td>
<td>35 (18.4)</td>
<td>12 (6.3)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Bingo</td>
<td>146 (76.8)</td>
<td>30 (15.8)</td>
<td>7 (3.7)</td>
<td>2 (1.1)</td>
<td>5 (2.6)</td>
</tr>
<tr>
<td>Sporting events</td>
<td>158 (83.2)</td>
<td>21 (11.1)</td>
<td>6 (3.2)</td>
<td>0 (0)</td>
<td>5 (2.6)</td>
</tr>
<tr>
<td>Private card games for $</td>
<td>157 (82.6)</td>
<td>24 (12.6)</td>
<td>8 (4.2)</td>
<td>0 (0)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Internet gambling</td>
<td>177 (93.2)</td>
<td>7 (3.7)</td>
<td>1 (0.5)</td>
<td>1 (0.5)</td>
<td>4 (2.1)</td>
</tr>
<tr>
<td>Other gambling</td>
<td>189 (99.5)</td>
<td>1 (0.5)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

*a N= 190 (poker machine N=189)*

Further analyses were conducted to determine whether there were any gender differences in regards to gambling participation. Table 8.5 depicts differences in male and female gambling participation across a range of gambling activities. The percentages reported across activities are for participation in the activity at least once over the course of the past year. Females appeared to engage in the majority of gambling activities more frequently. However, males more frequently reported involvement in traditionally male orientated gambling forms such as racing and betting on sporting events.
Table 8.5

*Percentage (%) of gambling participation at least once a year or more across males and females*

<table>
<thead>
<tr>
<th>Gambling Activity</th>
<th>Males (%)</th>
<th>Females (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poker machines</td>
<td>97.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Racing (horses, dogs, trots)</td>
<td>57.2</td>
<td>43.3</td>
</tr>
<tr>
<td>Scratch tickets</td>
<td>67.0</td>
<td>76.7</td>
</tr>
<tr>
<td>Lottery games</td>
<td>84.3</td>
<td>86.7</td>
</tr>
<tr>
<td>Keno</td>
<td>45.7</td>
<td>50.8</td>
</tr>
<tr>
<td>Casino tables</td>
<td>32.9</td>
<td>20.0</td>
</tr>
<tr>
<td>Bingo</td>
<td>18.6</td>
<td>25.8</td>
</tr>
<tr>
<td>Sporting events</td>
<td>27.1</td>
<td>10.8</td>
</tr>
<tr>
<td>Private card games for $</td>
<td>21.4</td>
<td>15.0</td>
</tr>
<tr>
<td>Internet gambling</td>
<td>11.4</td>
<td>4.2</td>
</tr>
<tr>
<td>Other gambling</td>
<td>-</td>
<td>0.8</td>
</tr>
</tbody>
</table>

To establish if there were any significant differences between male and female gambling participation, a series of Pearson chi-square tests for independence were conducted. A significant association was found between male and female betting on sporting events. No assumptions were violated by the test. The Yates’ Correction for Continuity was chosen to be reported as it compensates for an overestimation of the chi-square when a 2 by 2 table is used, as in the current analysis (Pallant, 2001). The Continuity Correction value was 7.27, *p* < .01. These results suggest males were significantly more likely to report having bet on a sporting event over the past twelve months than female participants. No other significant associations between gender and participation in different gambling modalities were found.

In order to gain some insight into the EGM play history of participants, each was required to indicate how many years they had played EGMs. Participants reported a mean of 11.20 (*SD* = 6.88) years of EGM play experience, ranging from 1 to 30 years. The results suggested male participants had played on EGMs for a longer time period; with males reporting a mean of 12.34 years of poker machine play experience (*SD* = 12.34) and
females a mean of 10.55 years of experience ($SD = 6.22$). A t-test for independent samples found that this was a non-significant difference.

8.8.2 Classification of gambling groups

The Canadian Problem Gambling Index was used to classify participants into three groups of gamblers: non-problem gambler (score of 0 to 2.5), moderate risk gamblers (scores between 3 and 7.5) and probable problem gambler (scores between 8 and 27). Total CPGI scores for the current sample ranged from 0 to 25 with a mean of 7.48 ($SD = 6.79$). A variable was created to reflect participants’ classification of gambling severity by separating the total CPGI score variable into appropriate categories of risk. Thirty percent of the current sample was classified as no or low-risk gamblers, 27.7% as moderate-risk gamblers and 42% as problem gamblers (missing 2 cases). Table 8.6 provides the Ns and related percentages for the sample as classified by the CPGI.

Table 8.6

<table>
<thead>
<tr>
<th>Gender</th>
<th>Non-problem gamblers</th>
<th>Moderate risk gamblers</th>
<th>Problem gamblers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Male</td>
<td>25 (35.7)</td>
<td>20 (28.6)</td>
<td>25 (35.7)</td>
</tr>
<tr>
<td>Female</td>
<td>32 (27.1)</td>
<td>32 (27.1)</td>
<td>54 (45.8)</td>
</tr>
<tr>
<td>Total Sample</td>
<td>57 (30.3)</td>
<td>52 (27.7)</td>
<td>79 (42.0)</td>
</tr>
</tbody>
</table>

a. Male N= 70, b. female N= 118, 2 missing cases

A Pearson’s chi-square test was performed to investigate if there was a significant association between the number of men and women classified in each gambling severity group. None of the assumptions were violated by the test, nor was any significant difference found between the number of males and females in each gambling severity category [$\chi^2 (2, N= 188) = 2.16, p=.34$].

A one-way analysis of variance (ANOVA) was conducted to explore if there were any significant differences in the mean age across each of the gambling severity groups. A statistically significant difference at the $p<.01$ level was found in the mean age scores for
the three gambling groups \[ F (2, 188) = 10.50, p<.01 \]. The actual difference in the mean age scores between groups was moderate (Cohen, 1988). This effect size was calculated using eta squared (\( \eta^2 = 0.11 \)). Post-hoc comparisons conducted using the Tukey HSD test indicated that the mean score for the no/low risk gambling group (\( M= 56.44, SD= 14.96 \)) was significantly different from the problem gambler group (\( M= 45.51, SD= 11.60 \)). A significant difference between the moderate risk gambler group (\( M= 52.76, SD= 14.69 \)) and the problem gambler group was also found. These findings suggest problem gamblers in the sample were significantly younger than no/low risk and moderate risk gamblers, which are consistent with the pattern found in the general community (South Australian Department of Families and Communities, 2005).

Age differences were also examined for males and females in each of the gambling severity groups. Table 8.7 provides the mean ages for both males and females across each gambling severity group. In the current sample male problem gamblers appeared to be younger than their female counterparts.

Table 8.7

<table>
<thead>
<tr>
<th>Age</th>
<th>Non-problem gamblers</th>
<th>Moderate risk gamblers</th>
<th>Problem gamblers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( N= 57 )</td>
<td>( N= 52 )</td>
<td>( N= 79 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>57.55 (13.46)</td>
<td>53.79 (14.05)</td>
<td>42.09 (10.23)</td>
</tr>
<tr>
<td>Female</td>
<td>55.70 (16.06)</td>
<td>51.91 (15.45)</td>
<td>47.06 (11.94)</td>
</tr>
</tbody>
</table>

In addition to the above analyses, a number of Pearson’s chi-square tests were conducted to determine if there were any other significant differences in the demographic variables across each of the gambling severity groups. The relationship status variable was collapsed into two responses categories: Currently in a relationship (\( N= 98 \)) and not in a relationship (\( N= 90 \)). A significant difference was found between participants’ relationship status and gambling classification \[ \chi^2 (2, N= 188) = 40.48, p<.001 \]. A total of 64.4% of problem gamblers were not currently in a relationship, as compared to 23.3% of moderate risk gamblers and 12.2% of non-problem gamblers. These results suggest that a larger
proportion of non-problem gamblers and moderate risk gamblers were currently in a relationship than problem gamblers. The occupational status variable was similarly redefined into currently in paid work vs. not in paid work categories. However, no significant association between work status and gambling classification was identified.

The study was also interested in investigating if participants were using their EGM play as a social activity or if they played on their own. Research suggests individuals who gamble on their own are more likely to experience problems with their gambling (Trevorrow & Moore, 1998). Participants were able to endorse one or more categories of individuals with whom they gambled. Over half of the sample reported gambling alone (N= 115, 60.5%). Of the participants who gambled with other people, the most popular gambling companions included partners (N= 76, 40%), friends (N= 75, 39.5%) and family members (N= 61, 32.1%). A higher percentage of problem gamblers (56.6%) reported gambling alone (vs. 15.9% for no/low risk and 27.4% for moderate risk gamblers). A Pearson’s chi-square test revealed there was a significant association between gambling groups and those who did and did not gamble alone [χ² (2, N= 188)= 33.75, p<.01]. Problem gamblers were less likely to gamble with their partners or family members (26.3% and 27.9% respectively), as compared with no/low risk gambler group (39.5% and 44.3%) and moderate risk gambler group (34.2% and 27.9%). A Pearson’s chi-square test found a significant association between those who endorsed gambling with their partners or family members and gambling severity groups [χ² (2, N=188)= 12.99, p<.01 and χ² (2, N=188)= 10.10, p<.01].

8.8.3 Self-perceptions of gambling problems by participants

Due to the emphasis of the current thesis on the self-perceptions of participants, questions were asked regarding the sample’s own perceptions on the extent of their gambling involvement and gambling in people around them. This analysis is important because it examines how self-aware problem gamblers are of their gambling, and also provides a way to assess the congruence between psychometric measures of problem gambling and the self-perceptions of problem gamblers.

Participants were also required to indicate whether they were presently experiencing problems with poker machines and if they believed they had had problems with poker machines in the past, or if they had never had a problem with poker machines.
The results indicated that approximately half of the sample did not believe that they had ever experienced problems with their poker machine gambling (51.6%).

Over a quarter of the sample indicated that they were currently experiencing problems with poker machine gambling (29.5%) and 18.8% of the sample indicated that they had had problems in the past but not currently. Male and female participants did not differ substantially in their current experience of problems with poker machines (M= 31.9%, F= 28.2%). Female participants reported that they had experienced slightly more gambling problems in the past (F=19.7%, M= 17.4%), and that they had never experienced any problems with their poker machine participation (F= 52.1%, M= 50.7%). Of the participants who had been classified by the CPGI as being current problem gamblers, 55.8% indicated that they believed they were currently experiencing a problem with EGMs, and 17.6% of the participants classified as moderate risk believed they were currently experiencing problems. Only one participant classified by the CPGI as being a non-problem gambler believed that they were currently experiencing problems with EGMs. A further 35.1% of CPGI classified problem gamblers indicated that they had experienced a problem with EGMs in the past (not currently) and 15.7% of moderate risk gamblers indicated that they had experienced a problem with EGMs in the past. A smaller percentage of CPGI classified problem gamblers believed that they had never had a problem with EGMs (9.1%), with 66.7% of moderate risk gamblers and 98.2% of non-problem gamblers indicating that they had never had a problem with EGMs. A Pearson’s chi-square test found that this was a significant difference between self identified gambling problems and CPGI gambling classifications \[\chi^2 (4, N= 184) = 109.51, p<.001\].

Participants who indicated they had or were experiencing problem gambling in relation to their poker machine participation were also required to report how many years they had experienced problems. Males were more likely to have experienced problems over a longer period of time (M = 2.43 years, SD = 3.91), as compared to females who reported a mean of 2.10 years of problem gambling (SD = 3.15), although this difference was not statistically significant, \[T (1, 188) <1\].

In addition to gaining insights into the self-awareness of participants regarding their own gambling involvement, the study was also interested in establishing a more general awareness of problem gambling in terms of participants’ family members and friends. This
information provided the opportunity to discern if participants were aware if they were interacting with significant others who had gambling problems.

Participants were asked to indicate if they had a family member who they believed experienced problems related to EGMs. The majority of participants (66.5%) reported they did not have a family member with EGM problem gambling (M= 66.7%, F= 66.4%). Participants who reported having a family member with gambling problems were asked to indicate which family member(s) experienced problems. A total of 44.6% of participants reported that ‘other’ family members had problems and the type of family member is summarised in Table 8.8. Participants were most likely to report problem gamblers as their partners, mothers and/or siblings gambling problems. No significant differences were found between male and female awareness of family members problems.

Table 8.8

<table>
<thead>
<tr>
<th>Family Member with Gambling Problem</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner</td>
<td>15 (23.8)</td>
</tr>
<tr>
<td>Mother</td>
<td>14 (22.2)</td>
</tr>
<tr>
<td>Sibling</td>
<td>13 (20.6)</td>
</tr>
<tr>
<td>Child</td>
<td>5 (7.9)</td>
</tr>
<tr>
<td>Father</td>
<td>6 (9.5)</td>
</tr>
<tr>
<td>Grandparent</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Other</td>
<td>7 (11.1)</td>
</tr>
</tbody>
</table>

a. Percentages based on number of positive responses to having a family member with problem gambling (N=63)

A Pearson’s chi-square test was conducted to establish if there was an association between individuals who reported having an EGM problem and who also had a family member who they thought had a problem. Of the participants who reported having a current gambling problem, 51.9% indicated they believed a family member also had a problem. A total of 42.9% of participants who had had a gambling problem in the past, and 20.2% who had never experienced a gambling problem, believed a family member had a gambling problem. A significant association was found between gambling severity groups and those reporting family members with problems, however, this finding should be
viewed with caution since an assumption of the test was violated $\chi^2 (3, N=184) = 17.44, p<.01$.

All participants were also required to report if they had a friend(s) who to their knowledge had problem EGM gambling. The results from this question indicated that nearly half of the sample (49.5%) believed they had a friend with a problem related to their gambling on poker machines. In addition, over half of the participants who were classified as currently having a gambling problem (51.9%) believed they had a friend with gambling problems. Of the participants who in the past had experienced gambling problems and those whom had never experienced problems, 42.9% and 20.2% respectively, reported friends with problems.

8.8.4 Psychological vulnerabilities amongst participants

The following section of the results is related to variables hypothesised to measure the emotional vulnerabilities of participants.

8.8.4.1 Psychological symptoms of distress

The DASS 21 (Lovibond & Lovibond, 1995) was administered to participants to explore levels of current depression, anxiety and stress symptomology amongst participants over the past week. A significant proportion of participants indicated that they had experienced depressive symptoms during the past week, with results revealing that 18.9% of the total sample scored in the extreme range of depressive symptomology, 12.1% scored in the severe range, 16.8% in the moderate range and 13.2% of participants scored in the mild range.

In relation to gambling severity, non-gamblers reported that they experienced less extreme levels of depressive symptoms as compared to problem gamblers. There was a significant association found with respect to depressive symptomology and levels of gambling severity, $\chi^2 (8, N=187) = 42.32, p<.01$. The percentage of depressive symptomology across each gambling group is depicted in Figure 8.1.
Figure 8.1 Deposition classification for each gambling group (N= 187)

The percentage of anxiety symptomology across each gambling group is depicted in Figure 8.2. A significant association between anxiety severity and the level of problem gambling severity was found, $\chi^2 (8, N=186)= 36.18, p<.01$. Problem gamblers reported higher rates of anxiety than the other categories of gamblers.

Figure 8.2 Classification of anxiety symptomology for each gambling group (N= 186)

The distribution of stress symptomology across gambling groups is depicted in Figure 8.3. A significant association was found between the level of stress and the level of gambling severity, $\chi^2(8, N= 187)= 29.82, p <.01$. It was found that the majority of non-
problem gamblers had experienced normal levels of stress (78.9%), as had over half of moderate risk gamblers (54.9%). Problem gamblers reported the highest levels of stress.

![Stress classification for each gambling group (N= 187)](image)

*Figure 8.3 Stress classification for each gambling group (N= 187)*

A series of one-way analyses of variance (ANOVAs) were conducted to determine whether psychological functioning scores differed in relation to CPGI classifications. These analyses examined total current depression scores, total current anxiety scores and the total current stress scores, as derived from the relevant subscales from the DASS 21. A summary of the Means (SDs) for these analyses is provided in Table 8.9.

A statistically significant difference was found in the total depression scores for the three gambling groups. The effect size, calculated using eta squared, was $\eta^2 = 0.18$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the non-problem gambler group was significantly lower than the problem gambler group, with Cohens’s $d$ indicating a large effect size. The mean score for the moderate risk gambler group was also significantly lower than the problem gambler group, with a medium effect size. The non-problem gambler group did not differ significantly from the moderate risk gambler group. Table 8.9 also displays Cohen’s $d$ for each of the dependent variables between each of the gambling groups.

A statistically significant difference between the three gambling groups’ scores on the anxiety subscale was also found. Eta squared coefficients revealed an effect size of $\eta^2 = 0.17$. 
Post-hoc comparisons using Tukey HSD test indicated that the mean score for the non-problem gambler group was significantly lower than both the moderate risk group (moderate effect size) and problem gambler group (large effect size). The mean score for the moderate risk gambler group was also significantly lower than the problem gambler group (small effect size).

A one-way ANOVA also found a statistically significant difference for the total stress score for the three gambling groups (See Table 8.9). The effect size was $\eta^2 = 0.16$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score of the non-problem gambler group was significantly lower than both the moderate risk (medium effect size) and problem gambler group (large effect size). The mean score for the moderate risk gambler group was also significantly lower than the problem gambler group (small to medium effect size).
Table 8.9

Current levels of psychological distress across gambling severity groups, Means (SDs), F statistics and post hoc comparisons

<table>
<thead>
<tr>
<th>Variable</th>
<th>No/Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>8.55 (9.70)</td>
<td>13.23 (9.28)</td>
<td>20.14 (11.93)</td>
<td>20.54 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.49</td>
</tr>
<tr>
<td>Anxiety</td>
<td>5.58 (6.14)</td>
<td>10.49 (8.27)</td>
<td>15.12 (11.09)</td>
<td>18.43 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.67* 1.06* 0.47*</td>
</tr>
<tr>
<td>Stress</td>
<td>10.35 (8.59)</td>
<td>15.76 (9.55)</td>
<td>20.61 (10.94)</td>
<td>17.88 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.60* 1.04* 0.47*</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group (N= 57), Group 2 = Moderate risk gambler group (N= 52), Group 3= Problem gambler group (N= 79)

α is at .05 level

* p<.05
8.8.4.2 Participants experiences of childhood and life trauma as experienced by each level of gambling classification

The CAT scale (Sanders & Becker-Lausen, 1995) and the Life Stress Checklist (Wolfe et al., 1996) were administered to participants to explore childhood psychological maltreatment and traumatic life experiences. A series of one-way analyses of variance (ANOVAs) were conducted to determine whether scores on experiences of trauma differed in relation to CPGI status. These analyses examined childhood negative home environment and childhood sexual abuse, childhood punishment and childhood neglect and total life stressor scores from the relevant total scores and scores derived from subscales of the CAT scale and the Life Stressor Checklist. A summary of the Means (SDs) for these analyses is provided in Table 8.10.

As indicated in Table 8.10, significant differences were found in all 5 measures for the three categories of gambling severity. Eta squared coefficients identified a range of effect sizes: small effect size for the childhood sexual abuse and the childhood punishment subscales ($\eta^2 = 0.05$ and $\eta^2 = 0.04$ respectively; Cohen, 1988), medium effect sizes for the childhood neglect subscale score and the total CAT score ($\eta^2 = 0.08$ and $\eta^2 = 0.08$ respectively; Cohen, 1988) and a large effect size for the total life stressor checklist score ($\eta^2 = 0.12$; Cohen, 1988).

The post-hoc comparisons were examined by the Tukey HSD test and Cohen’s $d$, the results of which can also be found in Table 8.10. The problem gamblers’ group mean score for each of the measures (excluding childhood punishment subscale) were significantly higher than the non-problem gambler group mean scores, and these effect sizes ranged from small to large. The problem gamblers’ group mean scores on both the total CAT scale (child psychological maltreatment) and the childhood neglect subscale were also significantly higher than the moderate risk gambler group (medium effect size). The moderate risk gamblers’ mean score on the life stressor checklist (life trauma) was significantly higher than the non-problem gamblers’ mean score (small effect size).
Table 8.10  
*Means (SDs), F Statistics and post hoc comparisons of participants’ negative life experiences*

<table>
<thead>
<tr>
<th>Variable</th>
<th>No and Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td>1-2 1-3 2-3</td>
<td></td>
</tr>
<tr>
<td>Life Trauma</td>
<td>5.41 (3.49)</td>
<td>7.67 (4.80)</td>
<td>9.31 (4.65)</td>
<td>12.93 (2, 182)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.54* 0.95* 0.35</td>
</tr>
<tr>
<td>Psychological Childhood Maltreatment</td>
<td>1.01 (0.71)</td>
<td>1.05 (0.72)</td>
<td>1.45 (0.73)</td>
<td>7.92 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.06 0.61* 0.55*</td>
</tr>
<tr>
<td>Child Neglect</td>
<td>1.08 (0.89)</td>
<td>1.08 (0.87)</td>
<td>1.61 (0.89)</td>
<td>8.18 (2, 185)</td>
<td>n.s 1&lt;3 2&lt;3</td>
<td>0 0.60* 0.60*</td>
</tr>
<tr>
<td>Child Punishment</td>
<td>1.68 (0.75)</td>
<td>1.66 (0.71)</td>
<td>1.96 (0.74)</td>
<td>3.74 (2, 185)</td>
<td>1&gt;2 1&lt;3 2&lt;3</td>
<td>0.03 0.38 0.41</td>
</tr>
<tr>
<td>Child Sexual Abuse</td>
<td>0.23 (0.58)</td>
<td>0.36 (0.61)</td>
<td>0.57 (0.76)</td>
<td>4.56 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.22 0.50* 0.22</td>
</tr>
</tbody>
</table>

Note: For Life Stressor Checklist Group 1 = Non problem gambler group (N= 56), Group 2 = Moderate risk gambler group (N= 51), Group 3= Problem gambler group (N= 78)

N’s for the Childhood Neglect Score (CNS), Childhood Punishment, Childhood Sexual Abuse Scores and Childhood Negative Environment Score: Group 1 N= 57, Group 2 N= 52, Group N= 79

Group 1 N = 55, Group 2 N = 51, Group 3 N = 79

α is at .05 level n.s= non-significant

* p<.05
8.8.4.3 Coping styles employed across gambling groups

The Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990) was administered to participants to explore coping styles such as emotion-focused, avoidance-focused and task-focused to establish whether there are differences in particular coping styles employed by different groups of gamblers. A series of one-way analyses of variance (ANOVAs) were conducted to determine whether scores on each of the coping styles differed in relation to CPGI classifications. A summary of the Means (SDs) for these analyses is provided in Table 8.11.

Table 8.11 also provides the results from a series of one-way ANOVAs, which identified a statistically significant difference in the emotion-focused coping variable and the task-focused coping variable for the different gambling severity groups. These were both medium effect sizes ($\eta^2 = 0.08$ for both analyses; Cohen, 1988). The post-hoc comparisons using Tukey HSD test and Cohen’s $d$ are summarised in Table 8.11. The problem gamblers’ group mean score on the emotion-focused coping variable was significantly higher than the mean scores for both the non-gambler group (large effect) and the moderate risk gambler group (medium effect). The results also found that the problem gambler groups’ mean score on the task-focused coping variable was significantly lower than the non-problem gambler group mean score (medium effect size). The moderate risk gambler group mean score on the task-focused coping subscale was also significantly lower than the non-problem gambler group (medium effect size).

No statistically significant results were found in the avoidance subscale or the avoidance subscale’s distraction or social diversion subscales. These findings suggest that different categories of gamblers in the current sample did not differ in their use of avoidance coping styles. A number of one-way ANOVAs were also conducted using gender as the independent variable and each of the coping styles as the dependent variable, to establish whether there were any significant differences in the coping styles employed by males and females, as has previously been suggested in the literature (Lightsey & Hulsey, 2002). No significant differences were identified.
Table 8.11
Means (SDs), F statistics and post hoc comparisons for each gambling severity groups’ coping styles

<table>
<thead>
<tr>
<th>Variable</th>
<th>No and Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotion-Focused</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td>45.09 (11.32)</td>
<td>48.90 (12.35)</td>
<td>55.30 (11.16)</td>
<td>13.36 (2, 183)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.32 0.91* 0.54*</td>
</tr>
<tr>
<td>Task-Focused</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td>42.82 (12.75)</td>
<td>36.94 (12.93)</td>
<td>34.32 (10.85)</td>
<td>8.19 (2, 183)</td>
<td>1&gt;2 1&gt;3 2&gt;3</td>
<td>0.46* 0.72* 0.22</td>
</tr>
<tr>
<td>Avoidance-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focused Coping</td>
<td>46.79 (12.42)</td>
<td>47.52 (11.39)</td>
<td>47.10 (9.05)</td>
<td>0.06 (2, 183)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.06 0.03 0.04</td>
</tr>
<tr>
<td>Distraction</td>
<td>46.65 (13.00)</td>
<td>58.54 (60.22)</td>
<td>51.22 (8.73)</td>
<td>1.76 (2, 183)</td>
<td>1&lt;2 1&lt;3 2&gt;3</td>
<td>0.27 0.41 0.17</td>
</tr>
<tr>
<td>Social Diversion</td>
<td>45.60 (12.80)</td>
<td>43.23 (10.76)</td>
<td>42.00 (9.41)</td>
<td>1.79 (2, 183)</td>
<td>1&gt;2 1&gt;3 2&gt;3</td>
<td>0.20 0.32 0.12</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group (N= 55), Group 2 = Moderate risk gambler group (N= 52), Group 3= Problem gambler group (N= 79)

α is at .05 level

* p<.05
8.8.5 Experiences of dissociation, impaired control and arousal as experienced by different levels of gamblers

It was hypothesised that participants who experienced higher levels of gambling involvement would be more likely to report higher levels of dissociative experiences, impaired control and arousal than those with low levels of gambling severity.

Both the Dissociative Experiences Scale (Bernstein Carlson & Putnam, 1993) and Jacobs’ (1988) Dissociative scale questions were administered to participants to explore their dissociative experiences in general, and also their dissociative experiences whilst gambling on EGMs.

Table 8.12

Frequency of dissociation whilst gambling experienced by each gambling category

<table>
<thead>
<tr>
<th>Jacobs’ Dissociation Item</th>
<th>Never N (%)</th>
<th>Rarely N (%)</th>
<th>Occasionally N (%)</th>
<th>Frequently N (%)</th>
<th>Always N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trance Whilst Playing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/Low Risk</td>
<td>49 (86.0)</td>
<td>5 (8.8)</td>
<td>3 (5.3)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>32 (61.5)</td>
<td>8 (15.4)</td>
<td>10 (19.2)</td>
<td>2 (3.8)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Problem Gambler</td>
<td>12 (15.4)</td>
<td>15 (19.2)</td>
<td>33 (42.3)</td>
<td>17 (21.8)</td>
<td>1 (1.3)</td>
</tr>
<tr>
<td>Other Identity Whilst Playing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/Low Risk</td>
<td>55 (96.5)</td>
<td>2 (3.5)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>41 (78.8)</td>
<td>3 (5.8)</td>
<td>8 (15.4)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Problem Gambler</td>
<td>36 (46.2)</td>
<td>14 (17.9)</td>
<td>19 (24.4)</td>
<td>9 (11.5)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Outside Self Whilst Playing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/Low Risk</td>
<td>55 (96.5)</td>
<td>1 (1.8)</td>
<td>1 (1.8)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>46 (88.5)</td>
<td>2 (3.8)</td>
<td>3 (5.8)</td>
<td>1 (1.9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Problem Gambler</td>
<td>39 (50.0)</td>
<td>10 (12.8)</td>
<td>21 (26.9)</td>
<td>8 (10.3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Memory Blackout For Play?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/Low Risk</td>
<td>56 (98.2)</td>
<td>1 (1.8)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>47 (90.4)</td>
<td>4 (7.7)</td>
<td>1 (1.9)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Problem Gambler</td>
<td>51 (65.4)</td>
<td>9 (11.5)</td>
<td>15 (19.2)</td>
<td>15 (3.8)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

No/Low Risk gamblers N= 57, Moderate Risk Gamblers N= 52 and Problem Gamblers N= 78
Participants completed Jacobs’ dissociative-like experiences questions (1988) to determine how frequently they reported dissociative-like symptoms when they gambled on poker machines. Table 8.12 provides the frequency of dissociative experiences endorsed by participants in each gambling group. The majority of no/low risk and moderate risk gamblers had never experienced any of the dissociative symptoms described by Jacobs’ (1988) questions. The participants in the problem gambling group were the most likely to report having experienced dissociative symptoms during poker machine play. Jacobs’ question relating to experiences of being in a trance during poker machine play was the most commonly endorsed dissociative experience across all gambler groups; however, problem gamblers were the most likely to report this experience. Over half of the participants in the problem gambler group reported to having occasionally, frequently or always experiencing a trance state whilst playing on poker machines. Approximately half of the participants in the problem gambler group indicated that they had experienced feeling like they had taken on another identity whilst playing, and had felt outside themselves during EGM play. Experiences of memory blackout for periods of gambling were the least likely to be reported across each if the gambling groups.

In order to examine if there were any differences in the with-session experiences of dissociation between the different categories of gamblers, a total score for each dissociative experience was calculated and a series of one-way ANOVAs were conducted. Table 8.13 provides the Means (SDs), results from the one-way ANOVAs and post hoc findings including Cohen’s d. Statistically significant differences were found in each of the different types of dissociative experiences for the various gambling groups. Eta squared coefficients identified large effect sizes with trance experiences $\eta^2 = 0.39$, alternate identity $\eta^2 = 0.22$, outside self $\eta^2 = 0.22$ and memory disturbance $\eta^2 = 0.16$. Post-hoc comparisons were calculated using Tukey HSD (see Table 8.13). Problem gamblers’ mean scores on the trance variable were significantly higher for both non-problem gamblers and moderate risk gamblers mean scores (medium and large effect sizes). Problem gamblers’ mean scores were also significantly higher than moderate risk gamblers and non-problem gamblers’ mean scores on each of the other dissociative variables, with effect sizes ranging from medium to large in size.
Table 8.13
Means (SDs), F statistics and post hoc comparisons for each gambling severity groups within EGM session dissociative experiences

<table>
<thead>
<tr>
<th>Variable</th>
<th>No and Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trance during play</td>
<td>0.19 (0.52)</td>
<td>0.65 (0.93)</td>
<td>1.74 (0.12)</td>
<td>53.64 (2, 184)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.61* 4.11* 1.64*</td>
</tr>
<tr>
<td>Another identity during play</td>
<td>0.04 (0.19)</td>
<td>0.37 (0.75)</td>
<td>1.01 (1.09)</td>
<td>24.85 (1, 184)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.60 1.24* 0.68*</td>
</tr>
<tr>
<td>Outside oneself during play</td>
<td>0.05 (0.30)</td>
<td>0.21 (0.64)</td>
<td>0.97 (1.09)</td>
<td>25.40 (2, 184)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.32 1.15* 0.85*</td>
</tr>
<tr>
<td>Memory blackout during play</td>
<td>0.02 (0.13)</td>
<td>0.12 (0.38)</td>
<td>0.62 (0.93)</td>
<td>16.88 (2, 184)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.35 0.90* 0.70*</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group (N= 57), Group 2 = Moderate risk gambler group (N= 52), Group 3= Problem gambler group (N= 78)

α is at .05 level
* p<.05
8.8.5.1 Within-session behaviours of participants hypothesised to influence dissociative states during EGM play

A number of questions were asked to examine some of the behaviours participants engaged in during EGM play.

Respondents were required to indicate how many EGMs they played on during an average gambling session. This question was considered important in terms of the focus on dissociative experiences. It may theoretically be more difficult/less likely that individuals enter a dissociative-like state whilst playing on the EGM if they are constantly moving around the venue and changing machines.

Four responses appeared to be outliers, with one individual who indicated they played approximately 40 machines during a session and three reported playing 20 machines. The remaining participants reported playing a mean of 2.80 EGMs during a session (SD= 1.99). Male participants reported playing more machines during a single session than females with a mean of 3.81 (SD= 5.40), as compared to the female participants mean of 2.99 (SD= 2.83). No significant associations were identified between the different types of within-session dissociative-like experiences and number of machines played.

Participants were also required to report if they interacted with other players during a session because this could possibly break their concentration and make dissociative-like experiences less likely. A total of 60.1% of respondents reported that they interacted with other people whilst playing on poker machines. A higher percentage of female players reported interacting with other players (64.7%) than male players (51.4%). A series of independent-samples t-tests were conducted to determine whether or not interacting with people was significantly related to within-session dissociation. No significant results were found.

The use of drugs and alcohol, either prior to or during a gambling session may also have the potential to influence participants’ perceptions of dissociative like experiences during EGM play (Allcock, 2006a, 2006b). Thus, participants were asked to report their use of drugs and alcohol prior to and during a session of EGM play. They were also asked
to indicate how impaired they believed they were from their drug/alcohol use (as a measure of intoxication). Feelings of fatigue during an average EGM session were also recorded since problem gamblers are known to spend consecutive hours playing EGMs and fatigue may potentially influence experiences of dissociation during play.

In terms of consumption of alcohol prior to a session of EGM play, 28.4% of the sample responded affirmatively. Over half of the sample that drank prior to a session reported experiencing moderate effects from the alcohol (62.8%), with 35.3% reporting no effect and 2% a large effect. From the sample of participants who acknowledged drinking prior to a session, the number of alcoholic drinks consumed ranged from 1 to 7, with a mean of 1.13 ($SD= 1.48$). One individual’s responses to the number of alcoholic drinks consumed prior ($N=10$) and during ($N= 20$) a session appeared to be outliers as compared to the other responses on alcohol consumption and this case was deleted from the sample.

A number of one-way ANOVAs were conducted to determine whether the mean dissociative-like experiences scores were significantly different between different levels of prior alcohol consumption effect groups. Each of the total within-session dissociation scores were used as the dependent variable and the within-session alcohol effect score (no effect, moderate effect or high effect) as the independent variable. No statistically significant findings were identified.

The range of alcoholic drinks consumed by participants during a session ranged from 1 to 10 ($M= 3.5.1, SD= 2.02$). A total of 42.5% of the sample that consumed alcohol whilst gambling reported that they experienced no effects, 42.5% reported experiencing moderate effects and 15% experienced large effects. A number of one-way ANOVA were conducted using each of the total within-session dissociation scores as the dependent variable and the within-session alcohol effect score (no, moderate or high effect) as the independent variable. The descriptive statistics and results from the ANOVAs are presented in table 8.14. Statistically significant differences between each of the alcohol effect groups’ mean dissociative-like experiences scores were found. Eta squared coefficients found these to range from small to medium effect sizes; trance $\eta^2= 0.09$, identity $\eta^2= 0.06$, outside self $\eta^2= 0.05$, blackout $\eta^2= 0.13$. Table 8.14 provides the Means ($SDs$), results from the one-way ANOVAs and post hoc findings including Cohen’s $d$. Post-hoc comparisons using Tukey HSD found that the mean dissociative-like experiences
scores in the large alcohol effect group were significantly higher than the no effect and moderate effect groups.
<table>
<thead>
<tr>
<th>Variable</th>
<th>No effect</th>
<th>Moderate effect</th>
<th>Large effect</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trance during play</td>
<td>0.83 (1.07)</td>
<td>1.15 (0.99)</td>
<td>2.17 (0.94)</td>
<td>9.67 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.31 1.33* 1.06*</td>
</tr>
<tr>
<td>Another identity during play</td>
<td>0.44 (0.86)</td>
<td>0.62 (0.89)</td>
<td>1.33 (1.15)</td>
<td>5.83 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.21 0.88* 0.69*</td>
</tr>
<tr>
<td>Outside oneself during play</td>
<td>0.37 (0.79)</td>
<td>0.62 (0.89)</td>
<td>1.00 (1.28)</td>
<td>4.63 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.30 0.59* 0.34</td>
</tr>
<tr>
<td>Memory blackout during play</td>
<td>0.22 (0.62)</td>
<td>0.24 (0.61)</td>
<td>1.25 (0.97)</td>
<td>5.89 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.03 1.26* 1.25*</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group (N= 57), Group 2 = Moderate risk gambler group (N= 52), Group 3= Problem gambler group (N= 78)

α is at .05 level

* p<.05
In regards to the consumption of drugs prior to an EGM gambling session, the majority of participants (86.3%) reported that they did not consume drugs prior to gambling. Of those participants who consumed some type of drug prior to a gambling session, 19.2% reported that it had no effect (e.g., no feelings of intoxication), 42.3% reported that it had a moderate effect and 38.5% indicated that it had a large effect. A number of one-way ANOVAs were conducted to determine whether the mean dissociative-like experiences scores differed between the drug effect groups. The descriptive statistics and results from the ANOVAs are presented in Table 8.15. A statistically significant difference was found between drug effects groups’ mean scores for the dissociative-like experiences of: trance, changes in identity, being outside oneself. Eta squared indicated that these ranged from small to large effects (Trance $\eta^2=0.09$, Identity $\eta^2=0.05$, Outside self $\eta^2=0.07$). The mean trance score was significantly lower in the low drug effect group than either the moderate effect or large effect groups. The identity and outside self mean scores were also significantly lowered than the moderate effect or large effect groups.

The feelings of fatigue during a gambling session that were reported by participants ranged from: 50.0% did not feel fatigued, 31.1% slightly fatigued, 16.8% moderately fatigued and 1.1% severely fatigued. Comparisons of level of fatigue across mean dissociative-like experiences scores were not significant.
### Table 8.15

**Means (SDs), F statistics and post hoc comparisons for drug effect group’s within EGM session dissociative experiences**

<table>
<thead>
<tr>
<th>Variable</th>
<th>No effect</th>
<th>Moderate effect</th>
<th>Large effect</th>
<th>$F$ (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trance during play</td>
<td>0.85 (1.08)</td>
<td>1.91 (0.83)</td>
<td>1.90 (0.74)</td>
<td>9.40 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&gt;3</td>
<td>1.10*  1.13*  0.01</td>
</tr>
<tr>
<td>Another identity during play</td>
<td>0.46 (0.87)</td>
<td>1.18 (1.17)</td>
<td>1.00 (0.94)</td>
<td>4.89 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&gt;3</td>
<td>0.70*  0.60*  0.17</td>
</tr>
<tr>
<td>Outside oneself during play</td>
<td>0.39 (0.85)</td>
<td>1.27 (0.90)</td>
<td>1.00 (1.15)</td>
<td>7.22 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&gt;3</td>
<td>1.00*  0.60*  0.26</td>
</tr>
<tr>
<td>Memory blackout during play</td>
<td>0.26 (0.68)</td>
<td>0.55 (0.82)</td>
<td>0.50 (0.71)</td>
<td>1.37 (2, 188)</td>
<td>1&lt;2 1&lt;3 2&gt;3</td>
<td>0.38  0.35  0.07</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group ($N= 57$), Group 2 = Moderate risk gambler group ($N= 52$), Group 3= Problem gambler group ($N= 78$)

$\alpha$ is at .05 level

* $p<.05$
The Dissociative Experiences Scale II (DESII) (Bernstein Carlson & Putnam, 1993) was also administered to participants to explore their general dissociative-like experiences, and to establish if there were any differences in dissociative-like experiences between different groups of gamblers. A one-way analysis of variance (ANOVA) was conducted to determine whether scores on the DES II differed in relation to participants’ CPGI classifications. A summary of the Means (SDs) for these analyses is provided in Table 8.16. Table 8.16 also provides results for the ANOVA and post-hoc findings. A statistically significant difference was found in the DES II variable for the three groups. This was a large effect size ($\eta^2 = 0.14$; Cohen, 1988). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the non-problem gambler group and the moderate risk gambler group was significantly lower than the problem gambler group, with Cohens’s $d$ indicating a large effect size and medium effects size respectively.

The Scale of Gambling Choices (O’Connor & Dickerson, 2003a) and the Intensity subscale of Arnett’s Sensation Seeking Scale (Arnett, 1994) were also administered to participants to explore their impaired control over gambling and their tendency to seek stimulating experiences (see Table 8.16 for means, SDs and results from the ANOVAs). A one-way analysis of variance found a statistically significant medium effect in the impaired control variable across the gambling groups ($\eta^2 = 0.56$) and a small sized effect ($\eta^2 = 0.05$) for the differences in the arousal variable. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the problem gambler group was significantly higher on the impaired control variable than those found for both of the other two gambling categories (large effect sizes; Cohen, 1988). The non-problem gambler group mean score on the arousal variable was significantly lower than the problem gambler group mean score.
Table 8.16
Means (SDs), F statistics and post hoc comparisons for each group of gambling severity experiences of dissociation, impaired gambling control and physiological arousal

<table>
<thead>
<tr>
<th>Variable</th>
<th>No and Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissociative</td>
<td>6.87 (6.32)</td>
<td>11.48 (9.82)</td>
<td>17.37 (13.93)</td>
<td>15.01 (2, 180)</td>
<td>1&lt;2 &lt;1&lt;3 2&lt;3</td>
<td>0.52 0.95* 0.45*</td>
</tr>
<tr>
<td>Experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impaired Control</td>
<td>20.57 (6.33)</td>
<td>27.54 (7.20)</td>
<td>38.53 (6.76)</td>
<td>121.94 (2, 185)</td>
<td>1&lt;2 &lt;1&lt;3 2&lt;3</td>
<td>1.03* 2.74* 1.57*</td>
</tr>
<tr>
<td>Arousal</td>
<td>19.90 (4.56)</td>
<td>20.63 (4.63)</td>
<td>22.32 (4.38)</td>
<td>5.21 (2, 185)</td>
<td>1&lt;2 &lt;1&lt;3 2&lt;3</td>
<td>0.16 0.54* 0.38</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group, Group 2 = Moderate risk gambler group, Group 3 = Problem gambler group α is at 0.05 level

N’s for Dissociative Experiences Group 1 N= 55, Group 2 N= 51, Group 3 N= 77
N’s for Impaired Control and Arousal Group 1 N= 57, Group 2 N= 52, Group 3 N= 79
* p<.05
8.8.6 Use of legal and illicit drugs across different categories of gamblers

The ASSIST (Henry-Edwards et al., 2003) was administered to participants as a measure of their engagement in both legal and illegal drugs both currently and over their lifetime. A series of one-way analyses of variance (ANOVAs) were conducted to explore drug usage across the three classifications of gamblers using the total scores for each drug category. A summary of the Means (SDs) for these analyses is provided in Table 8.17. Table 8.17 also provides the $F$ statistic, post-hoc comparisons and Cohen’s $d$ resulting from the ANOVAs.

A statistically significant difference was found for each of the drug variables, excluding the inhalant drug category and the other drug category. The effect sizes ranged from small in size (cocaine use $\eta^2=0.05$ and hallucinogenic use $\eta^2=0.04$), to moderate (alcohol use $\eta^2=0.06$, amphetamine use $\eta^2=0.11$ and opioid use $\eta^2=0.07$) and large in size (tobacco use $\eta^2=0.18$, cannabis use $\eta^2=0.15$ and sedative use $\eta^2=0.14$). The problem gamblers’ group means scores were significantly higher than non-problem gamblers on the majority of the different drug total scores: tobacco use (large effect size), alcohol use (medium effect size), cannabis use (large effect size), amphetamine use (medium effect size), sedative use (large effect size), hallucinogenic use (medium effect size) and opioid use (medium effect size). The problem gamblers’ group means scores on a number of total drug totals (tobacco use, amphetamine use, sedative use and opioid use) were also significantly higher than the moderate risk gamblers’ mean scores, with effect sizes ranging from small to medium.
Table 8.17
Drug use across gambling severity groups, means (SDs), F statistics and post hoc comparisons

<table>
<thead>
<tr>
<th></th>
<th>No and Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen's d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco Use</td>
<td>5.60 (9.17)</td>
<td>8.19 (11.47)</td>
<td>17.78 (13.30)</td>
<td>20.82 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.25 1.07* 0.77*</td>
</tr>
<tr>
<td>Alcohol Use</td>
<td>9.72 (7.65)</td>
<td>12.58 (9.58)</td>
<td>15.62 (10.66)</td>
<td>6.41 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.33 0.64* 0.30</td>
</tr>
<tr>
<td>Cannabis Use</td>
<td>1.32 (3.60)</td>
<td>3.69 (8.21)</td>
<td>10.06 (12.13)</td>
<td>16.61 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.37 0.98* 0.62</td>
</tr>
<tr>
<td>Cocaine Use</td>
<td>0.21 (1.12)</td>
<td>0.00 (0.00)</td>
<td>0.77 (2.19)</td>
<td>4.42 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.26 0.32 0.50</td>
</tr>
<tr>
<td>Amphetamine Use</td>
<td>0.81 (4.56)</td>
<td>1.06 (4.08)</td>
<td>6.58 (11.09)</td>
<td>11.69 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.06 0.68* 0.66*</td>
</tr>
<tr>
<td>Inhalant Use</td>
<td>0.02 (0.13)</td>
<td>0.33 (1.65)</td>
<td>0.51 (1.57)</td>
<td>2.21 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.26 0.44 0.11</td>
</tr>
<tr>
<td>Sedative Use</td>
<td>1.46 (4.60)</td>
<td>2.29 (5.12)</td>
<td>7.86 (10.19)</td>
<td>14.57 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.17 0.81* 0.69*</td>
</tr>
<tr>
<td>Hallucinogenic Use</td>
<td>0.12 (0.57)</td>
<td>0.63 (2.81)</td>
<td>1.44 (3.50)</td>
<td>4.03 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.25 0.53* 0.26</td>
</tr>
<tr>
<td>Opioid Use</td>
<td>0.26 (0.86)</td>
<td>1.06 (4.39)</td>
<td>4.05 (8.80)</td>
<td>7.20 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.25 0.61* 0.43*</td>
</tr>
<tr>
<td>Other Drug Use</td>
<td>0.44 (2.16)</td>
<td>0.06 (0.42)</td>
<td>0.46 (2.55)</td>
<td>0.69 (2, 185)</td>
<td>1&lt;2 1&lt;3 2&lt;3</td>
<td>0.25 0.01 0.22</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group (N= 57), Group 2 = Moderate risk gambler group (N= 52), Group 3= Problem gambler group (N= 79)

α is at .05 level
p<.05
8.8.7 Potential buffering variables for participants across the three gambling groups

In order to address the hypothesis that certain variables may have the potential to buffer or act as protective factors in problem gambling, a series of one-way ANOVAs were first conducted to assess whether there were any differences in the hypothesised variables (categories of social support and self-esteem) amongst different groups of gamblers. These analyses revealed a number of significant results, with a small effect size ($\eta^2= 0.04$ for the total friend support variable), moderate effect size ($\eta^2= 0.10$, total family support) and large effect sizes (total social support $\eta^2= 0.12$ and total self-esteem $\eta^2= 0.14$). Table 8.18 provides the relevant descriptive statistics and results from these ANOVAs. Also provided in Table 8.18 are results from post-hoc comparisons using the Tukey HSD test and Cohen’s $d$. As expected, the problem gamblers’ mean group scores were significantly lower than non-problem gamblers on each of the variables, with effect sizes ranging from medium to large. In addition, the problem gamblers’ group mean scores on the total social support, total family support and total significant other variables was significantly lower than the moderate risk gamblers’ group mean scores (small and medium effects). The non-problem gamblers’ group mean score was significantly higher than the moderate risk gamblers’ group mean score on the total self esteem variable (medium effect).
Table 8.18
Categories of social support across gambling severity groups, means (SDs), F statistics and post hoc comparisons

<table>
<thead>
<tr>
<th>Variable</th>
<th>No and Low Risk</th>
<th>Moderate Risk</th>
<th>Problem Gambler</th>
<th>F (df, df)</th>
<th>Post-Hoc</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Social</td>
<td>65.33 (14.18)</td>
<td>59.04 (17.25)</td>
<td>51.19 (16.61)</td>
<td>13.04 (2, 185)</td>
<td>1&gt;2 1&gt;3 2&gt;3</td>
<td>0.40 0.92* 0.46*</td>
</tr>
<tr>
<td>Support</td>
<td>19.96 (5.57)</td>
<td>18.35 (5.96)</td>
<td>16.99 (6.44)</td>
<td>4.01 (2, 185)</td>
<td>1&gt;2 1&gt;3 2&gt;3</td>
<td>0.28 0.49* 0.22</td>
</tr>
<tr>
<td>Friend Support</td>
<td>21.58 (5.59)</td>
<td>19.12 (7.16)</td>
<td>16.00 (7.81)</td>
<td>10.71 (2, 185)</td>
<td>1&gt;2 1&gt;3 2&gt;3</td>
<td>0.38 0.82* 0.25*</td>
</tr>
<tr>
<td>Family Support</td>
<td>23.79 (4.81)</td>
<td>21.58 (6.72)</td>
<td>18.19 (6.52)</td>
<td>14.44 (2, 185)</td>
<td>1&gt;2 1&gt;3 2&gt;3</td>
<td>0.38 0.98* 0.51*</td>
</tr>
<tr>
<td>Significant Other</td>
<td>22.46 (4.81)</td>
<td>19.38 (5.69)</td>
<td>17.42 (5.47)</td>
<td>13.19 (2, 165)</td>
<td>3&lt;1 2&lt;1 2&gt;3</td>
<td>0.59* 0.98* 0.50</td>
</tr>
</tbody>
</table>

Note: Group 1 = Non problem gambler group (N= 57), Group 2 = Moderate risk gambler group (N= 52), Group 3 = Problem gambler group (N= 79)
N’s for Self Esteem are Group 1 N= 55, Group 2 N= 50, Group 3 N= 63
α is at .05 level
* p<.05
8.8.7.1 The potential buffering/protective functions of social support, task-focused coping and self-esteem and problem gambling

As previously discussed one of the aims of the study was to examine potential protective/buffering effects of a number of variables on problem gambling. Due to the significant relationship between problem gambling and depression, it was hypothesized that self esteem, social support and task-focused coping would moderate the relationship between depression and problem gambling. For example, it was hypothesized that participants with high levels of self-esteem and social support and those who employed more task-focused coping would be less likely to experience depression, thus these positive variables would moderate the relationship between depression and problem gambling. Depression was chosen as the predictor as it was found to have the highest Pearson correlation with the CPGI ($r = 0.48$) out of the psychological vulnerability measures included in the current study (anxiety $r = 0.47$, stress $r = 0.47$). A series of hierarchical regressions following Baron and Kenny’s (1986) approach was used to examine moderation effects. Table 8.19 presents the zero-order correlations and descriptive statistics for the primary variables included in these analyses.

Table 8.19
Zero-order correlations and descriptive statistics between CPGI, Depression (Dep) Task-Focused Coping (TFC), Social Support (SS) and Self-Esteem (SE)

<table>
<thead>
<tr>
<th>Variable</th>
<th>CPGI</th>
<th>TFC</th>
<th>SS</th>
<th>SE</th>
<th>Dep</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPGI</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.58</td>
<td>6.68</td>
</tr>
<tr>
<td>TFC</td>
<td>-0.24*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>37.61</td>
<td>12.55</td>
</tr>
<tr>
<td>SS</td>
<td>-0.33*</td>
<td>0.27*</td>
<td></td>
<td></td>
<td></td>
<td>57.71</td>
<td>17.14</td>
</tr>
<tr>
<td>SE</td>
<td>-0.35*</td>
<td>0.43*</td>
<td>0.45*</td>
<td></td>
<td></td>
<td>19.62</td>
<td>5.63</td>
</tr>
<tr>
<td>Dep</td>
<td>0.48*</td>
<td>-0.21*</td>
<td>-0.42</td>
<td>-0.61*</td>
<td></td>
<td>14.80</td>
<td>11.57</td>
</tr>
</tbody>
</table>

CPGI, task-focused coping, social support and depression $N=185$, Total self-esteem $N=165$.

*p<.01

The predictor and moderator variables were standardized (by converting them into Z-scores) as recommended by Frazier, Tix, and Barron (2004). This was to deal with problems of multicollinearity because predictor and moderator variables have been found to be highly correlated with the interaction terms derived from them (Frazier, Tix, & Barron, 2004). An interaction or product term was derived from each potential moderator
(self-esteem, social support and task-focused coping) and the predictor (depression), by multiplying the standardized variables together (the interaction term was not standardized).

Table 8.20 presents a summary of the hierarchical regression analysis that examined the relationship between depression and self-esteem when predicting problem gambling. The model as a whole was significant after both steps 1 and 2, but the analysis found a non-significant F change statistic, which suggested that self-esteem did not moderate the relationship between depression and problem gambling. The model as a whole after step 2 accounted for 15% of the variance in problem gambling.

Table 8.20

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Adjusted R²</th>
<th>Adjusted ΔR²</th>
<th>SE B</th>
<th>β</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td>-1.04</td>
<td>0.53</td>
<td>-0.18</td>
<td>-1.98*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>1.81</td>
<td>0.16</td>
<td>0.17</td>
<td>0.59</td>
<td>.28</td>
<td>3.06**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td>-1.04</td>
<td>0.54</td>
<td>-0.18</td>
<td>-1.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>1.84</td>
<td>0.60</td>
<td>.28</td>
<td>3.06**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep X SE</td>
<td>0.15</td>
<td>0.15</td>
<td>0.001</td>
<td>0.45</td>
<td>.042</td>
<td>&lt;1</td>
</tr>
<tr>
<td>SE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 1: F (2,162)= 16.26, p<.001, Step 2: F (3, 161)= 10.81, p<.001 and F change (1, 161)= 0.10, p=.75

* p<.05, ** p<.01, N= 165

The second hierarchical analysis examined whether social support moderated the relationship between depression and problem gambling. Table 8.21 presents a summary of the results from the analysis. The regression models at both steps 1 and 2 were as a whole significant, and indicated that after step 2 a total of 24% of the variance in problem gambling was accounted for. However, a non-significant F change statistic was found on step 2. As indicated by the non-significant interaction term, social support did not moderate the relationship between depression and problem gambling.
Table 8.21

Hierarchical regression to test whether Social Support (SS) moderated the relationship between Depression (Dep) and problem gambling

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>Adjusted $R^2$</th>
<th>Adjusted $\Delta R^2$</th>
<th>$SE\ B$</th>
<th>$\beta$</th>
<th>$t$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>-1.06</td>
<td></td>
<td></td>
<td>0.47</td>
<td>-0.16</td>
<td>-2.24**</td>
</tr>
<tr>
<td>Dep</td>
<td>2.76</td>
<td>0.24</td>
<td>0.25</td>
<td>0.47</td>
<td>0.41</td>
<td>5.84*</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>-0.96</td>
<td></td>
<td></td>
<td>0.49</td>
<td>-0.14</td>
<td>-1.97**</td>
</tr>
<tr>
<td>Dep</td>
<td>2.72</td>
<td></td>
<td></td>
<td>0.47</td>
<td>0.41</td>
<td>5.74*</td>
</tr>
<tr>
<td>Dep X SS</td>
<td>-0.32</td>
<td>0.24</td>
<td>0.003</td>
<td>0.41</td>
<td>-0.05</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Step 1: $F(2, 182)= 30.28, p<.001$, Step 2: $F(3, 181)= 20.35, p<.001$ and $F$ change (1, 181)= 0.62, $p= .43$.

The final hierarchical regression analysis was conducted to investigate whether task-focused coping moderated the relationship between depression and problem gambling. After step 2 the model as a whole explained 24% of the variance in problem gambling. A summary of results for the analysis is provided in Table 8.22 and showed that task-focused coping did not moderate the relationship between depression and problem gambling.
Table 8.22
Hierarchical regression to test whether Task-Focused Coping (TFC) moderated the relationship between Depression (Dep) and problem gambling

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Adjusted $R^2$</th>
<th>Adjusted $\Delta R^2$</th>
<th>SE B</th>
<th>$\beta$</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFC</td>
<td>-0.96</td>
<td>0.44</td>
<td>-0.14</td>
<td>0.44</td>
<td>-2.19**</td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>2.99</td>
<td>0.24</td>
<td>0.25</td>
<td>0.44</td>
<td>.45</td>
<td>6.82*</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFC</td>
<td>-0.98</td>
<td>0.44</td>
<td>-0.15</td>
<td>0.44</td>
<td>-2.20**</td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>2.98</td>
<td>0.44</td>
<td></td>
<td>0.44</td>
<td>.45</td>
<td>6.71*</td>
</tr>
<tr>
<td>Dep X TFC</td>
<td>-0.11</td>
<td>0.24</td>
<td>0.00</td>
<td>0.41</td>
<td>-.02</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Step 1: $F(2, 182)= 30.13, p<.001$, step 2: $F(31 181)= 20.01, p<.001$ and $F$ change (1, 181)= 0.07, $p=.79$.
*p<.001, **p<.05*, N=185

8.8.8 The role of impaired control as a mediator in problem gambling

The current study hypothesised that impaired control would have a significant relationship with problem gambling. It was also hypothesised that impaired control would mediate the relationship between psychological vulnerability variables, such as depression and a dissociation (Jacobs’ total within-session dissociative experience), and problem gambling. Two mediation regression analyses were conducted to test the hypothesised mediation models i.e. the first analysis used depression as the independent variable (IV) and the second analysis used Jacobs’ within-session dissociation as the IV. Figure 8.4 presents the hypothesised mediation models and its relevant pathways.

![Diagram](image_url)

Figure 8.4 Impaired control as a mediator of the relationship between problem gambling and depression/dissociation
The causal-steps approach to testing mediation, as described by Baron and Kenny (1986), was followed to test each of the hypothesised models. According to Baron and Kenny (1986) and Frazier, Tix and Barron (2004) the first step of a mediation regression analysis is to demonstrate a significant relationship between a predictor variable (depression/dissociation) and the outcome variable (problem gambling) (path c). The second step is to show that the predictor (depression/dissociation) is related to the mediator (impaired control) (path a), with the final step to show that the mediator is related to the outcome variable (problem gambling) (path b). Table 8.23 summarises the zero-order correlations and descriptive statistics used in the two mediation analyses.

Table 8.23

<table>
<thead>
<tr>
<th>Variable</th>
<th>CPGI</th>
<th>Depression</th>
<th>JD</th>
<th>IC</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPGI</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td>7.58</td>
<td>6.68</td>
</tr>
<tr>
<td>Dep</td>
<td>0.48**</td>
<td>-</td>
<td></td>
<td></td>
<td>14.80</td>
<td>11.57</td>
</tr>
<tr>
<td>JD</td>
<td>0.60**</td>
<td>0.48**</td>
<td>-</td>
<td></td>
<td>3.37</td>
<td>3.25</td>
</tr>
<tr>
<td>IC</td>
<td>0.78**</td>
<td>0.43**</td>
<td>0.52**</td>
<td>-</td>
<td>30.25</td>
<td>10.18</td>
</tr>
</tbody>
</table>

JD= Jacobs’ total dissociation, IC= total impaired control, Dep= total depression and CPGI= total Canadian problem gambling index

** p<.01

In order to test Model 1, a hierarchical regression (HR) was first conducted to test both whether depression was correlated with problem gambling (step 1 of a mediation analysis) and also whether impaired control affected problem gambling (step 3 of a mediation analysis). The total depression variable was entered on the first step of the hierarchical analysis and the total impaired control variable was entered on the second step, with problem gambling as the dependent variable (DV). At both steps 1 and 2 of the hierarchical analysis the models as a whole were significant, and at step 2 a significant $F$ change statistic was found. At step 1 depression accounted for 23% of the variance in problem gambling, and at step 2 accounted for 63% of the variance. In order to demonstrate that depression was correlated with impaired control (step 2 of a mediation analysis), a linear regression (LR) was conducted with depression predicting impaired control. This model as a whole was significant and accounted for 18 % of the variance in impaired control. Table 8.24 provides the results from each stage of the mediation analysis for Model 1.
Table 8.24
Summary of regressions that tested whether there was a mediated relationship between Depression (Dep) and problem gambling, with Impaired Control (IC) as the Mediator

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Adjusted $R^2$</th>
<th>Adjusted $\Delta R^2$</th>
<th>SE B</th>
<th>$\beta$</th>
<th>$t$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HR Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>2.80</td>
<td>0.23</td>
<td>0.23</td>
<td>0.04</td>
<td>.48</td>
<td>7.37**</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>0.10</td>
<td>0.03</td>
<td></td>
<td>0.18</td>
<td>.18</td>
<td>3.55**</td>
</tr>
<tr>
<td>IC</td>
<td>0.46</td>
<td>0.63</td>
<td>0.63</td>
<td>0.03</td>
<td>.70</td>
<td>14.15**</td>
</tr>
<tr>
<td><strong>LR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>0.38</td>
<td>0.18</td>
<td>0.18</td>
<td>0.06</td>
<td>.43</td>
<td>6.43**</td>
</tr>
</tbody>
</table>

HR: Step 1: $F(1, 183)$=54.35, $p<.001$, step 2: $F(2, 182)$= 156.77, $p<.001$ and $F$ change (1, 182)= 200.07, $p<0.001$. LR: $F(1, 183)$= 41.37, $p<.001$

As shown in Figure 8.5, the results from the mediation analysis indicated that impaired control mediated the relationship between depression and problem gambling because the relation between depression and problem gambling was smaller when the mediator was not in the equation. Sobel’s (1982) test was used to determine if the strength of the mediation effect using the square root of: $b^2s_a^2 + a^2s_b^2$. The Sobel test statistic was calculated using an online calculator and was found to be significant and equal to 5.85, $p<.001$ (Soper, 2009).

As shown in Figure 8.5, the results from the mediation analysis indicated that impaired control mediated the relationship between depression and problem gambling because the relation between depression and problem gambling was smaller when the mediator was not in the equation. Sobel’s (1982) test was used to determine if the strength of the mediation effect using the square root of: $b^2s_a^2 + a^2s_b^2$. The Sobel test statistic was calculated using an online calculator and was found to be significant and equal to 5.85, $p<.001$ (Soper, 2009).

![Figure 8.5 Standardised regression coefficients (Betas) for mediation Model 1](image)

In order to test Model 2, a hierarchical regression (HR) was first conducted to test both whether dissociation (JD) was correlated with problem gambling and also to test whether impaired control affected problem gambling. The total dissociation (JD) variable was entered on the first step of the hierarchical analysis, and the total impaired control variable was entered on the second step (DV=problem gambling). At both steps 1 and 2 of
the hierarchical analysis the models as a whole were significant, and a significant $F$ change statistic was found (step 2). At step 1 dissociation accounted for 35% of the variance in problem gambling and at step 2 accounted for 66% of the variance. In order to demonstrate that dissociation was correlated with impaired control a linear regression (LR) was conducted with dissociation predicting impaired control. This model as a whole was significant and accounted for 26% of the variance in impaired control. Table 8.25 provides the results from each stage of the mediation analysis for model 2.

Table 8.25
Summary of regressions testing a mediated relationship between the dissociation variable (JD) and problem gambling, with Impaired Control (IC) as the mediator

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>Adjusted $\hat{R}^2$</th>
<th>Adjusted $\Delta R^2$</th>
<th>$SE$ $B$</th>
<th>$\beta$</th>
<th>$t$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR Step 1</td>
<td>JD</td>
<td>1.23</td>
<td>0.35</td>
<td>0.36</td>
<td>0.12</td>
<td>.60</td>
</tr>
<tr>
<td>Step 2</td>
<td>JD</td>
<td>0.54</td>
<td>0.10</td>
<td>0.27</td>
<td>5.24**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IC</td>
<td>0.42</td>
<td>0.66</td>
<td>0.30</td>
<td>0.03</td>
<td>.64</td>
</tr>
<tr>
<td>LR</td>
<td>JD</td>
<td>1.62</td>
<td>0.26</td>
<td>0.27</td>
<td>0.20</td>
<td>.52</td>
</tr>
</tbody>
</table>


**$p<.001$, $N= 185$**

The results from the mediation analysis for model 2 indicated that impaired control mediated the relationship between dissociation and problem gambling. The Sobel test statistic was calculated using an online calculator and was found to be significant and equal to 7.01, $p<.001$ (Soper, 2009).

![Figure 8.6 Standardised regression coefficients (Betas) for mediation Model 2](image-url)
8.8.9 *Vulnerability Structural Equation Models (SEM) of problem gambling*

Structural Equation Modelling (SEM), or path analysis, was performed to test three models based on Jacobs’ (1986) General Theory of Addictions using AMOS 17.

According to Hoyle (1995) the first stage of SEM involves the specification of a model that is to be estimated. Models that employ SEM are usually based on theory (University of Texas, 2002). SEM nomenclature includes the use of the terms ‘observed’ or ‘manifest’ variables that refer to directly measured variables, for example in the current study anxiety was directly measured via the DASS 21. ‘Latent’ variables are not directly measured, or are ‘unobserved’ variables, that are inferred by the covariances among two or more measured variables in the analysis (Hoyle, 1995; University of Texas, 2002). Latent variables allow the estimation of relationships amongst constructs that hold theoretical importance (Raykov, Tomer, & Nesselroade, 1991). An example of a latent variable from the current study would be trauma history, which could be inferred by both the total CAT scale score and the LSC-R total score (see Figures 8.8 and 8.9). A latent variable may also be predicted by a single-indicator. Kaplan (2009) cautions that only some constructs can be measured using a single-indicator and that there is a danger that a single-indicator may sometimes hide a poorly fitted model. However, Kaplan (2009) did acknowledge that in some instances single-indicators may be necessary or appropriate and that a detailed rationale as to why they have been used should be provided. Frone (personal communication, March, 2009) argued that you can “fix” the measurement model with a single-indicator latent variable by fixing the loading to equal 1 and to fix the error variance to equal (1-reliability)*(variance of the variable)(this should only be done with a covariance matrix). An example of a single-indicator latent variable included in the current SEM models is gambling severity which had its error variance fixed at 3.12312 (see Figures 8.7, 8.7 and 8.9). In addition, independent variables are called exogenous variables (and are assumed to be measured without error) and dependent variables are called endogenous variables (University of Texas, 2002).

Relationships between observed variables (represented by rectangles or squares) and latent variables (represented by ovals or circles) are portrayed in path diagrams with lines with one arrow representing a hypothesised direct relationship between two variables, and line with arrows at both ends depicting a covariance between the two variables with no
implied direction of effect. When there is no line connecting two variables then no direct relationship has been hypothesised between the variables. For example, in Figure 8.7, the need to escape latent variable is directly predicted by both the physiological vulnerability single-indicator latent variable and the psychological vulnerability latent variable.

8.8.9.1 A conceptual description of the vulnerability models of problem gambling

The first stage of testing a vulnerability model of problem gambling attempted to replicate a previously tested and developed model by Gupta and Derevensky (1998). This first model (Figure 8.7) aimed to examine Jacobs’ (1986) General Theory of Addiction. Model 1 included five latent variables (all of which were single-indicator variables except for psychological vulnerability): physiological vulnerability, psychological vulnerability, the need to escape, problem gambling and comorbid alcohol use problems. These latent variables were comprised of the following measured variables: sensation seeking as an indicator of physiological arousal (Intensity subscale), stress, anxiety and depression (DASS 21), Total dissociation score (Jacobs’ within-session gambling dissociation questions total score), gambling severity (CPGI) and alcohol severity (alcohol subscale of the ASSIST).

A number of different total drug scores, measured by the ASSIST, were initially included in the model but were then excluded because they increased the complexity of the model and significantly reduced the model’s fit. The previously hypothesised relationship between impaired control and coping styles was also not examined in the model because it also increased the complexity of model. The total DES score was initially included to predict the need to escape variable, but was excluded because it correlated too highly with the observed variables reflecting the psychological vulnerability latent variable. Physiological vulnerability was predicted by a single-indicator because the intensity subscale is may reflect physiological arousal and no direct measures of physiological arousal were included in the current study. Problem gambling was also predicted by a single-indicator because it was the only measure of problem gambling included in the survey.
Figure 8.7 depicts the hypothesised relations between variables in Model 1 based on Jacobs’ (1986) General Theory of Addictions. The need to escape construct is of central importance, with it being directly predicted by both physiological vulnerability and psychological vulnerability, and was hypothesised to directly predict both problem gambling and comorbid alcohol severity. Physiological and psychological vulnerabilities were also hypothesised to directly predict gambling and alcohol severity.

The second model tested in the current study (Figure 8.8) aimed to expand on Model 1 with the addition of a latent variable reflecting trauma history. The trauma history latent variable directly predicted both the physiological and psychological vulnerability constructs, and also the problem gambling and alcohol severity constructs. This addition is consistent with Jacobs’ (1986) postulation that addicted individuals have experienced traumatic pasts, predominantly during childhood, and is also consistent with the reports by problem gamblers that were included in the current dissertation (see chapter 5).
Figure 8.8 SEM Model 2: Adaptation of Jacobs’ (1986) General Theory of Addictions with the addition of a latent variable reflecting trauma history.

The final model (Figure 8.9) was designed to test a vulnerability model of gambling that included the main features of Jacobs’ (1986) General Theory of Addictions, but also a measure of impaired control over gambling. This final model solely aimed to predict problem gambling and thus excluded the previously included alcohol severity latent variable.
Figure 8.9 SEM Model 3: The inclusion of a latent variable ‘impaired control’ in the adaptation of Jacobs’ (1986) General Theory of Addictions

8.8.9.2 The AMOS measurement/statistical models

The parameters for each of the models were estimated using the maximum likelihood method and the data was processed in the form of a covariance matrix. As recommended by Hoyle (1995), the correlation matrix, $M$s and $SD$s for each of the variables included in the three models are provided in Table 8.31 and have been rounded to three decimal points (this is so the reader can recover the covariance matrix if desired). Skewness and kurtosis of the variables were also included since structural equation modelling assumes observations are drawn from a continuous and multivariately normal population, although the maximum likelihood method of estimation still performs well when there is excessive kurtosis (Hoyle, 1995; Kaplan, 2009). The skewness and kurtosis of the majority of the variables appeared to be relatively normal. The total anxiety and total
Jacobs dissociation scale scores’ skewness levels appeared to influence the fit of each of the models and they were subsequently transformed using Log10 plus 1 with SPSS 17. Models are considered normal when the normalised Mardia’s estimate is not substantially greater than three or four (Bae, 1999). Multivariate kurtosis (as determined by normalised a Mardia’s coefficient) for Model 1= -0.87, Model 2= 0.24 and Model 3= 1.02, thus, it would appear the current models all had normal multivariate kurtosis. As stated previously, missing data was dealt with by inserting mean scores for missing items when there were less than 3 items missing per scale. Structural equation modelling also assumes data has completely random missing data (Kaplan, 2009). Thus cases with missing data (e.g. cases that had more than 3 items missing and did not have the mean inserted) were excluded from the analysis. Structural equation models also require a substantial sample size, preferably several hundred (Kaplan, 2009). The current sample, once missing cases were deleted, totalled N=185, slightly short of the recommended 200 or above.

For each of the measurement models all of the observed and latent endogenous variables had an associated error term, and each of the error terms and latent variables had their paths’ coefficients set at one (University of Texas, 2002). According to Van Hamel et al. (2007) the ability to create error terms in the area of gambling research (and psychology as a whole) is important since the majority of measures are prone to error. Trauma history did not have an associated error variance because it was an exogenous variable. As recommended by Frone (1998) the error variances for the single-indicator latent variables had their variances fixed at (1-reliability)* (variance of the variable).
Table 8.26

Zero-order correlations, descriptive statistics and measures of normality for variables included in path analyses (N= 185)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Negative&lt;sup&gt;a&lt;/sup&gt; Childhood</th>
<th>Impaired&lt;sup&gt;b&lt;/sup&gt; Control</th>
<th>CPGI</th>
<th>Dissociation</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
<th>TLSC&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Arousal</th>
<th>Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative a Childhood Impaired b Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>0.374**</td>
<td>0.343**</td>
<td>0.213**</td>
<td>0.381**</td>
<td>0.306**</td>
<td>0.297**</td>
<td>0.650**</td>
<td>0.243**</td>
<td>0.244**</td>
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</tr>
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<td>CPGI</td>
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<td></td>
<td></td>
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<td>Dissociation</td>
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<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Depression</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Stress</td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>TLSC a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arousal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Alcohol Use</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*<sup>a</sup> Additional variables included Models 2 & 3,  
*<sup>b</sup> Additional variable included in Model 3, Drug use excluded from Model 3  
Anxiety and Dissociation scores have been transformed to correct for skewness  
*p<.05, **p<.01.
A number of measures of the overall fit of structural equation models are provided by AMOS output; no single descriptive index of fit has been recommended as being superior to another (Raykov, Tomer and Nesselroade, 1991). Fit indexes were reported for the current analysis of models as based on recommendations by Kaplan (2009). Conventions for the acceptability of fit indexes are described in turn. The chi-square test of the overall fit of the model should not be significant. The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) compare the absolute fit of the specified model to the absolute fit of a baseline model of independence (University of Texas, 2002). The accepted rule of thumb for these indexes is that 0.95 or higher demonstrates a good fit relative to the baseline model (Kaplan, 2009). The Root Mean Square Error of Approximation (RMSEA) and its lower and upper confidence interval boundaries is designed to evaluate the approximate fit of the model and are commonly reported (Kaplan, 2009; University of Texas, 2002). Steiger (1989 cited in Kaplan, 2009) and Brown and Mels (1990 cited by Kaplan, 2009) recommended RMSEA values equal to or less than of 0.05 for a “close fit” (p. 114). In addition, Kapan (2009) suggested that when cross validation of the adequacy of models is desirable in selecting a model, the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) should be reported. The AIC can be used for comparing nested models (the current models are not nested), with the lowest AIC amongst competing models deemed to fit the data best. The BIC is similar to the AIC but is based on Bayesian Model Selection Theory; both are only meaningful in the context of comparing their values from competing models (Kaplan, 2009). The measures of the overall fit for each of the models are presented in Table 8.27.

The non-significant chi-square statistics for each of the models suggested that the null hypothesis that the model fits the data is acceptable for each model. The other fit measures also fall well within the acceptable ranges for each of the three models. Given that Model 1 is less complex and had a smaller number of parameters it appeared to fit the data slightly superior than the other two models. The modification indices (MI) were estimated, with the threshold for the level of change of chi-square change required for a path to be included set at 4 (University of Texas, 2002).
<table>
<thead>
<tr>
<th>Fit Measure</th>
<th>Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ ($df=9$)</td>
<td>11.34</td>
<td>.253</td>
</tr>
<tr>
<td>TLI</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>CFI</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>RMSEA lower bound</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA upper bound</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>AIC</td>
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<td></td>
</tr>
<tr>
<td>BIC</td>
<td>110.53</td>
<td></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ ($df=17$)</td>
<td>16.75</td>
<td>.471</td>
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<td>TLI</td>
<td>1.00</td>
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<td>CFI</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA lower bound</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA upper bound</td>
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<tr>
<td>AIC</td>
<td>72.75</td>
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<tr>
<td>BIC</td>
<td>162.92</td>
<td></td>
</tr>
<tr>
<td><strong>Model 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ ($df=17$)</td>
<td>21.17</td>
<td>.219</td>
</tr>
<tr>
<td>TLI</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>CFI</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>RMSEA lower bound</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>RMSEA upper bound</td>
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</tr>
<tr>
<td>AIC</td>
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</tr>
<tr>
<td>BIC</td>
<td>167.34</td>
<td></td>
</tr>
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</table>
Path coefficients assess the size of the relationships amongst all of the variables in a SEM model. An examination of the critical ratios (CR; the unstandardised estimate divided by its standard error) for each of the models suggested that a number of pathways were statistically significant. Each of the models’ measurement components has been considered in turn below. Table 8.28 provides the estimates, critical ratios and associated $p$ values for each of the hypothesised pathways in Model 1.

**Table 8.28**

*Estimates for Model 1*

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Estimate</th>
<th>SE</th>
<th>CR</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to Escape ← Physio Vulnerability</td>
<td>0.016</td>
<td>0.010</td>
<td>1.620</td>
<td>.110</td>
</tr>
<tr>
<td>Need to Escape ← Psych Vulnerability</td>
<td>0.013</td>
<td>0.003</td>
<td>5.220</td>
<td>.001</td>
</tr>
<tr>
<td>Problem Gambling ← Need to Escape</td>
<td>9.840</td>
<td>1.686</td>
<td>5.900</td>
<td>.001</td>
</tr>
<tr>
<td>Alcohol Use ← Need to Escape</td>
<td>7.920</td>
<td>2.698</td>
<td>2.900</td>
<td>.003</td>
</tr>
<tr>
<td>Alcohol Use ← Psych Vulnerability</td>
<td>0.066</td>
<td>0.079</td>
<td>0.841</td>
<td>.400</td>
</tr>
<tr>
<td>Alcohol Use ← Physio Vulnerability</td>
<td>0.963</td>
<td>0.279</td>
<td>3.454</td>
<td>.001</td>
</tr>
<tr>
<td>Problem Gambling ← Psych Vulnerability</td>
<td>0.165</td>
<td>0.049</td>
<td>3.390</td>
<td>.001</td>
</tr>
<tr>
<td>Problem Gambling ← Physio Vulnerability</td>
<td>0.116</td>
<td>0.163</td>
<td>0.710</td>
<td>.477</td>
</tr>
<tr>
<td>Loganxiety ← Psych Vulnerability</td>
<td>0.034</td>
<td>0.002</td>
<td>14.553</td>
<td>.001</td>
</tr>
<tr>
<td>Totdepression ← Psych Vulnerability</td>
<td>0.966</td>
<td>0.057</td>
<td>17.042</td>
<td>.001</td>
</tr>
<tr>
<td>TotalCPGI ← Problem Gambling</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LogJacobsDissociation ← Need to Escape</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SS ← Physio Vulnerability</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TotalAlcohol ← Psych Vulnerability</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$SE=$Standard error, total SS= total sensation seeking

Figure 8.10 provides the standardised coefficient weights and their associated significance for each of the pathways measured in Model 1.
In Model 1 28% of the variance in need to escape was explained by physiological and psychological vulnerability. Table 8.29 provides the squared multiple correlations for each of the three models. Psychological vulnerability significantly predicted the need to escape and gambling severity, and the need to escape significantly predicted both alcohol severity and gambling severity. A total of 46% of the variance in gambling severity was predicted by the need to escape, and both psychological and physiological vulnerability. For Model 1, the Modification Indices (MI) values suggested that if physiological predicted total depression the $X^2$ value would decrease by 4.429, and if alcohol use predicted total depression it would decrease by an additional 4.097. These changes were not made to the model because they would not have provided any additional explanatory power in terms of Jacobs’ model.
The estimates for Model 2 are provided in Table 8.29. This model had an additional latent variable, trauma history, and associated pathways. An examination of the critical values and associated $p$ values highlighted a number of significant pathways. The same pathways that were significant in Model 1 were also significant for Model 2, and the addition of the trauma history construct was found to significantly predict both physiological and psychological vulnerabilities and problem gambling. For Model 2, the MI values suggested that if total home 6 predicted total depression then the $X^2$ value would decrease by 5.774, and if total home 6 predicted total depression then it would fall by an additional 6.306. These changes were implemented to the model because of reports by problem gamblers in chapter 5 that attributed experiences of negative childhoods to the development of psychological problems later in life. As a result of these additional two pathways the $X^2$ value decreased from 26.9 ($df= 19$) to $X^2 (17)= 16.8$ in the amended Model 2.
Table 8.29

*Estimates for Model 2*

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Estimate</th>
<th>SE</th>
<th>CR</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physio Vulnerability ← Trauma History</td>
<td>2.341</td>
<td>0.669</td>
<td>3.498</td>
<td>.001</td>
</tr>
<tr>
<td>PsychVulnerability ← Trauma History</td>
<td>0.303</td>
<td>0.059</td>
<td>5.130</td>
<td>.001</td>
</tr>
<tr>
<td>Need to Escape ← Physio Vulnerability</td>
<td>0.017</td>
<td>0.009</td>
<td>1.866</td>
<td>.062</td>
</tr>
<tr>
<td>Need to Escape ← Psych Vulnerability</td>
<td>0.403</td>
<td>0.730</td>
<td>5.524</td>
<td>.001</td>
</tr>
<tr>
<td>Problem Gambling ← Need to Escape</td>
<td>9.551</td>
<td>1.637</td>
<td>5.834</td>
<td>.001</td>
</tr>
<tr>
<td>Alcohol Use ← Need to Escape</td>
<td>7.604</td>
<td>2.666</td>
<td>2.851</td>
<td>.004</td>
</tr>
<tr>
<td>Alcohol Use ← Physio Vulnerability</td>
<td>0.918</td>
<td>0.290</td>
<td>3.170</td>
<td>.002</td>
</tr>
<tr>
<td>Alcohol Use ← Psych Vulnerability</td>
<td>2.240</td>
<td>2.445</td>
<td>0.916</td>
<td>.360</td>
</tr>
<tr>
<td>Alcohol Use ← Trauma History</td>
<td>0.808</td>
<td>1.647</td>
<td>0.490</td>
<td>.624</td>
</tr>
<tr>
<td>Problem Gambling ← Psych Vulnerability</td>
<td>3.161</td>
<td>1.529</td>
<td>2.068</td>
<td>.039</td>
</tr>
<tr>
<td>Problem Gambling ← Trauma History</td>
<td>2.805</td>
<td>1.032</td>
<td>2.719</td>
<td>.007</td>
</tr>
<tr>
<td>Problem Gambling ← Physio Vulnerability</td>
<td>-0.001</td>
<td>0.167</td>
<td>-0.004</td>
<td>.996</td>
</tr>
<tr>
<td>Total Depression ← Psych Vulnerability</td>
<td>27.863</td>
<td>2.280</td>
<td>12.221</td>
<td>.001</td>
</tr>
<tr>
<td>Total Stress ← Psych Vulnerability</td>
<td>31.254</td>
<td>2.348</td>
<td>13.313</td>
<td>.001</td>
</tr>
<tr>
<td>Total LSC ← Trauma History</td>
<td>6.538</td>
<td>0.869</td>
<td>7.524</td>
<td>.001</td>
</tr>
<tr>
<td>Total Depression ← Total Home6</td>
<td>0.860</td>
<td>1.018</td>
<td>0.845</td>
<td>.398</td>
</tr>
<tr>
<td>Total Stress ← Total Home6</td>
<td>-1.466</td>
<td>0.925</td>
<td>-1.584</td>
<td>.113</td>
</tr>
<tr>
<td>TotalCPGI ← Problem Gambling</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LogJacobsDissociation ← Need to Escape</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SS ← Physio Vulnerability</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loganxiety ← Psych Vulnerability</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Alcohol ← Alcohol Use</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Home6 ← Trauma History</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SE=Standard error, total SS= total sensation seeking, total LSC= total life stressor checklist

Figure 8.11 provides the standardised regression weights for Model 2 pathways.
Figure 8.11 SEM measurement Model 2: A vulnerability model of problem gambling with standardised estimates

*p<.05 **p<.01, ***p<.0001

The squared multiple correlations for Model 2 were comparable to Model 1 (refer to Table 9.31 for the squared multiple correlations for Model 2). However, the percentage of variance explained in the problem gambling construct increased to 50% in Model 2 (as compared to 46% in Model 1) with the inclusion of the trauma history latent variable. For Model 2, the percentage of variance explained in both the need to escape construct and alcohol severity construct decreased slightly, as compared to Model 1 (1% lower in need to escape and 5% lower in alcohol severity).

The final model tested included an additional latent variable, impaired control over gambling, and associated pathways. Physiological vulnerability did not predict problem gambling in Model 3 because of the insignificance of this pathway in the previous two
models. The previously identified significant pathways between total home 6 with both total depression and stress were also included in Model 3. In addition to the significant pathways identified in the previous models, a number of significant pathways were found to predict impaired control, and impaired control was also found to significantly predict problem gambling. The estimates for Model 3 are provided in Table 8.30 below.

Table 8.30
Estimates for Model 3

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Estimate</th>
<th>SE</th>
<th>CR</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physio Vulnerability ← Trauma History</td>
<td>2.324</td>
<td>0.660</td>
<td>3.523</td>
<td>.001</td>
</tr>
<tr>
<td>Psych Vulnerability ← Trauma History</td>
<td>9.423</td>
<td>1.884</td>
<td>5.002</td>
<td>.001</td>
</tr>
<tr>
<td>Need to Escape ← Psych Vulnerability</td>
<td>0.013</td>
<td>0.002</td>
<td>5.651</td>
<td>.001</td>
</tr>
<tr>
<td>Need to Escape ← Physio Vulnerability</td>
<td>0.017</td>
<td>0.009</td>
<td>1.873</td>
<td>.061</td>
</tr>
<tr>
<td>Impaired Control ← Psych Vulnerability</td>
<td>0.164</td>
<td>0.079</td>
<td>2.081</td>
<td>.037</td>
</tr>
<tr>
<td>Impaired Control ← Physio Vulnerability</td>
<td>-0.075</td>
<td>0.277</td>
<td>-0.270</td>
<td>.787</td>
</tr>
<tr>
<td>Impaired Control ← Need to Escape</td>
<td>11.046</td>
<td>2.642</td>
<td>4.182</td>
<td>.001</td>
</tr>
<tr>
<td>Impaired Control ← Trauma History</td>
<td>4.851</td>
<td>1.673</td>
<td>2.900</td>
<td>.004</td>
</tr>
<tr>
<td>Problem Gambling ← Need to Escape</td>
<td>4.789</td>
<td>1.311</td>
<td>3.652</td>
<td>.001</td>
</tr>
<tr>
<td>Problem Gambling ← Psych Vulnerability</td>
<td>0.027</td>
<td>0.037</td>
<td>0.732</td>
<td>.464</td>
</tr>
<tr>
<td>Problem Gambling ← Trauma History</td>
<td>0.652</td>
<td>0.716</td>
<td>0.911</td>
<td>.362</td>
</tr>
<tr>
<td>Problem Gambling ← Impaired Control</td>
<td>0.446</td>
<td>0.043</td>
<td>10.260</td>
<td>.001</td>
</tr>
<tr>
<td>LogJacobsDissociation ← Need to Escape</td>
<td>0.032</td>
<td>0.002</td>
<td>13.260</td>
<td>.001</td>
</tr>
<tr>
<td>TotalSS ← Physio Vulnerability</td>
<td>0.890</td>
<td>0.059</td>
<td>15.077</td>
<td>.001</td>
</tr>
<tr>
<td>Total LSC ← Trauma History</td>
<td>6.354</td>
<td>0.830</td>
<td>7.651</td>
<td>.001</td>
</tr>
<tr>
<td>TotalDepression ← Total Home6</td>
<td>0.798</td>
<td>1.026</td>
<td>0.778</td>
<td>.437</td>
</tr>
<tr>
<td>Total Stress ← Total Home6</td>
<td>-1.544</td>
<td>0.935</td>
<td>-1.651</td>
<td>.099</td>
</tr>
<tr>
<td>TotalCPGI ← Problem Gambling</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LogJacobsDissociation ← Need to Escape</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SS ← Physio Vulnerability</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Control ← Impaired Control</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Home6 ← Trauma History</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The standardised regression weights for Model 3 are presented in Figure 8.12. Trauma history, psychological vulnerability and the need to escape were all significantly associated to the impaired control over gambling construct. The model also demonstrated that impaired control over gambling significantly contributed to problem gambling.
Figure 8.12 SEM measurement Model 3: The inclusion of a latent variable ‘impaired control’ in the adaptation of Jacobs’ (1986) General Theory of Addictions with standardised estimates

*p<.05, p<.01, ***p<.0001

The total variance explained in problem gambling in Model 3 was 77%, and this finding suggested that impaired control was an important construct in the conceptualisation of problem gambling. The multiple squared correlations for Model 3 are presented in Table 8.31.
Table 8.31

Variance accounted for by individual variables in Models 1, 2 and 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Latent Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PsychVulnerability</td>
<td>-</td>
<td>0.25</td>
<td>0.26</td>
</tr>
<tr>
<td>PhysioVulnerability</td>
<td>-</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Need to Escape</td>
<td>0.28</td>
<td>0.27</td>
<td>0.27</td>
</tr>
<tr>
<td>Alcohol Severity</td>
<td>0.37</td>
<td>0.32</td>
<td>-</td>
</tr>
<tr>
<td>Problem Gambling</td>
<td>0.46</td>
<td>0.50</td>
<td>0.77</td>
</tr>
<tr>
<td>Impaired Control</td>
<td>-</td>
<td>-</td>
<td>0.42</td>
</tr>
<tr>
<td><strong>Observed Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Alcohol</td>
<td>0.81</td>
<td>0.92</td>
<td>-</td>
</tr>
<tr>
<td>Total Depression</td>
<td>0.74</td>
<td>0.74</td>
<td>0.73</td>
</tr>
<tr>
<td>Total Anxiety</td>
<td>0.63</td>
<td>0.62</td>
<td>0.62</td>
</tr>
<tr>
<td>Total Stress</td>
<td>0.92</td>
<td>0.95</td>
<td>0.95</td>
</tr>
<tr>
<td>Total Sensation Seeking</td>
<td>0.56</td>
<td>0.56</td>
<td>0.56</td>
</tr>
<tr>
<td>Total CPGI</td>
<td>0.93</td>
<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>Total JD</td>
<td>0.83</td>
<td>0.83</td>
<td>0.83</td>
</tr>
<tr>
<td>Total LSC</td>
<td>-</td>
<td>0.65</td>
<td>0.64</td>
</tr>
<tr>
<td>Total Home6</td>
<td>-</td>
<td>0.64</td>
<td>0.65</td>
</tr>
<tr>
<td>Total Control</td>
<td>-</td>
<td>-</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Note: - represent variables not included in a model. Total JD= total Jacobs’ within-session dissociation, total LSC= total life stressor checklist, total home 6= total CAT score, total control= total impaired control.

8.9 Discussion

The current study aimed to obtain quantitative data on a number of psychological and physiological variables in South Australian regular EGM players. The EGM players involved in the study engaged in a wide range of gambling activities, and the majority had extensive experience playing EGMs. A large percentage of the EGM players were classified as moderate risk gamblers (27.7%) or problem gamblers (42%). However, the high percentage of involvement by these categories of gamblers was expected given that
one of the inclusion criteria was that participants had to have gambled regularly on 
EGMs, and consequently a proportion of the community was ineligible to participate.

A focal point of the current thesis is the self-perceptions of EGM gamblers’
because of the potential clinical and theoretical implications that might be derived from 
their insights. The EGM players in the current study demonstrated some awareness as to 
the degree of their gambling involvement. Approximately half of the sample did not 
believe they were currently experiencing gambling problems, and over a quarter of 
participants believed that they were currently experiencing gambling problems. In the 
subgroup of the sample who were classified by the CPGI as being problem gamblers, only 
55.8% believed that they were currently experiencing gambling problems. These findings 
suggest that there is some discrepancy between regular EGM players’ self-awareness or 
disclosure of their gambling severity and the gambling classification provided by the 
CPGI. Possible explanations for these findings may include that problem gamblers: are 
genuinely unaware of the degree of their gambling involvement i.e. a form of self denial, 
they may have a different understanding of what problem gambling is, or perhaps problem 
EGM players want to keep their gambling problems hidden (which is consistent with 
reports in chapter 7). The CPGI may also have produced some false positives. Regular 
gamblers also appear to be aware of immediate family members’ gambling problems.
Although they reported being aware of other people’s gambling related problems this does 
not necessarily mean that they expressed their concerns to the individual. As was described 
in chapter 7 many of the respondents believed that there is a social taboo surrounding 
problem gambling and this may explain why people are reluctant to express their concerns 
with suspected problem gamblers.

The subgroup of problem gamblers who recognised that they had or were 
experiencing problem gambling, reported that on average they experienced problem 
gambling for a period of two years. Problem gamblers also indicated that they gambled 
alone. Gambling alone has previously been identified as a risk factor for problem gambling 
(e.g., Griffiths, 1993), and is also consistent with reports from problem gamblers included 
in Chapter 6.
8.9.1 Support for the conceptualisation of a subgroup of problem gamblers in terms of a vulnerability model

The central aim of the study was to investigate some of the factors that could predispose people to develop problems with EGM gambling within a vulnerability model. The research findings provide strong support for a number of features of Jacobs’ (1986) theory and also Blaszczynski and Nower’s (2002) emotionally vulnerable category of gamblers. In particular, the study produced evidence to suggest that problem gamblers, as compared to other categories of gamblers, experience higher levels of psychological and physiological vulnerabilities. Problem gamblers were also characterised by comorbid drug and alcohol problems as is predicted by Jacobs’ (1986) theory. The findings from this study are consistent with research reported by Gupta and Derenvensky (1998) and Kaufman (2002) who found evidence to support Jacobs’ (1986) General Theory of Addictions in adolescent gamblers. In relation to the study’s hypotheses regarding certain positive variables that may buffer/protect against problem gambling, the analysis found that problem gamblers demonstrate lower levels of positive variables; task-focused coping, self-esteem and social support. However, these positive variables did not moderate the relationship between depression and problem gambling as predicted.

Jacobs (1986) proposed that individuals who engage in addictive behaviours/substances are more likely to have a physiological predisposition, and that addictive behaviours or substances are used to adjust abnormal levels of arousal. People with hypertensive resting rates seek experiences that decrease arousal (such as alcohol) and those with hypotensive rates seek experiences that increase arousal. Gambling is believed to regulate both physiological imbalances (Kaufman, 2002). In addition, arousal theories of gambling postulate that EGM gamblers are rewarded by subjective experiences of excitement and predict that problem gamblers have greater arousal than other categories of gamblers (e.g., Anderson & Brown, 1984; Kaufman, 2002). As predicted, problem gamblers were significantly more likely to report higher levels of physiological arousal than moderate risk and non-problem gamblers. The Cronbach’s Alpha representing the reliability of the scale that was used to measure arousal (AISS intensity subscale) was low, and thus this finding should be viewed with caution (Arnett, 1994). However, the direction of the results is consistent with both Jacobs’ (1986) proposition that problem gamblers utilise their gambling to regulate abnormal physiological resting rates, and also the reports in chapter 6 that suggested problem gamblers find playing EGMs physiologically arousing.
These findings suggest that EGM gambling may be used to escape reality and to engender feelings of excitement (Kaufman, 2002).

The second component of Jacobs’ (1986) theory is that people who develop addictions have an emotional/psychological predisposition that is exacerbated by experiences of chronic trauma, which in turn, lead them to develop feelings of inadequacy and unworthiness. Blaszczynski and Nower (2002) also identified a pathway into problem gambling that was characterised by emotional vulnerabilities. In support of this, the problem gamblers in the current study were characterised by high levels of psychological distress and were significantly more likely to report higher levels of depression, anxiety and stress than either non-problem gamblers or moderate risk gamblers. Indeed, problem gamblers’ scores on the DASS21 indicated that they were more likely to experience extreme levels of symptomology for each of the measures of psychological distress than other gambling groups. The level of psychological distress increased with the severity of gambling involvement. In a similar vein, Coman et al. (1997) highlighted the importance of stress and anxiety in problem gambling, and claimed that they are precipitating and perpetuating factors in the development and maintenance of problem gambling. In another study using the DASS, Oei, Lin, and Raylu (2008) reported that anxiety scores could significantly predict the extent of gambling problems for both Caucasian and Chinese participants. This is consistent with the findings from the qualitative study that suggested the majority of respondents had experienced significant levels of depression and anxiety (both during childhood and adulthood) and used EGM gambling as a method of escape. However, even though these findings suggest that problem gamblers are characterised by significant levels of psychological distress, causality cannot be inferred due to the cross-sectional nature of the study.

The current study also attempted to investigate some of the childhood and stressful/traumatic life experiences that may contribute to emotional/psychological vulnerability (e.g., Jacobs, 1986; Kausch et al., 2006; McCormick, 1994; Taber et al., 1987). The study provides support for the hypothesis that problem gamblers report more traumatic life events and score higher on experiences of childhood psychological maltreatment, childhood sexual abuse and childhood physical abuse than other categories of gamblers. These findings are consistent with reports by the problem gamblers included in the qualitative study (chapters 5) that described experiences that caused them significant distress. A study conducted by Kausch, et al. (2006) that examined associations between
trauma history, comorbid substance dependence, impulsivity, gambling severity and personality factors (in treatment seeking problem gamblers) reported similar findings. The authors reported that 64% of gamblers reported a history of emotional trauma, 40.5% had experienced physical trauma, and a total of 24.3% had experienced sexual trauma, with a large proportion of this trauma occurring during childhood.

Another purpose of the current study was to obtain information about the dissociative experiences of regular EGM gamblers consistent with Jacobs (1986, 1988). Problem gamblers were significantly more likely to report a higher level of dissociative experience (DES scores) and experiences of with-session dissociation (Jacobs’ dissociation questions) than other groups of gamblers. A number of the variables that were hypothesised to influence experiences of within-session dissociation were found to influence mean dissociation scores. For example, people reporting large or moderate effects from alcohol or drug consumption (e.g., feelings of intoxication) were more likely to have higher mean scores on the different types of within-session dissociation. Therefore, reports of dissociation during gambling may actually be caused by alcohol consumption rather than gambling.

Also consistent with findings to support the conceptualisation of a psychological vulnerability in problem gamblers is the result that problem gamblers’ employ higher levels of emotion-focused coping style than both non-problem gamblers and moderate risk gamblers. However, the hypothesis that problem gamblers utilise more avoidance coping styles was not supported. Lightsey and Hulsey (2002) also failed to find an association between avoidant coping and gambling. Lightsey and Hulsey (2002) argued that this appeared to be consistent with Endler and Parker’s (1990) finding that avoidance coping was unrelated to psychological distress and psychopathology. The current study also did not identify any gender differences in coping styles which is inconsistent with previous research that suggests that women employ more emotion based coping strategies than men (p. 167 for no. refs.). The results are consistent with Lightsey and Hulsey (2002) and other studies that have found no difference in coping under certain stressful situations.

Jacobs’ (1998) model proposed that people with interrelated psychological and physiological vulnerabilities are at a significant risk of developing addictions, and thus predicts high levels of comorbid drug and alcohol misuse. The hypothesis that the problem gamblers and moderate risk gamblers in the current sample would be characterised by
higher levels of comorbid drug and alcohol problems than non-problem gamblers was supported. The problem gamblers in the current sample were more likely to be classified as being at high risk for each of the different groups of drugs. Tobacco alcohol, cannabis and sedatives were the most commonly used substances. The high use of sedatives may be due to the older age range of the sample. This is consistent with Rodda, Brown, and Phillips (2004) who reported that the literature suggests that treated problem gamblers have higher rates of tobacco smoking and found a linear relationship between smoking and problem gambling in untreated sample of EGM players. El-Guebaly et al. (2006) also reported a community based study that found people with substance dependence (i.e. harmful alcohol use) had a 2.9 times increased risk of moderate or high gambling severity. Petry, Stinson and Grant (2005) also reported a study that is consistent with these research findings that suggested a high percentage of pathological gamblers had an alcohol use disorder (73.2%), drug use (38.1%) and/or nicotine dependence (60.4%).

All of the SEM models provided support for the conceptualisation of problem gambling within a vulnerability model. The model fit indexes indicated that the data was well fitted to the proposed models. The first SEM model replicated Gupta and Derevensky (1998) pathways analysis that was based on Jacobs’ (1986) theory. The importance of the need to escape construct was highlighted in each model. Model 1 found that the need to escape construct significantly predicted both problem gambling (β = .48) and alcohol use (β = .29) as predicted by Jacobs’ (1986) theory. Also consistent with Jacobs’ (1986) theory is the finding that psychological vulnerability significantly predicted both need to escape (β= .44) and problem gambling (β =.26).

The finding that physiological vulnerability did not significantly predict problem gambling but did significantly predict alcohol use is inconsistent with Jacobs’ (1986) theory. Walker (1992) pointed out that the ingestion of alcohol (and drugs) has a direct effect on the dopaminergic system of the brain which gambling and other behaviours can not directly replicate which may explain this finding. Another possible explanation for this is that the scale used to measure physiological vulnerability may not have been an adequate reflection of the physiological arousal referred to by Jacobs (1986). The definition of physiological arousal in Jacobs (1986) is unclear and does not specify a type of physiological arousal i.e. peripheral arousal vs. cortical arousal, or biochemical balance (Gupta & Derevensky, 1998). The inclusion of trauma history in Model 2 did not have a negative effect on the fit indexes of the model, and the amount of variance explained in
problem gambling increased from 46% to 50%. Trauma history was included because it was hypothesised that traumatic life experiences lead to feelings of rejection and low self-esteem as posited by Jacobs (1986). The findings that trauma history significantly predicted both psychological and physiological vulnerability and also problem gambling is consistent with both Jacobs’ (1986) theory, research conducted by (Taber et al., 1987) and reports by problem gamblers in chapter five.

8.9.2 The importance of the construct ‘impaired control’ in problem gambling

As had been predicted, problem gamblers were significantly more likely to report higher levels of impaired gambling control than other gambling categories, and moderate risk gamblers were also more likely to report higher levels of impaired control than non-problem gamblers. Impaired control was also found to mediate the relationships between within-session dissociation and problem gambling, and depression and problem gambling.

The importance of impaired control in the conceptualisation of problem gambling is also indicated by the increased variance that was accounted for in problem gambling in the final SEM model (77%). Impaired control was found to significantly predict problem gambling, and it was significantly predicted by some of the same variables hypothesised by Jacobs’ (1986) model: trauma history, psychological vulnerability and the need to escape. These findings support the proposition that some of the variables that have been linked with problem gambling are also related to impaired control, and that impaired control is central to problem gambling (Dickerson et al., 2003; O'Connor & Dickerson, 2003a).

8.9.3 Protective variables in problem gambling

A number of variables with the potential to buffer or act as protective factors were examined in the current study. It was hypothesised that the association between depression and problem gambling is moderated by positive variables such as social support, self-esteem and task-focused coping. These positive variables were not found to moderate this relationship. However, problem gamblers were found to have significantly lower scores on these positive variables than the other classifications of gamblers. The lack of a moderation effect could possibly be because the sample consists of people at a higher risk of gambling problems, and therefore it might be just as likely that these positive variables moderate a
relationship where problem gambling leads to depression (as opposed to depression predicting problem gambling).

8.10 Summary of Findings

The current study provides evidence of a number of the features of Jacobs’ (1986) General Theory of Addictions. The problems gamblers in the study were characterised by higher levels of psychological vulnerabilities, physiological vulnerabilities, trauma history, dissociative experiences, and comorbid substance use problems than other categories of gamblers. The SEM models also provide support for a vulnerability model of problem gambling, however, physiological vulnerability was not found to significantly predict problem gambling. The importance of impaired control in problem gambling was also highlighted. A number of positive variables were found to be lower in problem gamblers but were not found to moderate a relationship between depression and problem gambling.
Chapter 9

Study 4

The Phenomenology of Electronic Gaming Machine Play: An Exploratory Study

9.1 Overview of Chapter 9

The current chapter reports a small exploratory study that was conducted to investigate the phenomenological within-session experiences of both regular and problem EGM players. The study was based on Jacobs’ (1986) theory that gamblers are prone to dissociative-like experiences during gambling sessions, as well as the findings from the earlier reported qualitative study that suggested that some problem gamblers may experience “hypnotic trances”, or altered states of consciousness.

9.2 The Phenomenology of EGM Play: Is There a Case for Trance-Like or Altered States of Consciousness?

As discussed in previous chapters, a core feature of Jacobs’ (1986) General Theory of Addictions is the proposition that gambling blurs reality testing by focusing attention, reduces self-criticism and self-consciousness, and permits complimentary fantasies about one’s self. It is therefore possible that problem gamblers can be differentiated from non-problem gamblers by their experience of a common set of dissociative-like experiences. Gambling is believed to produce a significant level of arousal that narrows attention and alters states of consciousness which enables gamblers to ‘dissociate’ (Blaszczynski & Nower, 2002). Previous research suggests that problem EGM gamblers often report that they feel like they are in a trance whilst playing, and that they become unaware of their surrounding environment and lose track of time (Diskin & Hodgins, 2001). This is consistent with the previously reported qualitative study that described how problem EGM gamblers frequently experienced dissociative-like experiences that were likened to being in a trance or an altered state of consciousness.
Jacobs used the term dissociation very broadly in his theory and, as a result, questions have been raised as to whether gamblers experience dissociation in a true clinical sense (Jacobs, 1988). Allcock (2006b) argued that gamblers are conscious during gambling and suggested that problem gamblers’ experiences do not meet the DSM-IV criteria for a dissociative disorder (APA, 1994). Alternatively, Griffiths, Wood, Parke and Parke (2006) described how the terms ‘dissociation’ and ‘zoning out’ have no clearly accepted definitions within the literature, but suggested that the majority of researchers would agree that they are forms of altered states of consciousness. However, Allcock (2006a) suggested debate remains as to whether gambling can influence consciousness/awareness. For example, vague thoughts and feelings of being another person may occur whilst gambling, but this is not the same as an identity change sometimes associated with amnesia.

9.3 The Role of Consciousness in EGM Players’ Phenomenological Experience

The debate concerning dissociative-like experiences during gambling, as well as the subjective reports that have been used to support its existence, suggest that research identifying the within-session phenomenological experiences of gamblers is warranted. This may clarify whether gamblers’ phenomenological experiences include dissociative-like experiences or altered states of consciousness that are induced by EGM play. Delfabbro (2006) also proposed that it would be useful to examine the extent to which dissociative-like experiences are reflected in within-session experiences, in order to disqualify them as being merely ad hoc rationalisations for gambling behaviour.

9.3.1 Understandings of consciousness

The study of consciousness has a long history and various theorists have attempted to define the concept. Irrespective of the abundance of research on the nature of consciousness there is no “universally accepted definition” (Wallace & Fisher, 1987, p. 12 cited by Rock & Kambouropoulos, 2008, p. 132).
The history of consciousness research in psychology began with Wundt (1832-1920) who first established a laboratory to explore the mechanism of human consciousness in order to identify the structure of the mind through introspection (Wortman, Loftus, & Marshall, 1985). William James, another important figure in the history of psychology, reportedly questioned the existence of consciousness, and suggested that consciousness had an adaptive function because of its selectiveness when directing its attention (1890, 1904 cited by Silverman, 1978; Wortman et al., 1985). Husserl (1913/1970) believed that consciousness was intentional, and argued that the information available in consciousness was a result of being conscious. Kihlstrom (1984) proposed that consciousness allowed an individual to monitor and control the self and the environment and to initiate and terminate behaviour and cognitive activities. Different paradigms have influenced the various conceptualisations of consciousness. Pekala (1991) concluded that cognitive psychologists attempt to understand consciousness in terms of schemas, and that other psychologists posit that attention is central to consciousness.

The phenomenology of consciousness has numerous methodological limitations because of the nature of consciousness and the problems associated with directly observing it (Battista, 1978 cited by Pekala, 1991). However, Battista (1978 cited by Pekala, 1991) stated that there are three areas of agreement on the phenomenology of consciousness that are consistent within the literature. Research in the area indicates that consciousness is: primary (provides the foundation for all knowledge), is a field (Gestalt experience) and is a stream continually in flux (fluid and changeable) (Battista, 1978 cited by Pekala, 1991). Battista (1978 cited by Pekala, 1991) also classified consciousness into eight major categories: sensations, perceptions, emotions, affects, cognition, intuition (a way of understanding experience in a holistic and simultaneous manner), self-awareness and unition (experience of being connected with the universe). Marsh (1977 cited by Pekala, 1991; Wortman et al., 1985) conceptualised consciousness as the awareness of all thoughts, images, perceptions and emotions that exist in the mind, and categorised consciousness in terms of four main categories: focus (direction of attention, its intensity and its breadth), structure (field of awareness i.e. foreground, background and aerial), attributes (characteristics that describe perceptions, etc) and flow (consciousness subjectively felt in flux). Pekala (1991) argued that these four categories provided a framework for the contents of consciousness as proposed by Battista (1978).
9.3.2 States of consciousness

Consciousness is not an all or nothing phenomenon because states or degrees of consciousness vary throughout the normal course of a day (Silverman, 1968; Wortman et al., 1985). For example, consciousness may move from a focused state towards a sleep state. One conceptualisation of states of consciousness suggests that they are constructions of various subsystems that combine into specific patterns to form ‘discrete’ states of consciousness (Tart, 1975). Tart (1975) defined discrete states of consciousness (SoC) as:

“unique configuration or system of psychological structures or subsystems… that maintains its integrity or identity as a recognisable system in spite of variations in input from the environment and in spite of various (small) changes in the subsystems” (p. 62).

Conversely, Singer (1977) emphasised the intensity of different elements that constitute states of consciousness. Pekala (1991) provided an explanation of consciousness after reviewing the major works in the area and proposed that consciousness:

“is the total matrix of sensations, perceptions, cognitions, and affects that characterise the individual. Whereas ordinary states of consciousness are characterised by combinations of emotions, perceptions, and cognitions in affective-cognitive orientations that appear automatic due to innate neural programs and early-learned affective-cognitive structures, altered states of consciousness occur when the bonds coupling affects and cognitive structures are broken, due to psychoactive drugs, extraordinary strong drives, or radical shifts in the perceptual-affective-cognitive structures” (p. 80).

The current study has been developed to address reports by problem gamblers that indicate they feel as though they are in a trance-like state or altered state of consciousness, such as referred to by Pekala (1991) above.
9.3.3 Altered states of consciousness and the nature of trance

The literature indicates that exposure to particular stimuli, such as hypnotic induction, meditation, yoga or the ingestion of drugs can lead to temporary alterations in states of consciousness (ASoC) that eventually return to baseline conditions (Kihlstrom, 1984). Wortman et al. (1985) suggested that ASoCs can be induced: 1) by significantly decreasing sensory inputs or by creating a sensory environment that is highly repetitive and boring and 2) by increasing sensory inputs or sensory over-load during times of emotional stress/trauma or stimulant drugs. Consistent with these findings is Bowers’ (1984) claim that emotional arousal, fatigue or drugs might generate extreme dissociative reactions. Specific features of gambling venues and emotional states that were described by respondents in chapter 6 appear to be consistent with elements of these two methods of inducing ASoCs i.e., for some people gambling becomes a repetitive and conditioned behaviour and/or the environment produces sensory stimulation. However, to date, there has been no overall model of ASoCs cited in the literature, therefore arguments about causality must be made with caution. In addition, although it may be more likely that a phenomenon occurs in a particular state, this does not mean the state is responsible for the phenomenon (Kihlstrom, 1984; Vaitl et al., 2005). An early interest in ASoCs led to the development of lists of basic dimensions/characteristics of consciousness (Ludwig, 1969; Tart, 1975). Pekala synthesised these findings into 26 dimensions that will be discussed shortly. Vait et al. (2005) concluded that the majority of research suggests ASoCs occur spontaneously and are reflected by alterations in the brain systems that are responsible for the regulation consciousness, arousal and selective attention.

Some psychologists argue that attention is central to consciousness and so it has been suggested that ASoCs may develop in response to how attention is focused (Silverman, 1968). However, many different conceptualisations have been proposed. For example, Tart (1975) proposed that ASoCs are significantly different pattern structures between dimensions when compared to the normal waking state. Tart (1975) also proposed that, in ASoCs, the individual is phenomenologically aware of being in a different state of awareness. Ludwig (1969) conversely defined ASoCs as:
“Any mental state(s), induced by various physiological, psychological, or pharmacological manoeuvres or agents, which can be recognised subjectively by the individual himself (or by an objective observer of the individual) as representing a sufficient deviation in subjective experience or psychological functioning from certain general norms for that individual during alert, waking consciousness” (pp9-10).

Rock and Kambouropoulos (2008) claimed that Ludwig did not operationalise what constitutes a sufficient deviation from usual experience in the above definition. The authors also criticised Krippner’s (1972) definition of ASoCs that suggested that ASoCs are mental states which are recognised (by the individual or objective observer) as being different from usual psychological functioning in a normal state. Rock and Kambouropoulos (2008) argued that no reference was made to whether it is the intensity or patterns of consciousness that differ from normal states in Krippner’s (1972) definition. According to Rock and Kambouropoulos (2008), Krippner (1972) also did not define what was meant by a mental state or ‘normal’ state of consciousness.

Ludwig (1972 cited by Pekala, 1991) argued that the majority of ASoCs include features of:

“alterations in thinking, disturbed time sense, loss of control, changes in emotional expression, body image changes, perceptual distortions, changes in meaning/ significance, sense of ineffable, feelings of rejuvenation and hypersuggestibility”(p. 41 cited in Pekala, 1991, p. 4).

Martindale (1981) indicated that ASoCs share a number of similarities that can often include: altered cognitive processing (unable to structure or analyse information in the usual manner and memory is often poor), changes in the way the self is experienced, a loss of normal inhibitions and increased susceptibility to the suggestion from others, perceptions distinct from external reality, and data in consciousness may be more vivid. Some of these features of ASoCs have been reported to occur during play by EGM gamblers e.g. disturbed time sense, impaired control, and alterations in thinking (Baron et al., 1995; Wood & Griffiths, 2007b).
According to the problem gamblers included in study 2 of the current dissertation, the most commonly reported subjective experience of within-session play reflected feelings of being in a trance-like state.

The term trance has eluded a simple definition (Inglis, 1989). Pekala and Kumar (2000) have previously argued that both trance and hypnosis are ASoCs. However, there is significant controversy in the contemporary field of hypnosis as to whether or not it involves an altered/trance state, which may be responsible for the heightened suggestibility manifested in hypnotised clients. A number of authors have suggested trance is an ASoC, and that people can experience a natural trance state during non-hypnotic contexts, such as daydreaming, focused attention or concentration (Carich, 1990; Hasegawa & Jamieson, 2002; Kumar, Pekala, & McCloskey, 1999; Pekala & Kumar, 2000). For example, Carich (1990) suggested that trance is a heightened focus on internal or external cues.

The literature does not agree on the nature of trance or the criteria for determining if a trance state has or has not occurred (Pekala & Kumar, 2000). These limitations may have limited the extent to which researchers have been previously able to explore this phenomenon during EGM play. To establish if there is an alteration in consciousness involved in the generation of problem EGM gambling then it is imperative that ASoCs are defined and operationalised. Hammon (1988 cited by Carich, 1990) reported 4 basic levels of hypnotic trance that ranged from a light trance (characterised by basic mental and physical relaxation) through to a plenary trance (characterised by a lack of body awareness, loss of identity, decreased arousal and a lack of awareness of the external world). These basic levels of trance may be useful when conceptualising the trance-like experiences problem gamblers report since there is disagreement in the literature as to the extent problem gamblers experience dissociative-like experiences (Allcock, 2006a). Pekala and Kumar (2000) attempted to operationalise trance during hypnosis because they believed it is possible to operationally define and assess stages and ASoCs using the Phenomenology of Consciousness Inventory (PCI).
9.4 A Method of Capturing EGM Players’ Phenomenological Experience

To date, research has been conducted to explore the prevalence of EGM players’ within-session experiences of dissociation, but no attempt has been made to determine the actual patterns and intensity of ASoCs during EGM play. Thus, one might suggest that previous research has been investigating variable X without first determining what variable X is.

According to Pekala (1991), the emergence of cognitive psychology and a renewed interest in consciousness (Hilgard, 1980 cited by Pekala, 1991) has increased the acceptability of introspection. The phenomenology of a person’s experience is subjective and “that which is subjective is internal, personal, not available to for public scrutiny” (Reber & Reber, 2001, p. 720 cited by Rock & Kambouropoulos, 2008, p. 133). As a result of this renewed interest, a number of phenomenological measures have been used to quantify the subjective effects of various stimuli believed to induce ASoCs (Rock & Kambouropoulos, 2007). Pekala (1991) indicated that when attempting to quantify phenomenological experiences, components of attention, major subsystems, structures, and schemas of consciousness should be defined and measured. Vait et al. (2005) argued that the aim of the phenomenology of ASoCs is to provide a basic reference system of the dimensions of consciousness, as opposed to including every specific detail of the experience. Pekala and Kumar (2000) believe the Phenomenology of Consciousness Inventory (PCI) quantifies the intensity and pattern parameters of states of consciousness associated with altered state induction procedures, such as fire walking and hypnosis. Thus, following on from Jacobs’ (1986) theory and reports from EGM players’, gambling on EGMs was hypothesised to act as an induction procedure for ASoCs.

9.4.1 Ronald Pekala’s (1991) Phenomenology of Consciousness Inventory and Dimensions of Attention Questionnaire

Pekala (1991) described the Phenomenology of Consciousness Inventory (PCI) that was based on 26 elements of consciousness, as well as the Dimensions of Attention Questionnaire (DAQ) that designed to capture 12 dimensions of attention. Both the PCI and DAQ are state (as opposed to trait) measures (Pekala, 1991).
The PCI is a 53-item inventory that retrospectively quantifies the phenomenology of subjective experience in terms of pattern parameters (e.g., Tart, 1975 cited by Pekala, 1991) and intensity parameters (Singer, 1977 cited by Pekala, 1991). The PCI assesses 12 dimensions of consciousness with 5 of the dimensions having two or more (sub) dimensions. Pekala (1991) claimed that the PCI quantifies “both the major contents of consciousness, and the processes or means by which these contents are illuminated, cognised, perceived, and so forth by consciousness” (p. 82). The PCI is typically answered in reference to a stimulus condition, such as hypnotic induction, which is compared to a baseline condition, such as sitting with one’s eyes open. The responses from a 7-point likert scale are averaged to create an intensity score for each of the dimensions.

The 12 dimensions of consciousness and the corresponding (sub) dimensions measured by the PCI are described in Table 9.1. The PCI has good psychometric properties, with good internal consistency (coefficient alphas ranging between 0.7 and 0.9) on the various dimensions (Pekala, 1991; Pekala, Steinberg, & Kumar, 1986). The data derived from the PCI can be used to construct graphs called ‘psygrams’ which map the patterns and strength of relationships between pairs of the PCI major dimensions. Thus, a psygram can be constructed for each stimulus condition and a statistical test (Jennrich, 1970 cited by Pekala, 1991) can be conducted to determine whether there is a statistically significant difference between the conditions.

The PCI has been employed in numerous studies, some of which have investigated the phenomenological experience during progressive relaxation (Pekala, Forbes, & Constrisciani, 1989), hypnosis (Kumar & Pekala, 1989; Kumar et al., 1999; Pekala & Kumar, 1984, 1986, 1989), sitting with eyes closed (Pekala & Kumar, 1989), and shamanic-like journeying experiences (Maurer, Kumar, Woodside, & Pekala, 1997; Rock, Abbott, Childargushi, & Kiehne, 2008; Rock, Casey, & Baynes, 2006).
<table>
<thead>
<tr>
<th>PCI Major Dimension</th>
<th>PCI (Sub)Dimension</th>
<th>Dimension Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altered Experience (AE)</td>
<td>Altered Body Image (BI)</td>
<td>Extent feelings of body expand into the world</td>
</tr>
<tr>
<td></td>
<td>Altered Time Sense (TS)</td>
<td>Extent time flow changes</td>
</tr>
<tr>
<td></td>
<td>Unusual Meanings (MN)</td>
<td>Extent person reports experiences that might be labelled transcendental, etc</td>
</tr>
<tr>
<td></td>
<td>Altered Perception (PE)</td>
<td>Extent changes in perception of the world</td>
</tr>
<tr>
<td>Positive Affect (PA)</td>
<td>Joy (JY)</td>
<td>Extent feelings ecstasy and extreme happiness</td>
</tr>
<tr>
<td></td>
<td>Sexual Excitement (SE)</td>
<td>Extent of intense sexual feelings</td>
</tr>
<tr>
<td></td>
<td>Love (LO)</td>
<td>Extent feelings of love and loving-kindness</td>
</tr>
<tr>
<td>Negative Affect (NA)</td>
<td>Fear (FE)</td>
<td>Extent very frightened/ scared or afraid</td>
</tr>
<tr>
<td></td>
<td>Anger (AN)</td>
<td>Extent very angry or upset</td>
</tr>
<tr>
<td></td>
<td>Sadness (SD)</td>
<td>Extent very sad or unhappy</td>
</tr>
<tr>
<td>Attention (ATT)</td>
<td>Direction (DR)</td>
<td>If attention is directed towards internal subjective experience or environment</td>
</tr>
<tr>
<td></td>
<td>Absorption (AB)</td>
<td>If absorbed in what doing as compared to being continually distracted</td>
</tr>
<tr>
<td>Imagery (IM)</td>
<td>Amount (IA)</td>
<td>Amount of imagery</td>
</tr>
<tr>
<td></td>
<td>Vividness (IV)</td>
<td>Extent to which visual imagery is vivid, 3-dimensional or clear like objects in real world</td>
</tr>
<tr>
<td>Self Awareness (SA)</td>
<td></td>
<td>Extent aware of self vs. no awareness of being aware of self</td>
</tr>
<tr>
<td>State of Awareness (AS)</td>
<td></td>
<td>Extent experience extraordinary or unusual state vs. normal state of awareness</td>
</tr>
<tr>
<td>Internal Dialogue (ID)</td>
<td></td>
<td>Extent silently talking to self</td>
</tr>
<tr>
<td>Rationality (RA)</td>
<td></td>
<td>Extent thinking clear and rational vs. non-rational</td>
</tr>
<tr>
<td>Volitional Control (VC)</td>
<td></td>
<td>Extent control over what attending to</td>
</tr>
<tr>
<td>Memory (ME)</td>
<td></td>
<td>Extent can remember most of experience vs. not being able to remember</td>
</tr>
<tr>
<td>Arousal (AR)</td>
<td></td>
<td>Extent of muscular tension</td>
</tr>
</tbody>
</table>
Three of the major dimensions (positive affect, negative affect and imagery) and three of the minor dimensions (altered body image, unusual meanings and altered perception) that are included in the PCI do not appear to be directly relevant to EGM player’s phenomenological experience. In order to maintain the credibility of the survey in the eyes of participants these dimensions were not included in the current study. Since this was only an exploratory study, future research may want to include the additional dimensions to establish a complete profile of EGM players’ phenomenological experience.

As described above, attention has played a focal role in theories on consciousness (Pekala, 1991). Pekala (1991) concluded from the consciousness literature that there are 12 dimensions of attention that may be influenced by ASoCs induction procedures. Thus, these dimensions of attention are included in the DAQ. The dimensions of attention identified by Pekala (1991) are described in Table 9.2.

The Dimensions of Attention Questionnaire (DAQ; Pekala, 1991) is a 40-item inventory that assesses the 12 dimensions of attention. Similar to the PCI, the items included in the DAQ are two statements separated by a 7-point likert scale. Each dimension derives a score by averaging all of its items. The internal reliability of the DAQ is good (Pekala, 1991).

The research that has indicated that problem EGM gamblers experience narrowed attention when playing on EGMs indicates that changes in attention may be responsible for inducing ASoCs (Diskin & Hodgins, 2001). Therefore the DAQ was also included in the current study because it consisted of more aspects of attention than those in the PCI. The current study only addressed seven of the 12 dimensions because of the exploratory nature of the study and the fact that they were more relevant to aspects of EGM players’ attention; simultaneity, density, vigilance, absorption, direction and detachment.
Table 9.2

*Dimensions of attention included in the DAQ (Pekala, 1991)*

<table>
<thead>
<tr>
<th>Attention Dimension</th>
<th>Dimension Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>Extent attention is flexible</td>
</tr>
<tr>
<td>Equanimity</td>
<td>Extent person is able to equally attend all thoughts, feelings, etc</td>
</tr>
<tr>
<td>Detachment</td>
<td>Extent attention is detached/distant from thoughts, feelings, etc</td>
</tr>
<tr>
<td>Perspicacity</td>
<td>Extent person feels their attention is simultaneously everywhere</td>
</tr>
<tr>
<td>Locus</td>
<td>Extent attention is contained within or out of the body</td>
</tr>
<tr>
<td>Direction</td>
<td>Extent attention is either directed internally or out to the environment</td>
</tr>
<tr>
<td>One-pointedness</td>
<td>Like what might occur in concentrative meditation</td>
</tr>
<tr>
<td>Absorption</td>
<td>Extent person is absorbed in what they are doing vs. is distracted</td>
</tr>
<tr>
<td>Control</td>
<td>Extent able to control where attention is directed to</td>
</tr>
<tr>
<td>Vigilance</td>
<td>Extent person observes everything in their visual field</td>
</tr>
<tr>
<td>Density</td>
<td>Extent attentional field contains thoughts feelings, etc</td>
</tr>
<tr>
<td>Simultaneity</td>
<td>Extent aware of sensations, thoughts, etc</td>
</tr>
</tbody>
</table>

9.5 *Aims of the Current Study*

The central purpose of the study was to collect quantitative data on the phenomenological experiences of both regular and problem EGM players. To date, there has been no attempt to define the phenomenology of EGM play. The current study addressed this
lack of research by exploring what people experienced during EGM play, more specifically, the constituent states (phenomenological elements) of consciousness.

There is debate in the literature about the extent to which gambling can lead to ASoCs (e.g. experiences of dissociation) of clinical relevance, and whether these ASoCs genuinely influence people’s ability to control their gambling behaviours. Thus, one practical implication of this work was to gain an understanding of the extent to which gambling may influence people’s mental states as it might be assessed in legal context, i.e. does gambling cause a genuine disruption to people’s capacity to make rational decisions?

9.6 Hypotheses

1) Regular gamblers will demonstrate ASoCs after playing EGMs, as compared to a baseline eyes open condition.

2) Problem gamblers will experience greater levels of ASoCs after playing EGMs, as compared to regular and moderate risk gamblers.

9.7 Methodology

9.7.1 Sample characteristics

The participants from chapter eight had the option of indicating if they would be available to participate in future research. The sample included in the current study is drawn from this previous study and thus included people aged 18 years or older and in the local community (Adelaide metropolitan area). Potential participants were sent information sheets (Appendix F) that outlined the current study and included the researcher’s contact details. The researcher made telephone calls two weeks after the information sheet was mailed to enquire if people would like to take part in the study. If participants were willing to participate then they were asked a number of screening questions over the telephone to determine their eligibility for the study (see telephone screening questions in measures section below). The current study had a number of recruitment problems. The majority of potential participants contacted by the
researcher indicated that they would not participate because they wanted to be remunerated more than a $25 ColesMyer voucher. There were also problems regarding which venues potential participants could attend i.e. transport and location issues. The researcher had previously gained cooperation from the Australian Hotels Association through GamingCare who had assisted in finding venues who were willing to have the study conducted on their premises. Some potential participants could only attend certain venues that the researcher had not approached for permission, and thus were excluded from the study.

A total of 14 people participated in the study (8 females, 6 males). Participants ranged in age from 29 to 74 years, with a mean age of 57.71 (SD = 12.46). The same demographic questions were asked as study 2, regarding socio-economic status, nationality and relationship status. Socio-economic status was again indirectly measured by level of education obtained, current work status as well as average household income per year.

Four participants did not provide demographic information. The majority of participants were born in Australia (64.3%) and the United Kingdom7.1%. The majority of participants were married (57.1%), one person reported living with a partner (7.1%) and another reported that they had never married (7.1%). Under half of the sample was retired (42.9%), with two people working full time, and another two participants unable to work (14.3%). Three participants reported that they did not know their average income (21.4%), two participants reported (in each category) earning between 12,000 and 20,000 (14.3%) and 40,001-50,000 (14.3), and one in each 20,000-30,000 (7.1%) and 30,000-40,000 (7.1%) and 50,000- 60,000 (7.1%) categories.

9.7.2 Procedure

Potential participants were sent a letter of invitation and information sheet that detailed the study, with the contact details of the researchers. A telephone call was made to potential participants two weeks after the mail out to establish who was willing to participate. If consent was given, participants were screened over the phone (see telephone screening questions in measures section below). A time to meet at a mutually convenient poker-machine venue was then arranged. The researcher supplied participants with the information sheet and completed
the consent form. On three occasions multiple participants were briefed and completed the conditions and surveys at the same time. The remaining participants were assessed singularly.

Participants first completed the Baseline condition, which consisted of sitting quietly for three minutes with their eyes open and randomly thinking. This assessed participants’ attention experiences associated with normal waking consciousness (as opposed to an eyes closed baseline condition commonly used to examine subjective experiences more akin to daydreaming) (Pekala, 1991). Immediately following the Baseline condition participants completed a survey that was retrospectively related to the Baseline condition. The first survey consisted of the PCI and DAQ dimensions from the relevant form 1 of the inventories, in addition to questions adapted from Jacobs (1988). The EGM condition then followed the Baseline condition, whereby participants were instructed to play naturally on EGM(s) of their choice for 20 minutes. Participants were able to play as many machines as they liked, and drink alcohol if this was their usual behaviour; the researcher noted these behaviours. Participants were informed that they should try and forget they were participating in a study and that the researcher would approach them after 20 minutes. The researcher was in another area so that participants were not self-conscious of being observed. The EGM condition lasted for 20 minutes because respondents in chapter six reported that this was the length of time usually required before they experienced a trance-like state. However, feedback from the two problem gamblers suggested that 20 minutes was not long enough for them to experience any significant alterations since they usually played for a substantially longer period. Pekala (1991) stated that it is difficult to know which state of consciousness was assessed when long experimental periods are used, and to date experimental conditions have not been longer than 20 minutes. As a result, participants were instructed to immediately complete the second form of the survey (which included dimensions from form 2 of the PCI and DAQ: Appendix G) in relation to the last two to four minutes of the EGM condition. The Baseline and EGM conditions were counterbalanced. Participants were remunerated with a $25 ColesMyer giftcard at the completion of the study.

9.7.3 Survey design

Relevant dimensions of the PCI and DAQ were included in the survey. Both the PCI and DAQ have two forms, with items randomly placed in both versions to circumvent
obtaining a response bias across the two conditions. Consequently two versions of the survey were used, with Jacobs’ (1988) adapted dissociation questions also randomly placed.

9.7.3.1 General Measures

9.7.3.1.1 Telephone screening questions

In order to determine the eligibility for the study, potential participants were first screened over the telephone. Participants had to be 18 years or older and to have played EGMs at least once a month over the past 12 months for time periods of at least 20 minutes. These questions were asked to establish if they were regular EGM players and that they played for approximately the same time as the study required (see ethical considerations). People were also not eligible if they were currently trying to abstain from gambling, were in gambling-related treatment (or had been in the past 12 months), and/or had been self-barred from gambling venues. These questions were asked in order to determine if participating in the study could have potentially negative consequences for the individual (see ethical considerations).

9.7.3.1.2 Demographic information

Participants were asked brief questions over the telephone consisting of demographic questions in relation to: age, gender, education level, relationship status, annual gross income and country of birth. These items were those used by the Gambling Prevalence in South Australia 2005 Report (South Australian Department for Families and Communities, 2006).

9.7.3.1.3 Gambling participation

Participants were asked how often they participated on a number of different gambling modalities. These questions were the same as those used in chapter eight.
9.7.3.1.4 Within-session behaviours

The researcher recorded whether participants had won or lost money during the experimental condition, how many machines they had played, and if they had received any special features i.e. free spins. Since alcohol may induce ASoCs they were also asked if they had consumed any alcohol.

9.7.3.2 Psychological measures

9.7.3.2.1 PCI

The Phenomenology of Consciousness Inventory (Pekala, 1991) is a 53-item that retrospectively quantifies the phenomenology of subjective experience in terms of pattern parameters and intensity parameters. The PCI assesses 12 dimensions of consciousness, with 5 dimensions having two or more sub dimensions. Five pairs of reliability items are also included to assess intraindividual reliability. The PCI is completed in reference to a previous stimulus condition. Each item included in the PCI consists of two statement separated by a 7-point likert scale ranging from 0= not at all to 6= completely true. The PCI consists of two forms composed of the same items arranged in different sequences e.g. participants receive form A after the baseline condition and form B after the experimental condition.

The 12 dimensions assessed by the PCI and their corresponding (sub) dimensions were previously described in Table 9.1 of the current chapter. Positive affect, negative affect and altered body image, unusual meaning and altered perception were not included in the survey. The PCI has been used in reference to time periods from two to four minutes because longer time periods are believed to be problematic. This is because there may be various changes in subjective experience over longer time spans and people tend to remember the beginning and end due to recency and primacy effects (Pekala, 1991).

Averages for each dimension can be computed either manually or by using a computer program. The dimensions in the current study were manually scored with subjects placing their responses on the survey itself (circling the number that best represented the experience), which the researcher then transferred onto scoring sheets and manually computed intensity and
reliability index scores. Reliability scores below two are acceptable (Pekala, 1991). The reliability indexes for all of the participants (both surveys) were within the acceptable range. A computer program is available (Pekala & Kumar, 1985 cited by Pekala, 1991) to test correlation matrixes between pairs for significant differences between conditions using the Jennrich (1970 cited by Pekala, 1991) test. The small sample size included in the current study and the cited aims of the study did not warrant this analysis.

9.7.3.2.2 DAQ

The Dimensions of Attention Questionnaire is a 40-item inventory that assesses the 12 dimensions of attention with three items included in each dimension. Similar to the PCI, the items included in the DAQ are two statements separated by a 7-point likert scale (between 0= not at all to 6= completely true). It also consists of two forms with identical items arranged in different sequences and 5 items used to assess intraindividual reliability. Each dimension derives a score by averaging all of its items. The DAQ can also be manually scored, as was done in the current study. None of the participants’ reliability index scores were above 2, which indicate that the reliability indexes for all of the participants (both surveys) were within the acceptable range.

The 12 dimensions of attention addressed by the DAQ are described in Table 9.2. The following dimensions were included in both of the surveys used in the current study: detachment, direction, absorption, control, vigilance, density and simultaneity.

9.7.3.2.3 CPGI

The nine diagnostic items from the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) were included in the current survey. Participants were asked to respond to a series of items relating to gambling impacts and behaviours in the previous 12 months. Each item was scored on a 4 point scale where 0 = never, 1 = sometimes, 2 = most of the time, and 3 = almost always. Gamblers were categorised on the basis of their scores into non-problem gamblers (score of 0), low risk gambling (score of between 1 and 2.5), moderate risk gambling (score between 3 and 7.5) and problem gambling score of between 8 and a maximum of 27). The Cronbach’s Alpha for this scale within the current sample was acceptable at 0.93.
9.7.3.2.4 Jacobs’ Dissociation Questions

Jacobs (1988) devised four questions to investigate experiences of dissociation whilst gambling that are scored on a 4-point likert scale ranging from never having the experience to frequently having the experience whilst gambling. The first question aimed to determine if gamblers experienced trance like states whilst gambling: “After a gambling episode, did you ever feel like you’d been in a trance?” The second question, “When you gambled did you ever feel like you had taken on another identity?” aimed to establish if gamblers experienced alternate identities whilst gambling. The third question focused on experiences of depersonalisation, “While gambling did you ever feel like you were outside yourself-watching yourself gamble?” The fourth question was interested in tapping into experiences of amnesia whilst gambling: “Have you ever experienced a memory blackout for a period when you had been gambling?” These questions are regularly used in research to investigate dissociative experiences whilst gambling. In addition to Jacobs’ four questions, Gupta and Derevensky (1998) proposed an additional question: “Have you ever lost all track of time when you have been gambling” in order to gain further insight into dissociative experiences whilst gambling. These questions were reframed so they were relevant to both the baseline and experimental conditions and used a 7-point likert scale (refer to Appendix G).

9.7.4 Ethical considerations

The issue of informed consent was addressed by providing participants with an information sheet describing the overall purpose of the study, what was required of them, and any potential risks/benefits associated with participation in the study. Participation was voluntary and they were informed that they could withdraw from the study at any time (Kvale, 1996).

The confidentiality of participants was preserved by not reporting any private identifying data through the process of randomly allocating each participant with an identification number. Data was stored in a secure facility and was only available to the researcher. Participants were informed they could obtain feedback if they so desired.
The information sheet supplied to participants contained the contact numbers of counselling services and the Gambling Helpline, in case they experienced any psychological distress as a result of participation in the study. They were also provided with pamphlets about the nature of problem gambling and comorbid problems such as depression and alcohol misuse, and gambling-specific treatment services available in the local areas. No participant displayed any significantly altered levels of conscious on the measures provided.

Participants were excluded from the study if they did not normally spend 20 minutes or more playing EGMs as they were not expected to use more money than what they would in a regular gambling session. Participants were also not included if they were actively seeking to stop their gambling or were in treatment (or had been recently) for problem gambling. This was so that participation in the study did not acerbate gambling problems in people who were actively trying to reduce or stop their playing. Both of the two CPGI identified problem gamblers denied experiencing any problems and were not receptive to seeking treatment. However, they both took the problem gambling information packages.

9.7 Overview of Results Section

The results section begins by describing the sample’s gambling participation and gambling classification. The within-session behaviours that may have influenced the participants’ phenomenological experiences are then described. Reliable Change Indicators (RCI) and Wilcoxon Signed Rank Tests that were used to investigate the aims of the study are then reported

9.8.1 Gambling participation

All of the participants reported gambling on EGMs at least once a month over the past 12 months, with seven participants reporting that they played at least twice a month, and an additional seven reporting that they played poker machines at least once a week or more frequently. No one reported playing cards at home for money, gambling on the internet or participating in any other form of gambling not listed in the survey. Table 9.3 provides the frequency of the sample’s gambling participation across a range of gambling activities.
Table 9.3

*Gambling frequency across a range of gambling modalities (N=14)*

<table>
<thead>
<tr>
<th>Gambling Activity</th>
<th>Never</th>
<th>1-2 times per year</th>
<th>3 times a year up to monthly</th>
<th>2-3 times per month</th>
<th>Weekly or more often</th>
</tr>
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<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Racing (horses, dogs, trots)</td>
<td>7 (50.0)</td>
<td>4 (28.6)</td>
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<td>-</td>
<td>3 (21.4)</td>
</tr>
<tr>
<td>Scratch tickets</td>
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<td>3 (21.4)</td>
<td>8 (57.1)</td>
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<td>-</td>
</tr>
<tr>
<td>Lottery games</td>
<td>1 (7.1)</td>
<td>1 (7.1)</td>
<td>6 (42.9)</td>
<td>-</td>
<td>6 (42.9)</td>
</tr>
<tr>
<td>Keno</td>
<td>7 (50.0)</td>
<td>5 (35.7)</td>
<td>1 (7.1)</td>
<td>1 (7.1)</td>
<td>-</td>
</tr>
<tr>
<td>Casino tables</td>
<td>11 (78.6)</td>
<td>3 (21.4)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bingo</td>
<td>11 (78.6)</td>
<td>1 (7.1)</td>
<td>1 (7.1)</td>
<td>1 (7.1)</td>
<td>-</td>
</tr>
<tr>
<td>Sporting events</td>
<td>11 (78.6)</td>
<td>-</td>
<td>-</td>
<td>1 (7.1)</td>
<td>2 (14.3)</td>
</tr>
</tbody>
</table>

- = n.a.

9.8.2 Gambling classification

The Canadian Problem Gambling Index was used to classify participants into three groups of gamblers: non-problem gambler (score of 0 to 2.5), moderate risk gamblers (scores between 3 and 7.5) and probable problem gamblers (scores between 8 and 27). Total CPGI scores for the current sample ranged from 0 to 17 with a mean of 3.29 (SD = 4.79). A variable was created to reflect participants’ classification of gambling severity by separating the total CPGI score variable into appropriate categories of risk. The majority of participants were classified as no or low risk problem gamblers (N= 10, 71.4%), two people as moderate-risk gamblers (14.3%) and two were classified as problem gamblers (14.3%). Both of the problem gamblers were female, and both a male and female participant was classified as moderate-risk gamblers.
9.8.3 Within-session behaviours

A total of seven participants reported that they lost money playing the EGM(s) during the experimental condition, with the amount ranging between $7 and $25 ($M = 11.43, $SD = 6.19). The remaining seven participants reported that they won between $4 and $38 during the experimental condition ($M = 15.86, $SD = 11.96). Over half of the participants reported that they received free spins during their play period ($N = 9, 64.3\%)$, and 10 (71.4\%) reported that that they had received other special features.

The majority of participants played on either one ($N = 5, 35.7\%)$ or two ($N = 7, 50.0\%)$ machines during the experimental condition. One participant reported playing three machines, and another played five machines.

Two participants reported that they drank alcohol during the experimental condition (14.3\%), and this consisted of half a schooner of beer. Neither of the participants felt that their subjective awareness had been influenced by their consumption of alcohol.

9.8.4 Jacobs’ Dissociation Questions

The mean intensity scores based on Jacobs’ (1988) dissociation questions suggested that for the period of playing EGMs respondents reported higher levels of dissociation intensity than when compared to the sitting quietly with eyes open condition. Table 9.4 provides a profile for each of the participants mean intensity scores for Jacobs’ (1988) questions, the direction of change between conditions and the sample’s total mean intensity scores and standard deviations. As is demonstrated in Table 9.4, half of the sample reported increased feelings of taking on another identity ($N = 7$ out of $14$) and loosing track of time ($N = 7$ out of $14$) for the period of playing EGMs. Under half of the sample reported increased feelings of being in a trance ($N = 6$ out of $14$), being outside themselves watching themselves ($N = 6$ out of $14$), and having a memory blackout for the period of playing EGMs ($N = 6$ out of $14$). Table 9.4 also demonstrates that a small number of participants reported decreased feelings of dissociation for the period of playing EGMs (i.e. two/three participants for each type of dissociation) and under half of the sample reported no change between conditions. All moderate risk and problem gamblers except one reported increases in dissociation for the
EGM play condition. However, the small sample size does not allow any statistically meaningful conclusions to be drawn from this.
Descriptive statistics (Ms and SDs) and direction of change between conditions for Jacobs’ (1986) dissociative-like experiences questions

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1 M</td>
<td>T2 M</td>
<td>↑/↓</td>
<td>T1 M</td>
<td>T2 M</td>
<td>↑/↓</td>
<td>T1 M</td>
<td>T2 M</td>
<td>↑/↓</td>
<td>T1 M</td>
<td>T2 M</td>
<td>↑/↓</td>
<td>T1 M</td>
<td>T2 M</td>
<td>↑/↓</td>
</tr>
<tr>
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<td>↓</td>
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<td>↓</td>
<td>0 0</td>
<td>-</td>
<td>0 0</td>
<td>-</td>
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<td>-</td>
<td>1 0</td>
<td>-</td>
<td>2 ↑</td>
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<td>0 1</td>
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<td>↑</td>
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<tr>
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<td>1 0</td>
<td>↓</td>
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<td>1.36</td>
<td>↑</td>
<td>1.43</td>
<td>2.14</td>
<td>↑</td>
</tr>
</tbody>
</table>

N=14

a= Moderate risk gambler, b= Problem gambler
↑↓ Direction of change from time 1 (T1) to time 2 (T2), - = no change between conditions
Wilcoxon Signed Rank Tests were conducted to determine whether there was any significant changes in Jacobs’ dissociation mean scores for the period of playing EGMs i.e. comparing condition 1 rank scores to condition 2 rank scores. As recommended by Field (2005), the exact test was specified because of the small sample size. No significant findings were found. Upon examination of the asymp Sig (2-tailed) values, a change in the identity ranks reached significance. Identity was significantly lower for condition 1 ($Mdn= 0.00$) than condition 2 ($Mdn = 1.00$), $T = 6$, $p<.05$, $r= 0.38$ (medium effect size).

A preliminary examination of the $M$s and $SD$s reported in Table 9.4 suggested that there were changes in feelings of dissociation across the conditions, but they did not reach significance perhaps due to the small sample size. Table 9.5 provides the $Z$-scores and exact test associated probabilities from the Wilcoxon Signed Rank Tests.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$Z$ Value</th>
<th>$p$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trance $^a$</td>
<td>-1.50</td>
<td>.17</td>
</tr>
<tr>
<td>Identity $^a$</td>
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<td>.06</td>
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<tr>
<td>Awareness $^a$</td>
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<td>.18</td>
</tr>
<tr>
<td>Memory $^a$</td>
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<td>.27</td>
</tr>
<tr>
<td>Time $^a$</td>
<td>-1.13</td>
<td>.28</td>
</tr>
</tbody>
</table>

$^a$ Based on negative ranks

$N=14$

9.8.5 PCI Items

The descriptive statistics ($M$s and $SD$s) for the PCI items suggested that playing EGMs influenced the intensity ratings reported by respondents (as compared to the baseline condition; condition 1). Table 9.6 provides a profile of the participants’ responses for the PCI dimensions for both conditions 1 (Time 1) and 2 (Time 2).

Reliable Change Indices (RCIs) for changes in PCI intensity scores (Time 2 – Time 1) were calculated using the coefficient alphas for the PCI subscales reported by Pekala (1991).
The formula used to calculate the RCIs was recommended by Evans, Margison and Barkham (1998):

\[ Zc \cdot SD1 \cdot \sqrt{\frac{2}{\sqrt{1-r}}} \]

Zc represented the standard Z value for a 95% confidence interval (1.96), SD1= standard deviation of the measure at Time 1, and r= Cronbach’s Alpha or reliability coefficient for the scale at Time 1. Table 9.6 also indicates for each participant whether or not a RCI was achieved.

As predicted, half of the sample had RCIs for an increase in the altered time sense subscale for the period of playing EGMs (seven out of 14 participants), and just under half of the sample \((N = 6)\) had RCIs for increases in arousal. These findings are consistent with results from the prior chapters that suggested gambling produces arousal and that people report losing track of time whilst gambling. However, two participants had RCIs for decreases in both the altered time sense and arousal subscales. The above reported result which found that the sample experienced an alteration in memory was supported by the finding that five out of the 14 participants had RCIs for decreases on the memory PCI subscale. However, three participants had RCIs that demonstrated increases in their memory subscale. Also as predicted, four out of 14 participants had RCIs for decreases in their self-awareness (two participants had RCIs for increases) and three participants had RCIs for an altered state of awareness (one participant had a RCI for a decrease in score). Nearly half of the sample \((N= 6)\) had RCIs for decreases in their rationality mean intensity scores, also as predicted. Only one participant had a RCI for an increase in their rationality intensity score. Despite most of the significant findings going in the predicted direction, a large number of participants did not report any change between conditions. A preliminary examination of the direction of change in the moderate risk and problem gamblers dimensions scores did not demonstrate a consensus on the influence of EGM play on consciousness.
Table 9.6
Descriptives and direction of change between conditions for the PCI dimensions

<table>
<thead>
<tr>
<th>ID</th>
<th>Self Awareness</th>
<th>State of Awareness</th>
<th>Arousal</th>
<th>Rationality</th>
<th>Volitional Control</th>
<th>Memory</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.67</td>
<td>5.67</td>
<td>-</td>
<td>3.00</td>
<td>1.50</td>
<td>↓*</td>
<td>5.33</td>
</tr>
<tr>
<td>2</td>
<td>5.67</td>
<td>5.00</td>
<td>↓</td>
<td>0.33</td>
<td>0.67</td>
<td>↑</td>
<td>4.00</td>
</tr>
<tr>
<td>3</td>
<td>3.67</td>
<td>5.00</td>
<td>↑*</td>
<td>1.00</td>
<td>1.00</td>
<td>↓*</td>
<td>5.33</td>
</tr>
<tr>
<td>4</td>
<td>4.30</td>
<td>6.00</td>
<td>↑*</td>
<td>0.00</td>
<td>0.00</td>
<td>↓*</td>
<td>6.00</td>
</tr>
<tr>
<td>5</td>
<td>5.00</td>
<td>4.30</td>
<td>↓</td>
<td>0.30</td>
<td>0.70</td>
<td>↑*</td>
<td>5.70</td>
</tr>
<tr>
<td>6</td>
<td>4.00</td>
<td>5.00</td>
<td>↑</td>
<td>1.00</td>
<td>0.00</td>
<td>↓*</td>
<td>6.00</td>
</tr>
<tr>
<td>7a</td>
<td>5.00</td>
<td>3.33</td>
<td>↓*</td>
<td>1.00</td>
<td>5.00</td>
<td>↑*</td>
<td>5.00</td>
</tr>
<tr>
<td>8</td>
<td>5.53</td>
<td>0.00</td>
<td>↓*</td>
<td>0.67</td>
<td>5.67</td>
<td>↑*</td>
<td>5.33</td>
</tr>
<tr>
<td>9</td>
<td>5.33</td>
<td>4.67</td>
<td>↓</td>
<td>1.00</td>
<td>0.67</td>
<td>↓*</td>
<td>5.00</td>
</tr>
<tr>
<td>10</td>
<td>6.00</td>
<td>5.33</td>
<td>↓</td>
<td>5.00</td>
<td>1.00</td>
<td>↑*</td>
<td>6.00</td>
</tr>
<tr>
<td>11</td>
<td>6.00</td>
<td>6.00</td>
<td>↓</td>
<td>1.00</td>
<td>0.00</td>
<td>↓*</td>
<td>6.00</td>
</tr>
<tr>
<td>12a</td>
<td>4.33</td>
<td>2.33</td>
<td>↓*</td>
<td>1.00</td>
<td>4.33</td>
<td>↑*</td>
<td>4.00</td>
</tr>
<tr>
<td>13b</td>
<td>6.00</td>
<td>4.00</td>
<td>↓*</td>
<td>0.00</td>
<td>0.00</td>
<td>↑*</td>
<td>6.00</td>
</tr>
<tr>
<td>14b</td>
<td>3.67</td>
<td>4.67</td>
<td>↑</td>
<td>1.00</td>
<td>2.00</td>
<td>↑</td>
<td>5.00</td>
</tr>
</tbody>
</table>

| Total | M | 5.00 | 4.38 | 1.14 | 1.67 | ↑ | 0.89 | 2.14 | ↑* | 5.36 | 4.48 | ↓* | 5.09 | 4.43 | ↓ | 5.14 | 4.72 | ↓ | 1.93 | 3.10 | ↑* |

| (SD)  | 0.86 | (1.61) | (1.29) | (1.95) | (0.9) | (2.06) | (0.7) | (1.66) | (0.87) | (1.85) | (0.83) | (1.62) | (1.04) | (1.60) |

N=14

*a* = Moderate risk gambler, *b* = Problem gambler

↑/↓ Direction of change from time 1 (T1) to time 2 (T2), - = no change between conditions

↑/↓ * = Significant RCI change between T2 and T2
A series of Wilcoxon Signed Rank tests were also conducted to investigate if there were any significant changes in PCI intensity rating scores between conditions 1 and 2. Altered time sense scores were significantly higher for condition 2 ($Mdn = 2.85$) than condition 1 ($Mdn = 2.00$), $T = 21.50, p < .05, r = -0.37$ (medium effect size). The rationality scores at condition 1 were also significantly higher ($Mdn = 5.50$) than condition 2 ($Mdn = 5.00$), $T = 5.50, p < .05, r = -0.43$ (medium effect size).

Table 9.7 provides the results for the Wilcoxon Signed Rank tests for the PCI dimensions (exact test 2-tailed significance).

<table>
<thead>
<tr>
<th>PCI Dimension</th>
<th>Z Value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Awareness $^b$</td>
<td>-0.94</td>
<td>.37</td>
</tr>
<tr>
<td>State of Awareness $^a$</td>
<td>-0.71</td>
<td>.50</td>
</tr>
<tr>
<td>Arousal $^a$</td>
<td>-1.85</td>
<td>.07</td>
</tr>
<tr>
<td>Rationality $^b$</td>
<td>-2.26</td>
<td>.02*</td>
</tr>
<tr>
<td>Volitional Control $^b$</td>
<td>-1.25</td>
<td>.24</td>
</tr>
<tr>
<td>Memory $^b$</td>
<td>-0.62</td>
<td>.57</td>
</tr>
<tr>
<td>Time Sense $^a$</td>
<td>-1.95</td>
<td>.05*</td>
</tr>
</tbody>
</table>

$^a$ Based on negative ranks  
$^b$ Based on positive ranks  
N= 14, *<.05

9.8.6 DAQ items

The descriptive statistics ($M$s and $SD$s) for the DAQ items suggested that playing EGMs influenced the intensity ratings reported by respondents (as compared to the baseline condition; condition 1). Table 9.8 provides a profile of the participants’ scores on the DAQ dimensions at Time 1 and Time 2. RCIs were computed to identify any reliable changes in the DAQ items as described above.

Table 9.8 suggests that the majority of participants did not have any reliable changes in DAQ dimensions. Indeed, there were no RCIs identified in the attention control dimension. In
addition, of the four RCIs identified for the sample’s detachment scores, half of these represented increases in scores and the remaining represented decreases in scores. Four participants had RCIs for decreases in the density and vigilance dimensions (two participants in each category), and two participants had RCI for increases in scores between conditions (one participant in each category). The absorption and the direction dimensions each had five participants with RCIs for increases in scores between conditions, however, four participants had RCIs for decreases (two participants in each dimension). A total of five participants out of 14 had RCIs for decreases in simultaneity scores, with two participants having RCIs for increases in scores. These diverse findings make it difficult to interpret whether participants’ attention was consistently influenced by EGM play in the predicted directions. A preliminary examination of the direction of change in the moderate risk and problem gamblers attention dimensions scores again did not demonstrate any consensus on the influence of EGM play on attention.
Table 9.8

Descriptives and direction of change between conditions for DAQ dimensions

<table>
<thead>
<tr>
<th>ID</th>
<th>Simultaneity</th>
<th>Density</th>
<th>AC</th>
<th>Vigilance</th>
<th>Absorption</th>
<th>Direction</th>
<th>Detachment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1 M T2 M</td>
<td>T1 M T2</td>
<td>T1 M T2</td>
<td>T1 M T2</td>
<td>T1 M T2</td>
<td>T1 M T2</td>
<td>T1 M T2</td>
</tr>
<tr>
<td>1</td>
<td>3.25 4.00 ↑</td>
<td>4.75 3.75 ↓</td>
<td>5.00 4.33 ↓</td>
<td>3.75 2.50 ↓</td>
<td>0.67 3.33 ↑*</td>
<td>2.67 4.67 ↑*</td>
<td>2.70 2.00 ↓</td>
</tr>
<tr>
<td>2</td>
<td>5.25 4.25 ↓</td>
<td>3.50 3.00 ↓</td>
<td>5.67 4.00 ↓</td>
<td>4.50 2.80 ↓</td>
<td>2.00 2.67 ↑</td>
<td>4.00 3.00 ↓</td>
<td>0.00 2.00 ↑</td>
</tr>
<tr>
<td>3</td>
<td>3.75 4.00 ↑</td>
<td>5.25 4.00 ↓</td>
<td>3.75 5.00 ↑</td>
<td>2.67 3.00 ↑</td>
<td>5.00 2.33 ↓*</td>
<td>2.33 3.66 ↑</td>
<td>4.00 1.00 ↓*</td>
</tr>
<tr>
<td>4</td>
<td>2.25 6.00 ↑*</td>
<td>3.00 4.50 ↑</td>
<td>4.00 4.00 ↑</td>
<td>2.25 4.50 ↑</td>
<td>4.00 1.00 ↓*</td>
<td>6.00 1.00 ↓*</td>
<td>1.00 1.00 -</td>
</tr>
<tr>
<td>5</td>
<td>4.25 3.75 ↓</td>
<td>3.50 2.00 ↓</td>
<td>5.70 5.00 ↓</td>
<td>3.50 4.20 ↑</td>
<td>0.00 1.70 ↑*</td>
<td>1.30 2.70 ↑</td>
<td>1.70 2.70 ↑</td>
</tr>
<tr>
<td>6</td>
<td>2.25 4.50 ↑*</td>
<td>0.50 3.75 ↑*</td>
<td>5.00 6.00 ↑</td>
<td>1.50 4.00 ↑*</td>
<td>2.00 2.00 -</td>
<td>3.00 3.00 -</td>
<td>3.00 2.00 ↓</td>
</tr>
<tr>
<td>7 a</td>
<td>4.75 2.00 ↓*</td>
<td>4.75 2.00 ↓*</td>
<td>2.67 3.00 ↑</td>
<td>4.75 1.80 ↓*</td>
<td>2.00 4.00 ↑*</td>
<td>1.67 3.67 ↑*</td>
<td>2.30 3.70 ↑</td>
</tr>
<tr>
<td>8</td>
<td>5.50 0.50 ↓*</td>
<td>5.50 0.25 ↓*</td>
<td>4.33 2.67 ↓</td>
<td>4.00 0.30 ↓*</td>
<td>0.67 5.67 ↑*</td>
<td>3.67 5.67 ↑*</td>
<td>2.00 5.30 ↑*</td>
</tr>
<tr>
<td>9</td>
<td>4.25 3.25 ↓</td>
<td>2.50 2.50 -</td>
<td>1.33 1.67 ↑</td>
<td>2.25 3.30 ↑</td>
<td>1.33 1.33 -</td>
<td>2.33 2.33 -</td>
<td>1.70 2.30 ↑</td>
</tr>
<tr>
<td>10</td>
<td>5.00 2.50 ↓*</td>
<td>4.25 4.00 ↓</td>
<td>4.00 5.33 ↑</td>
<td>5.00 4.50 ↓</td>
<td>3.33 3.00 ↓</td>
<td>2.33 3.33 ↑</td>
<td>1.00 1.00 -</td>
</tr>
<tr>
<td>11</td>
<td>4.00 2.50 ↓*</td>
<td>4.50 3.25 ↓</td>
<td>4.00 5.00 ↑</td>
<td>3.00 3.80 ↑</td>
<td>2.67 3.33 ↑</td>
<td>3.00 2.33 ↓</td>
<td>1.00 3.00 ↑*</td>
</tr>
<tr>
<td>12 a</td>
<td>5.00 3.25 ↓*</td>
<td>5.50 3.50 ↓</td>
<td>3.67 3.00 ↓</td>
<td>3.75 4.50 ↑</td>
<td>1.33 2.00 ↑</td>
<td>3.67 2.00 ↓*</td>
<td>1.70 4.30 ↑*</td>
</tr>
<tr>
<td>13 b</td>
<td>4.50 1.50 ↓*</td>
<td>3.00 3.00 -</td>
<td>6.00 6.00 -</td>
<td>4.50 6.00 ↑</td>
<td>2.00 4.00 ↑*</td>
<td>2.00 4.00 ↑*</td>
<td>2.00 0.00 ↓*</td>
</tr>
<tr>
<td>14 b</td>
<td>3.25 3.50 ↑</td>
<td>3.25 4.25 ↑</td>
<td>2.67 2.67 -</td>
<td>1.75 3.00 ↑</td>
<td>3.00 2.00 ↓</td>
<td>2.33 4.00 ↑*</td>
<td>1.70 1.70 -</td>
</tr>
</tbody>
</table>

Total

| M     | 4.09 3.25 ↓ | 3.84 3.13 ↓ | 4.13 4.12 ↓ | 3.37 3.43 ↑ | 2.14 2.74 ↑ | 2.88 3.24 ↑ | 1.84 2.29 ↑ |
| (SD)  | (1.04) (1.38) | (1.38) (1.14) | (1.36) (1.34) | (1.15) (1.40) | (1.37) (1.25) | (1.18) (1.78) | (0.98) (1.44) |

N=14, *p<.05

a= Moderate risk gambler, b= Problem gambler
↑/↓= Direction of change from time 1 (T1) to time 2 (T2), - = no change between conditions
↑/↑*= Significant RCI change between T2 and T2
Wilcoxon Signed Rank tests did not find any significant differences between DAQ intensity rankings across condition 1 and 2. Table 9.9 provides the findings of the Wilcoxon Signed Rank tests.

### Table 9.9

<table>
<thead>
<tr>
<th>DAQ</th>
<th>Z Value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
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<td>Simultaneity a</td>
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<td>.15</td>
</tr>
<tr>
<td>Density a</td>
<td>-1.34</td>
<td>.20</td>
</tr>
<tr>
<td>Attentional Control a</td>
<td>-0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Vigilance b</td>
<td>-0.38</td>
<td>.73</td>
</tr>
<tr>
<td>Absorption b</td>
<td>-0.94</td>
<td>.37</td>
</tr>
<tr>
<td>Direction b</td>
<td>-1.34</td>
<td>.19</td>
</tr>
<tr>
<td>Detachment b</td>
<td>-0.94</td>
<td>.38</td>
</tr>
</tbody>
</table>

a Based on positive ranks  
b Based on negative ranks  
N = 14

### 9.9 Discussion

This is the first study to the researcher’s knowledge that has attempted to investigate the within-session phenomenological experiences of EGM players using a quantitative measure. Due to the exploratory nature of the study, and its limited sample size (because of recruitment difficulties), the findings from the study are only preliminary. Feedback from all of the potential participants regarding their decision not to participate related to their desire for a higher level of compensation, which the researcher could not provide. Parke and Griffiths’ (2002) opinion paper highlighted a number of alternative explanations on the difficulty of studying slot machine gamblers. The authors highlighted player-specific, researcher-specific and miscellaneous external factors which may impede research with this cohort. The explanation provided by the potential participants in the current study for their refusal is consistent with a “lack of incentive” (p. 3) described by Parke and Griffiths (2002). However, despite the small sample size the overall results appear to suggest that the phenomenological experience of EGM play is different to a baseline sitting with eyes open condition and provides support for hypothesis 1. Unfortunately, the small number of moderate risk and problem gamblers who participated in the study made it difficult to investigate the hypothesis as to whether there would be
differences between categories of gamblers on the different phenomenological dimensions. Consequently, the discussion will only address the findings related to the hypothesis that regular gamblers would demonstrate ASoCs after playing EGMs, as compared to normal consciousness.

A number of factors had the potential to influence the findings of the current study, some of which the researcher attempted to circumvent. For instance, the participants were encouraged to play as naturally as they could for a period of 20 minutes. The 20 minute experimental condition had been based on the previously reported qualitative findings which had suggested that problem gamblers usually played for approximately 20 minutes before they began to experience trance-like states. It was assumed that this amount of time would be sufficient for all of the participants to become engrossed in their gambling. However, regular non-problem gamblers may have required a longer period of time to experience any alterations in consciousness since their gambling was not as problematic, as compared to problem gamblers’ gambling. In addition, both of the problem gamblers in the current study reported to the researcher that they usually played for longer periods of time before they experienced trance-like sensations. It is possible that a greater number of differences on the various phenomenological dimensions may have reached significance if the participants had been allowed longer playing EGMs. Also, although the study had hypothesised that EGMs might act as ASoC induction technique for regular gamblers, it was also hypothesised that regular gamblers would not experience as demonstrable alterations in consciousness as problem gamblers. Therefore, it may have been possible to draw stronger conclusions about the small alterations in consciousness identified in the regular non-problem gamblers had comparisons been possible with individuals who had gambling problems.

There had been the potential for participants not to become engrossed in their EGM play if they had been constantly changing machines. The vast majority of the participants only played one or two machines during the experimental condition. This should have allowed the participants to adequately focus and become involved in their EGM play, which was essential when attempting to determine whether EGMs act as an ASoC induction technique. Another factor that may have influenced the findings was the consumption of any mind-altering substances. None of the participants consumed any substantial amount of alcohol while playing EGMs, nor had they consumed any alcohol prior to participating in the study. Also, none of the participants had played EGMs
immediately prior to meeting the researcher, nor appeared to be significantly fatigued or demonstrated any effects from the consumption of any other substances. Thus, the findings discussed below do not appear to be influenced by the effects of any mild-altering substances or fatigue.

9.9.1 Do regular gamblers experience ASoCs during EGM play?

A preliminary examination of the changes in intensity ratings for Jacobs’ (1988) adapted dissociation questions, the PCI items and also the DAQ items from condition 1 to 2 provide support for the idea that EGM play may alter players’ phenomenological experience.

The total sample mean intensity scores for all of Jacobs’ (1988) dissociation questions increased as had been predicted, and suggested that people experienced more dissociative-like reactions during EGM play than during normal consciousness. Approximately half of the sample was found to report significant increases in these dissociative-like experiences. However, the remaining participants did not report any changes at all and a small number of participants reported significant decreases in their levels of dissociative-like experiences. One explanation for this discrepancy may be the size of the sample and the number of moderate risk and problem gamblers included in the study. A larger proportion of participants may have reported significant increases in dissociative-like experiences had there been more at-risk gamblers included in the sample. Previous research has found that problem gamblers are more likely to report dissociative-like experiences than non-problem gamblers (e.g., Diskin & Hodgins, 2001; Gee et al., 2005; Kuley & Jacobs, 1988). These findings are also consistent with observations made by Griffiths (1991b, 1994) that EGM players appear to dissociate and go on ‘automatic pilot’ within session.

The only statistically significant comparison between conditions by the Wilcoxon Signed Rank Test on Jacobs’ (1988) questions was related to changes in identity during EGM play. This finding suggested that participants experienced a greater change in their identity while playing EGMs. The emphasis placed by Jacobs (1986) on the use of gambling as a method of fulfilling fantasies of being more successful and admired, may explain why an alteration in identity while playing the EGM(s) reached statistical significance. The changes that were evident in the other four dissociative-like experiences
may have also reached significance had there been a larger sample or if participants had played EGMs for a longer period.

In addition to the trend of increased dissociative experiences during EGM play (and a significant change in identity), the mean intensity ratings for both the PCI and DAQ dimensions for condition 2 also scored as might be expected if EGM play produces alterations in normal consciousness. For instance, the mean intensity ratings for self-awareness, rationality, volitional control and memory all decreased for the time period of playing EGMs, as would be expected during an ASoC. The increase in the total sample intensity ratings for altered state of awareness, arousal (increased muscular tension) and altered time sense were also in the predicted direction. In addition, the majority of the RCIs were also in these predicted directions. However, only a limited number of changes in the PCI intensity ratings between conditions reached significance using Wilcoxon Signed Rank tests. Altered time sense scores were significantly higher for the time period playing EGMs, as would be predicted. This finding is consistent with reports by EGM gamblers that suggest they have difficulty monitoring the passage of time during EGM play. Time sense might be altered because of the relationship between cognitive resource processing and time perception which suggests that cognitively demanding tasks have fewer resources available (Naish, 2001). Delfabbro (2006) argued that the sense of subjective time might be altered in any absorbing activity because temporal processing is based on allocation of cognitive resources. In addition, regular EGM gamblers’ levels of rationality were significantly lower during EGM play. This finding may assist in explaining why problem gamblers engage in chasing behaviours, as they are unable to make logical decisions.

The directions of the total mean intensity scores for the DAQ dimensions for the period of playing EGMs (as compared to normal consciousness) are also consistent with what might be expected during an ASoC. The simultaneity, density and attention control scores for the second condition were all lower than what was found during a usual state of consciousness. The total mean intensity ratings of detachment, direction, absorption and vigilance all increased in relation to playing EGMs. The changes in these particular dimensions (except increased vigilance) are consistent with research that has found that EGM gamblers report experiencing narrowed attention during EGM play (e.g., Diskin & Hodgins, 2001; Wood & Griffiths, 2007a). The majority of the RCIs were also in the predicted directions, however, only a small number of RCIs were identified. There were
also no significant differences between conditions identified by the Wilcoxon Signed Rank tests.

9.10 Summary of Chapter 9

Regular gamblers’ within-session phenomenological experiences appear to be different to normal waking consciousness. The findings from the current study are consistent with Vaitl et al. (2005) who proposed that ASoCs are characterised by subjective experiences of narrowed attention, decreased volitional potential and motivation, decreased memory and impaired cognition and time awareness. Support is provided for the use of the PCI and DAQ to quantify regular EGM players’ phenomenological experiences. However, the study’s small sample and time period employed in the experimental condition restricted the identification of more significant findings. Directions for future research based on this study are outlined in the final major discussion.
Chapter 10

Final Conclusions: A Summary of the Thesis Implications, Limitations and Directions for Future Research

10.1 Introductory Restatement

It has been proposed that people can develop gambling problems via a number of different processes. One method according to Blaszczynski and Nower’s (2002) Pathways Model of Problem gambling suggests that a subgroup of emotionally vulnerable people use gambling as a method of coping with stress and trauma (Pathway 2). This postulation is consistent with both anecdotal reports and some research evidence (Coman et al., 1997; Lightsey & Hulsey, 2002), although Pathway 2 has not employed a formal theoretical model. For this reason, the application of Jacobs’ (1986) theory was seen to both investigate Pathway 2, as well as assist in explaining why this group of people develop gambling problems. To the author’s knowledge there has been no attempt to investigate Jacobs’ (1986) theory within an Australian context, and there is limited research investigating the controversial issue of dissociation/dissociative-like experiences during gambling.

Accordingly, the major objectives of the thesis were to obtain a deeper understanding of the psychology of problem EGM gamblers and their within-session gambling experiences, using a sequential mixed methods approach. Each of the studies employed distinct methodologies and separate research aims to address these objectives. The methodologies were selected after consideration of their strengths, weaknesses and appropriateness in addressing the aims of the research. A preliminary study (study 1) obtained data concerning the prevalence of dissociative-like experiences in the South Australian community. Based on the finding that South Australian problem gamblers did indeed report having dissociative-like experiences during gambling, primarily in relation to EGMs, an explorative qualitative study was undertaken (study 2). The qualitative study was designed to capture problem EGM gamblers’ phenomenological experiences of problem gambling and was analysed using interpretative phenomenological analysis (IPA). The respondents’ life histories and gambling experiences were examined to allow for the identification of themes consistent with a
vulnerability model, as well as other psychological theories of gambling. Based on the qualitative findings and using Jacobs’ (1986) theory as a framework, a quantitative study (study 3) was then conducted. This study also examined potential protective-buffering variables due to the clinical focus of the thesis. A final pilot study (study 4) employed a quantitative measure to capture the phenomenological experiences of regular EGM players’ within-session gambling experiences, in order to enhance our understanding of the dissociative-like experiences during gambling. The findings from the two major studies (qualitative study 2 and the survey-based study 3) were afforded equal weighting in the final discussion because of the narrowly prescribed results obtained from the other two studies (Hanson et al., 2005). It was anticipated that the integration of the findings would enhance our current understanding of a subgroup of vulnerable EGM players and help inform clinical practice.

10.2 Summary of Findings: A Subgroup of ‘Vulnerable’ EGM Gamblers

Both of the major studies (study 2 and study 3) provided evidence to suggest that many EGM gamblers share characteristics that may make them vulnerable to the development of gambling problems. All of the studies provided evidence of EGM players experiencing something akin to altered states of consciousness or dissociative-like experiences during EGM play. These findings are consistent with Blaszczynski and Nower’s (2002) emotionally vulnerable category of gamblers and Jacobs’ (1986) General Theory of Addiction.

10.2.1 Personal/life histories of problem EGM gamblers

A number of researchers in the field of problem gambling have postulated that problem gamblers are more likely than non-problem gamblers to have experienced traumatic childhoods and/or stressful life events (Blaszczynski & Nower, 2002; Jacobs, 1986; Kausch et al., 2006; Scherrer et al., 2007). In Jacobs’ (1986) theory, the presence of a traumatic childhood/adolescence was one of the central features believed to predispose people to develop addiction. There has also been speculation that problem gamblers are more likely to have had early positive experiences with gambling (Darbyshire et al., 2001).

Both the major qualitative and quantitative studies produced evidence to support Jacobs’ (1986) postulation regarding problem gamblers’ traumatic childhoods. In addition,
problem gamblers also reported experiencing traumatic/stressful life events during adulthood. The major quantitative study found that problem gamblers (as compared to other categories of gamblers) reported significantly more experiences of childhood abuse and stressful/traumatic adult life events, with the second and third structural equation models supporting this finding. Problem gamblers in the qualitative study were able to expand on this and described how significant negative relationships and life events had affected their personal development prior to the onset of their problem gambling. Chapter 6 provided detailed descriptions of these negative life events and the common theme that problem gamblers were unable to cope with these experiences.

Jacobs (1986) hypothesised that individuals with two interrelated sets of predisposing factors were more inclined to develop addictions than others when they came into contact with specific types of activities/substances in enabling environments. The second predisposing factor was of a “psychological nature” (p. 17) and encompassed an individual’s reactions to early social and developmental experiences that, resulted in a belief that they were “inferior, unwanted, unneeded and/or generally rejected by parents and significant others” (p. 17). Problem gamblers in the qualitative study described early experiences consistent with this predisposing factor, which had resulted in low self-esteem and feelings of rejection by important people in their lives. Examples of this included problem gamblers’ experiences of childhood physical and sexual abuse, their lack of attachment with parental figures and other unfulfilled key childhood psychological needs, and the traumatic relationships they endured during childhood. Blaszczynski and Nower (2002) also reported that emotionally vulnerable gamblers were characterized by negative family backgrounds and “developmental variables” (p.492). However, both major studies found that problem gamblers had also experienced significant negative events later in life which is in contrast to Jacobs’ (1986) primary focus on experiences during childhood and adolescence. This finding is consistent with Blaszczynski and Nower (2002) who also suggested that emotionally vulnerable gamblers might have a history of significant life events.

The findings from the major studies are also consistent with other research which has found that problem gamblers’ are characterised by significant psychological problems such as depression, anxiety and stress, as well as some cross addiction (Coman et al., 1997; MacCallum & Blaszczynski, 2002; Petry et al., 2005; Welte et al., 2004). Such psychological problems may have resulted from problem gamblers' negative life
experiences and/or the significant feelings of low self-esteem. Both of the structural equation models reported in the quantitative study (study 3) and the reports in the qualitative study (study 2) suggested that negative life events and psychological distress were positively associated with each other. The qualitative study found that respondents associated their negative life experiences with their psychological problems, and believed that these occurred prior to their gambling problems. The respondents also reported being less capable of coping with negative life events which may have resulted in the development of psychological problems. This is consistent with both Blaszczynski and Nower (2002) who reported that emotionally vulnerable gamblers usually have a history of poor coping, and Jacobs (1986) who argued that individuals who internalise feelings of inadequacy (due to early experiences) do not learn adequate coping skills. In addition, respondents in the qualitative study believed that their level of psychological distress increased because of their gambling problems. This suggests that problem gamblers may be characterised by premorbid high levels of psychological distress but that gambling also influences their psychological wellbeing.

The problem gamblers included in the qualitative study also highlighted the importance of early gambling experiences (chapter 7). The respondents’ reports suggested that problem gamblers have early experiences with gambling that encourage them to believe gambling is an acceptable and enjoyable activity, and these features reinforce the behaviour. This finding is consistent with Jacobs’ (1986) proposition that people who are introduced to gambling via a ‘chance encounter’ that alleviates an aversive state, encourages vulnerable individuals to have an optimistic expectation and memory about gambling which encourages future play. This may also explain why children of problem gamblers are more likely to develop problems (as demonstrated in the qualitative study) because they have had more opportunities for ‘chance encounters’ with gambling early in their development.
10.2.2 The centrality of a ‘need to escape’ construct, arousal and dissociative-like experiences/altered states of consciousness in the conceptualisation of problem gambling

It has been repeatedly suggested in the literature that people may gamble as a method of escape (for example, Brown, 1987; Custer & Milt, 1985; Hand, 1990 cited by Walker, 1992). Walker (1992) reported that the source of pain has usually been proposed to be physiologically or psychologically based. In Jacobs’ (1986) General Theory of Addictions these vulnerabilities were connected as interrelated predisposing factors for the development of addiction. The research conducted for this project suggested that problem EGM gamblers gamble in order to escape a number of features in their lives. The findings from the thesis also produced evidence which suggested that physiological arousal levels and dissociative-like experiences may be implicated in problem gambling because it allows problem EGM gamblers to alter and escape their reality. The findings from the final study supported this proposition and suggested that EGM gambling may induce an altered state of consciousness.

10.2.2.1 EGM gambling as fulfilling a need to escape or a form of avoidance coping

Both of the major studies produced evidence to suggest that problem EGM gamblers use gambling as a method of escaping their lives, which could explain why some people develop gambling problems. The major quantitative study produced evidence through the structural equation models that supported the centrality of a need to escape construct in the conceptualisation of problem gambling. The importance of the need to escape construct is also consistent with results reported by Gupta and Dervensensky (1998). The qualitative methodology in study 2 allowed problem EGM gamblers to elucidate this need to escape, where they described how they gambled to escape their negative emotions by a process of narrowing their attention to the machine. This focused attention and an expectation of winning elevated respondents’ mood and allowed them to escape from their problems and responsibilities.

A number of authors have reported that gambling may be used as a method of avoiding negative emotions (Blaszczynski & Nower, 2002; Dickerson et al., 1996; Jacobs, 1986; Wood & Griffiths, 2007a). In particular, pathological gamblers suffering from stress...
and anxiety, such as those in the current studies, may be more likely to focus their attention on low-skill gambling activities such as poker-machines (Coman et al., 1997). Wood and Griffiths (2007a) reported findings consistent with the current thesis when they proposed that gambling to escape was a core motivation of problem gamblers, and that this was achieved through a process of mood modification which usually involved dissociation produced by either engaging in fantasies and/or changing levels of arousal. Jacobs (1986) argued that problem gambling is maintained by allowing individuals to escape their reality and experience wish-fulfilling fantasies during play. Jacobs (1986) described how these effects appeared to be of a dissociative-like nature that allowed gamblers to escape aversive levels of arousal and psychological stress. According to Jacobs’ (1986) theory, people become addicted to both the positive reinforcement provided by the encouraging memories of gambling, and also the negative reinforcement of the avoidance of pain. The current thesis also provides support for Polusny and Follette (1995 cited in Smith, Davis, & Fricker-Elhai, 2004) who conceptualised high-risk behaviours, such as gambling, as a method of suppressing negative emotions associated with traumatic experiences. The authors argued that victims of traumatic experiences might focus on short-term benefits, such as feelings of escape, and thus may misperceive the level of risk.

Consistent with the results described above is the proposition that gambling is used as an avoidance coping mechanism which suggests that gamblers may significantly differ in their use of avoidant coping styles (Lightsey & Hulsey, 2002; McCormick, 1994; Shepherd & Dickerson, 2001). The results from the major quantitative study did not, however, find any significant differences in the levels of dispositional avoidance coping style between the different categories of gamblers, which suggest that further research is required to clarify any association.

10.2.2.2 EGMs are physiologically arousing

The final three studies provided evidence to suggest that physiological arousal may be implicated in problem EGM gambling, as has been previously suggested by other researchers (e.g., Blaszczynski & Nower, 2002; Jacobs, 1986; Moodie & Finnigan, 2005). For example, the qualitative study suggested that EGMs provided players with sensory stimulation, novelty and excitement, and a challenge for players who began to anticipate wins. One explanation for the respondents’ focus on the sensory stimulation could be because they find EGMs physiologically arousing. Moodie and Finnigan (2005) argued
that arousal is a key factor in fruit machine gambling, and that frequent gamblers report significantly higher levels of autonomic arousal than other categories of gamblers. Specialised features on the machines were reported to be as arousing as actual wins which is consistent with descriptions provided by the problem gamblers in the qualitative study (Moodie & Finnigan, 2005).

Of particular relevance to the current thesis’s findings is Sharpe’s (2002) proposition that stressful life events can result in a dysphoric mood, and that individuals can misinterpret this as increased arousal. Sharpe (2002) argued that when a person gambles for reasons of escape (such as what has been found in the current thesis), the associated arousal is misconstrued as representing excitement. Sharpe (2002) argued that this distortion becomes negatively reinforced and eventually develops into a coping mechanism. The negative consequences associated with problem gambling can then encourage further mood disturbances that result in future play, as was reported in the qualitative study. Blaszczynski and Nower (2002) also reported that problem gamblers may use gambling to relieve dysphoric mood states through the regulation of abnormal physiological resting states. The authors suggested that arousal becomes conditioned to stimuli associated within the gambling environment. Jacobs’ (1986) first predisposing factor in the General Theory of Addictions suggested that addicted individuals have abnormal physiological arousal levels and that gamblers try to regulate their aversive states of arousal through gambling. The findings from the current project are consistent with Jacobs’ (1986) proposition that abnormal physiological resting rates may be one of the pre-existing vulnerabilities in problem gamblers. However, the problem gamblers in the qualitative study did not articulate being aware of using gambling as a method of regulating their arousal, but implied its importance by the emphasis they placed on it when describing their playing experience. The major quantitative study produced findings to suggest that problem gamblers may prefer higher levels of arousal than other categories of regular gamblers, as measured by the intensity seeking subscale of Arnett’s Sensation Seeking Scale (Arnett, 1994) which is believed to reflect physiological arousal. Study 4 also produced evidence that indicated that when compared to a normal waking state, playing EGMs was generally found to increase levels of arousal in regular EGM gamblers.

The findings from the final study are similar to Yucha, Bernhard, and Prato (2007) who reported an experimental study that examined the physiological responses in women during slot machine play. The authors reported that female gamblers found slot machine
play physiologically arousing regardless of the financial stakes (Yucha, Bernhard, & Prato, 2007). However, Yucha, Bernhard and Prato (2007) noted that, although the increased arousal was consistent with an arousal response, they questioned whether this may be a reaction to increased attention/concentration during play. These findings have implications for the current research since the participants in the final study only gambled with small amounts of money, which may have been too small to produce higher levels of excitement in all categories of gamblers. This leads to the question as to whether the findings from study 4 may be due to increased attention/concentration during the experimental condition.

Anderson and Brown (1984) hypothesised that the physical arousal and subjective excitement associated with gambling may narrow attention and allow escape from emotional states. Jacobs (1982 cited by Jacobs, 2006) also reported that dissociative-like experiences may be associated with the “high sympathetic arousal” (p. 40) that is produced by gambling which may lead to “physiological and neurochemical changes” (p. 40). Since problem gamblers highlighted the importance of arousal in their EGM play, and they reported narrowing their attention to achieve trance-like states, these findings may be consistent with these arguments.

10.2.2.3 The importance of dissociation or altered states of consciousness

A major focus of this thesis was the within-session experiences of regular EGM gamblers and whether they included dissociative-like experiences. The findings suggested that dissociative-like experiences did occur during EGM play, and as hypothesised problem gamblers were more likely to report such experiences. The problem gamblers in the qualitative study described experiences that appeared to be consistent with dissociative-like experiences and/or trance-like states. They described how after playing EGMs for approximately 20 minutes they could obtain a state of focused attention that they likened to a hypnotic trance, whereby they became unaware of their external environment. This trance-like state could be maintained during brief absences from the machine, and in some cases could override physiological urges and innate fight or flight responses. Jacobs’ (1986) General Theory of Addictions described the necessity of dissociative-like states in addiction, and suggested that people become addicted to achieving this state of escape to alleviate their aversive psychological and physiological states. Jacobs (1982, 2001, 2004 cited by Jacobs, 2006) concluded that obtaining dissociative-like experiences was a feature of addiction. Consistent with this argument is the conceptualisation of dissociation as a
learned response that originates from an attempt to escape trauma that can become an automatically generalised response to anxiety provoking experiences later in life (Dolan, 1988). The high frequency of traumatic experiences reported in major studies 2 and 3 may explain why problem gamblers were more likely to report dissociative-like experiences than either non-problem gamblers or moderate risk gamblers.

Jacobs, Marston and Singer (1985) specifically postulated that for a substance or behaviour to be addictive then it must be able to blur reality testing (in the case of EGMs focus attention), lower self-criticalness and self-consciousness, and allow gamblers to have complimentary daydreams about themselves. The increasing number and intensity of these features were hypothesised to make it more likely that people would reach dissociative states during gambling. In the major qualitative study respondents’ reports of narrowing their attention, escaping through the use of fantasies about how their lives would change for the better when they had a big win, and their intense self-absorption, suggests that EGM play fulfils Jacobs’ (1986) requirements for an addictive behaviour. Jacobs (1998 cited by Jacobs, 2006) claimed that:

“Functionally, dissociation permits a psychological escape from the offending reality circumstance, when other means for escape are blocked or unavailable. Thus, dissociation is used as a method of problem-solving” (p. 4).

Jacobs (1986; Jacobs, 1988) is not the only researcher to emphasise the importance of dissociation during gambling. Other authors have suggested that dissociation may be linked to the development of impulsive behaviours that result from the dissociative state of escape from awareness (Baumeister, Heatherton & Tice, 1994; Heatherton & Baumeister, 1991 cited by Ross-Gower et al., 1998). This proposition is consistent with the centrality of the need to escape found in both of the major studies. The major quantitative study also produced evidence to suggest that prior dissociative experience (as was measured by the DES II) was higher in individuals as their level of gambling severity increased. Kofoed, et al. (1997) conversely concluded that a high level of prior dissociative experience was not associated with VLT problem gambling. However, the need to escape construct in the major quantitative study was measured by a total within-session dissociative score based on Jacobs’ (1988) dissociation questions. This suggests that the within-session experiences of dissociative-like reactions were significantly related to problem gambling.
The final study suggested that EGM play may alter states of consciousness, although this finding was restricted by the low power of the study. Study 4 highlighted the importance of alterations in identity during EGM play which is consistent with the proposition that, during gambling gamblers engage in fantasies that enhance their self-identity. This is consistent with the work of Cotte (1997) who suggested that gambling enhances self-esteem and allows the gambler to create a favourable, fantasised self-image. Another finding common to both the major qualitative study and study 4 was the reports of altered time sense during EGM play. As previously discussed, this may be due to the narrowed attention experienced during EGM play influencing cognitive resource allocation which may significantly impair the monitoring of time (Delfabbro, 2006; Naish, 2001).

10.2.3 The issue of impaired control in a model of vulnerable EGM players

The construct of ‘impaired control’ was found in both major studies to be an important factor in problem gambling. Problem gamblers in the qualitative study reported that chasing, the occurrence and belief in a big win, and addictive thinking reinforced their gambling behaviours and contributed to their ‘downward spiral’ or development of problem gambling. The downward spiral recalled by problem gamblers may reflect the early and middle components of stage 2 of Jacobs’ (1986) General Theory of Addictions, which referred to a period of developing and maintaining an addictive pattern of behaviour. Problem gamblers in the qualitative study described superstitious behaviours, irrational beliefs and an illusion of control. According to Blaszczynski and Nower (2002) as the level of gambling involvement increases, biased and distorted cognitions occur from a process (through the influence of classical and operant conditioning) that is applicable to all problem gamblers, and this appeared to be consistent with reports from the current sample of problem gamblers. In the qualitative study problem gamblers reported how they initially perceived themselves to be in complete control of their gambling. However, over time, the respondents realised that they had lost this control. Impaired control over gambling is assumed to fall on a continuum of intensity which appears to suggest that as respondents’ EGM involvement increases, so does their levels of impaired control (O’Connor & Dickerson, 2003b). The chasing behaviours reported by respondents appeared to reflect Stage 2 of Jacobs et al. (1985) whereby an activity/substance is engaged in more frequently for longer periods of time and at a greater intensity. Chasing has commonly been related to impaired control over gambling and problem gambling (Corless & Dickerson, 1989;
O’Connor & Dickerson, 2003a). Corless and Dickerson (1989) suggested that negative emotions such as those that were described in the qualitative study were the most significant determinants of impaired control in problem gamblers. The ability to control behaviour is central to the concept of problem gambling and also other forms of addiction. Blaszczynski and Nower (2002) believe a loss of control over gambling is facilitated (in each of the problem gambling pathways) by principles of learning theory and cognitive processes. The problem gamblers in the current study also felt that their lives outside of gambling had become uncontrollable and that ironically, finding money to gamble became the one thing they believed they had control over.

As hypothesised, the problem gamblers in the major quantitative study were significantly more likely to report impaired control than non-problem and moderate risk gamblers. In addition, impaired control over gambling was a central component of the final structural equation model presented in chapter 8 and increased the explanatory nature of the model. Impaired control was also found to mediate the relationships between the psychological vulnerabilities of dissociative-like experiences and depression with problem gambling. Dickerson, Haw, and Shepherd (2003) also reported that depression was a predictor of concurrent impaired control over gambling. The authors also found that depression was related to future impaired control over gambling.

The findings from the research appeared to suggest that impaired control over gambling and dissociative-like experiences are more common in problem EGM gamblers than other categories of regular gamblers. However, Griffiths, Wood, Parke and Parke (2006) pointed out that since there is a subgroup of problem gamblers who do not demonstrate dissociative-like states, that achieving these states is not a fundamental component underlying impaired control for all gamblers. The author did, however, suggest that impaired control and dissociative-like experiences might be related to a subgroup of emotionally vulnerable gamblers. The findings from the current study suggested that impaired control and dissociative-like experiences are significantly related to problem gambling and may reflect one component of the process by which problem gambling develops.
10.2.4 The potential role of protective variables in problem gambling

The current project (study 3) also examined some of the variables that have been hypothesised to act as buffers/protective factors against the development of problem gambling. In terms of potential stress buffers, self esteem, social support and task-focused coping did not figure significantly in the moderation models reported in the major quantitative study. The results did, however, suggest that problem gamblers have lower levels of social support and self-esteem and score lower on adaptive styles of coping. Thus, these variables require further investigation and may have implications in terms of clinical interventions and prevention programs.

Kaufman (2002) reported that positive events predicted healthier adjustment in an adolescent sample and suggested that positive life events may have more of an influence on measures of positive psychological functioning as opposed to negative functioning. Kaufman’s (2002) findings suggested that positive events may act as a potential buffer in problem gambling and this warrants further research with an adult sample.

10.3 Implications Derived from the Current Thesis

A number of implications can be drawn from the current thesis and specific attention has been afforded to the theoretical, clinical and forensic implications. The clinical implications related to the thesis’s findings have been interpreted in terms of the National Practice Standards for the Mental Health Workforce which was developed by the National Mental Health Education and Training Advisory Group (NMHTAG, 2002).

10.3.1 Theoretical implications

The project provided support for the two predisposing factors of addiction identified by Jacobs (1986), and the emotionally vulnerable category of gamblers described by Blasszczynski and Nower (2002). The major quantitative study provided a model of psychologically vulnerable problem EGM gamblers. The thesis highlighted the addition of a need to escape construct in the conceptualisation of vulnerable EGM players and the role of dissociative-like experiences. The importance of dissociative-like experiences in problem gambling has been highlighted by a number of authors, namely Jacobs’ (1986,
1988), Kuley and Jacobs (1988), and Gupta and Derenvensky (1998) who also inferred the importance of the need to escape construct. The qualitative study provided support for the role of a ‘conducive’ environment in problem gambling, as referred to by Jacobs (1986). Respondents in the qualitative study also described the process of development into problem gambling. The thesis also emphasised the importance of impaired control in conceptualising gambling severity, and identified the additional role of impaired cognitions and the importance of the structural components of EGMs.

10.3.2 Clinical implications

The thesis has produced a number of findings that have significant clinical implications. These clinical implications have been discussed below using the National Practice Standards for the Mental Health Workforce (NMHETAG, 2002) as a framework. The standards were developed to provide a framework for mental health reform. The standards were specifically directed to the 5 disciplines working in the mental health sector (mental health nursing, occupational therapy, social work, psychiatry and psychology) in order to ensure the quality of mental health care. A total of 12 standards were developed, and the 7 that are pertinent to the current work are addressed. These national practice standards are similar to those that are endorsed internationally e.g., A National Service Framework for Mental Health: Modern Standards and Service Models (Department of Health, 1999) in the United Kingdom, The Canadian Collaborative Mental Health Charter (Canadian Collaborative Mental Health Initiative, 2006) and The National Mental Health Standards (Ministry of Health, 1997) in New Zealand.

10.3.2.1 Standard 2: Consumer and carer participation

This standard refers to the importance of mental health professionals encouraging and supporting the participation of consumers and significant others in their individual treatment and care. The rationale behind this standard is that consumers and significant others have “unique experiences of mental health problems and mental disorders, and their lived experience must be recognised and utilised by mental health professionals as a valuable body of knowledge” (NMHETAG, 2002, p.11). The qualitative study emphasised the importance of the lived experience of problem gamblers and the subsequent findings from the study reflect problem gamblers’ understandings of their mental health problems. This study can enlighten practitioners’ understanding of problem gamblers’ lived
experience and how problem gamblers conceptualise their problems. Thus, the study provides the basis for areas to be addressed in clinical intervention and can assist the clinician’s ability to develop rapport and enhance the therapeutic alliance with the individual. This standard also required mental health professionals to provide individuals with information concerning mental health problems/disorders, mental health services (and other support services) and self-help organisations. All of the participants in the final three studies were provided information about support services specific to problem gambling, and also other mental health problems. Participants in study 4 were also provided with an information package that included details on: problem gambling and other common comorbid disorders, the nature of EGM play, a self-help booklet, information for family members/significant others and additional contact details of support organisations and crisis intervention telephone help lines. Feedback from participants in study 4 suggested that these information packages were useful and could assist at-risk gamblers. Future clinical research is encouraged to provide similar information packages to their participants.

10.3.2.2 Standard 4: Mental health problems and mental disorders

Standard 4 refers to the expectation that mental health practitioners are knowledgeable about mental health problems/disorders and recognise issues of comorbidity. This is necessary for mental health practitioners’ transference of knowledge into appropriate assessments, diagnoses and treatments (NMHETAG, 2002). This thesis provides practitioners with an enhanced understanding about an emotionally vulnerable group of problem EGM gamblers, and provides a description of how problem gambling developed and was maintained. This knowledge may increase practitioners’ awareness of the signs and symptoms of problem gambling. The thesis also tested a model of problem gambling that may assist the design of clinical interventions.

The thesis described the common comorbid problems associated with problem gambling. Some of the comorbid problems identified by the research include the abuse of substances such as alcohol, marijuana and also sedatives (in older populations), depression, anxiety, stress and suicidal ideation and suicide attempts. Problem gambling has previously been associated with suicidal ideation and suicide attempts (Blaszczynski & Farrell, 1998; Ladouceur, Dubé et al., 1994; Ledgerwood & Petry, 2004; MacCallum & Blaszczynski, 2003; Newman & Thomson, 2003). Other research has associated problem gambling in
relation to alcohol and substance abuse (Bland et al., 1993; Feigelman et al., 1998; MacCallum & Blaszczynski, 2002; Smart & Ferris, 1996; Welte et al., 2004) and other psychiatric comorbidities and psychological distress (Coman et al., 1997; Cunningham-Williams, et al., 2000; McCormick et al., 1984; Petry et al., 2005). The presence of uncharacteristic behaviours and cognitions, as well as the relationship and occupational difficulties and financial problems amongst problem gamblers were also investigated in the current project. Employment problems (Productivity Commission, 1999; Ladouceur, Boisvert et al., 1994; Walker, 1998) and marital difficulties (Lorenz & Yaffee, 1986, 1988) have previously been identified in the literature.

10.3.2.3 Standard 5: Promotion and prevention

The fifth standard refers to mental health practitioners being required to promote environments that enhance mental health in order to prevent the development of mental health problems/disorders. This may be achieved via increasing awareness and educating the public about mental health issues and reducing the stigma surrounding the area of mental health. Also outlined in this standard is that mental health clinicians should design and implement interventions that reduce risk factors and enhance resilience (NMHETAG, 2002).

The findings from the qualitative study suggested that there is a stigma surrounding problem gambling which keeps the problem hidden. Horch and Hodgins (2008) reported that stigma is a significant barrier against problem gamblers seeking treatment, and this suggests that a public health campaign to increase people's awareness about the disorder may be warranted. Such campaigns may help to shift attitudes towards treatment seeking for problem gamblers (Hodgins & El-Guebaly, 2000). It may also assist both potential problem gamblers and significant family members recognise the early signs that indicate a problem enabling an early intervention to prevent the development of problems. Self-help treatments have also been identified as being appropriate for people who do not access treatment due to stigma, shame, guilt, and/or privacy concerns (Raylu, Oei, & Loo, 2008).

The research also found that problem gamblers often had a parent with a gambling or substance abuse problem to whom they were exposed during childhood. School education programs that educate children and adolescents about the risk factors associated with gambling may help prevent the development of problems. Delfabbro (2008) outlined
a number of school education campaigns that have been developed in South Australia e.g., the ‘Don’t bet on it!’ strategy and the ‘Dicey Dealings’ program. School counsellors/psychologists may also play a role in helping children with parents who have gambling problems to develop adaptive coping strategies and resilience, in order to reduce the risk that they also develop gambling/mental health problems later in life.

The importance of impaired control was also identified in the current research and may be addressed to reduce/prevent impaired gambling behaviours. Dickerson, Haw and Shepherd (2003) reported that individuals who reported that they maintained control over their gambling did so by adhering to realistic time and monetary budgets. The participants who believed that their time and/or money on gambling were increasing also reported that they stayed away from venues to maintain control over their gambling (Dickerson, Haw & Shepherd, 2003). These findings suggest that information could be provided to people that explains the importance of having realistic time and monetary budgets. Dickerson, Haw and Shepherd (2003) emphasised the right of gamblers being able to make rational decisions about their own expenditure limits, and suggested that perhaps removing the purchase point from the gambling floor might assist in retaining gambler’s control over their gambling.

The high frequency of dissociative-like reactions during EGM play amongst problem gamblers suggested that gambling environments might require more reality checks. These might include increased lighting in gambling venues and clocks within easy visibility. The results suggesting that gamblers experienced an altered sense of time during EGM play indicate that the installation of clocks, and also pop-up reminders of the time on EGMs could be utilised as preventative strategies (Delfabbro, 2006, 2008). However, Delfabbro (2008) argued that these strategies might be more beneficial for non-problem gamblers to maintain safe gambling levels given that, problem gamblers might tend to ignore these features because they are too preoccupied with gambling.

The lights and sounds of EGMs were also described as being attractive features of EGM play by the problem gamblers in the qualitative study. Delfabbro (2008) reported that there is currently little information available regarding the influence of light and sound features on EGMs. Although, Delfabbro (2008) did suggest that sound features are probably associated with the classical conditioning processes associated with EGM play, and that when sound is removed from EGMs, their attractiveness is reduced.
Another interesting point made by the respondents in the qualitative study related to the attractiveness of the gambling venues because of the provision of free alcohol/coffee/food and feeling ‘special’ when belonging to loyalty groups. These inducements are concerning given that they provide people with a reason for attending gambling venues, and a justification for playing longer which may potentially reduce the person’s ability to control their behaviour (Productivity Commission, 1999 cited by Delfabbro, 2008). Since this research and Jacobs (1986) highlighted the importance of the environment in the development of problems, these inducements may be attracting emotionally vulnerable individuals to gamble more frequently and to eventually develop problems. Future research that investigates the role of the gambling environment and inducements with different categories of gamblers, in particular emotionally vulnerable problem EGM gamblers, may help establish if there is a connection. However, Delfabbro (2008) suggested that there is no convincing evidence that the use of inducements in gambling venues can increase problem gambling.

Finally, the findings from the current study that highlighted the presence of cognitive distortions and ineffective problem solving skills suggest that prevention programs targeted towards these areas may be beneficial. Doiron and Nicki (2007) reported a randomised controlled trial that assessed a ‘Stop and Think’ program for the prevention of problem gambling. The study was designed to teach Canadian at-risk VLT gamblers cognitive restructuring and problem solving skills. The results found that, the experimental group (when compared to the control group) had a reduced risk for developing gambling problems when followed up 1 month later. Such a program may be useful for targeting at-risk gamblers or gamblers that have yet to progress down the downward spiral. Future research that demonstrates the utility of such a prevention program in an Australian sample which includes a longer follow-up period may be warranted.
10.3.2.4 Standard 6: Early detection and intervention

The sixth standard refers to the responsibility of mental health clinicians to encourage early detection and intervention for people exhibiting early signs and symptoms or recurrence of mental health problems/disorder (NMHETAG, 2002). The standard also refers to the identification of risk factors for the development of mental health problems/disorders. The current project identified a number of risk factors that may assist clinicians. Some of these risk factors include: comorbid substance abuse and psychological problems, trauma and life stressors, parents with substance or gambling problems during the childhood, and a lack of attachment with significant others during childhood. Jacobs et al. (1989 cited by Jacobs, 2006) emphasised the need for early intervention for children of problem gamblers and argued that without this focus, such individuals might develop reduced problem solving skills, and thus be at a higher risk for the development of addiction.

Kausch et al. (2006) examined the relationships between a history of trauma and comorbid substance dependence, impulsivity, and measures of problem severity and personality factors in patients in a treatment program for gambling. Consistent with the current research, a total of 64% of gamblers reported having a history of emotional trauma, 40.5% physical trauma and 24.3% sexual trauma. A large proportion of this trauma occurred during childhood, as was found in the current research. Kausch et al. (2006) reported that a history of trauma was associated with more suicide attempts and drug and alcohol dependency, and higher levels of psychiatric distress. The literature also suggests that people with inadequate attachment experiences during childhood, such as was found in the current research, do not learn how to regulate their affective states. Many trauma victims manage their emotions through dissociation and other psychological methods of defence, and frequently engage in self-soothing behaviours (many of which are self-destructive) in an attempt to contain their emotional distress (Pearlman & Courtois, 2005). In light of these findings, mental health practitioners may wish to address the use of adaptive coping strategies and provide problem-solving skills training with problem EGM gamblers who describe these backgrounds.

The downward spiral discussed in the qualitative study described how problem gamblers’ perceived their gambling problems to progress, and suggested that problem gamblers do not seek help until their gambling problems are well advanced. The
Productivity Commission (1999) reported that in South Australia, 2,533 people had sought help from the surveyed agencies. As was pointed out by Delfabbro (2008), when this figure is compared to a recent estimate of problem gamblers in South Australia, approximately 22,000 individuals in 2001, this suggests that there is a help-seeking rate of 8.9%. Thus, early interventions are warranted. In order to develop early intervention strategies practitioners need to be aware of the barriers to treatment seeking reported by problem gamblers. Evans and Delfabbro (2005) reported a study that investigated the primary motivations and barriers to seeking treatment amongst Australian problem gamblers (N= 77). The authors’ findings suggested that seeking professional help was usually associated with a crisis. Evans and Delfabbro (2005) also reported that some of the barriers to treatment seeking include shame, denial and social factors. Similar findings have been reported in other countries such as Canada. For example, Hodgins, Makarchuk, el-Guebaly and Peden (2002) reported that approximately a third of their sample had indicated that their decision to quit gambling was related to a specific event and involved a crisis. Hodgins, Currie, and el-Guebaly (2001) described how many potential barriers for these people are at an earlier stage of gambling involvement or those who have less severe gambling problems. Such barriers included issues of privacy, convenience and a desire to solve their own problems. The authors suggested that self-help workbooks might be attractive, accessible and cost-effective interventions that can reduce the severity of gambling. Hodgins, Currie and el-Guebaly (2001) assessed the efficacy of a self-help book in a three group randomised control study and found that it reduced the severity of gambling. Evans and Delfabbro (2005) also highlighted the need for early detection of problem gambling, and suggested that one strategy could be to provide greater screening measures within the community. One idea could be to place problem-gambling checklists in doctor surgeries (Christensen, Patsdaughter, & Babington, 2001; Sullivan, Arroll, Costeer, Abbott, & Adams, 2000 cited by Evans and Delfabbro, 2005).

10.3.2.5 Standard 7: Assessment, treatment, relapse prevention and support

The seventh standard suggests that mental health professionals provide or ensure that consumers have access to a high standard of evidence based mental health services (NMHETAG, 2002). A number of the findings from the current research are relevant to this standard.
The prevalence of negative life stressors and child abuse reported by respondents suggest that problem gamblers should be screened and then treated for such experiences. Kausch et al. (2006) suggested that this subgroup of gamblers may particularly benefit from intensive treatment modalities and emphasised the importance of the therapeutic alliance. The current research also highlighted the importance of dissociative-like experiences in problem gambling, and Jacobs (1985, 1986, 2006) suggested that screening tools relating to dissociative-like experiences might assist in identifying and distinguishing between different categories of gamblers. Jacobs (2006) also suggested that individuals who recall dissociating during trauma should be screened for chronic PTSD and also early childhood trauma.

The existence of comorbid psychological problems such as depression, anxiety and other addictions also make it essential that comorbid psychological diagnoses are screened. Blaszczynski and Nower (2002) suggested that the psychological dysfunction of problem gamblers cause them to be resistant to change and that consequently underlying vulnerabilities should be addressed in treatment. It is also important that the clinicians assess problem gamblers readiness for change because denial of problems is common in the earlier stages of problem gambling. Motivational enhancement therapy may be utilised to address the individual’s readiness for change.

Clinical intervention could also address the use of gambling as a method of escape. The use of gambling as a method of escaping life problems and enhancing psychological states suggests that coping skills training, problem solving skills and stress management training may also be warranted to increase problem gamblers’ self-confidence and ability to deal effectively with life stressors (Jacobs, 1986). Numerous authors have emphasised the need to address problem gamblers’ coping skills repertoire during treatment (Lightsey & Hulse, 2002; McCormick, 1994; Petry, 2005; Petry, Litt, Kadden, & Ledgerwood, 2007). Clinical intervention may be aimed at developing awareness of coping strategies, exploring adaptive alternatives and increasing the individual’s capacity and willingness to employ alternative strategies (McCorriston, 2006).

The problem gamblers included in the current project also demonstrated low levels of self-esteem which suggests that clinical interventions may also focus on self-esteem enhancement (Jacobs, 1986). In addition, the findings suggested that problem gamblers had low levels of social support and relationship difficulties, which could be targeted through
social skills training and family/relationship therapy, as recommended by Jacobs (1984 cited by Jacobs, 2006). The all-consuming urge to gamble and impaired control over gambling should also be addressed in treatment. Dickerson, Haw and Shepherd (2003) suggested that gaming emotions and prior negative moods lead to impaired gambling control. This is consistent with the current research which also found that there are strong emotions associated with gambling, and that gambling alleviated negative moods. Thus, clinical intervention that addresses gaming emotions and prior moods states may help prevent the development of impaired gambling control.

10.3.2.6 Standard 8: Integration and partnership

This standard suggests that mental health professionals should aim to promote the integration of all components of the mental health service so that consumers and their significant others have access to appropriate and comprehensive services (NMHETAG, 2002). Findings from the current research suggest that this standard is particularly relevant to problem gamblers and their significant others. For example, problem gamblers reported that they had isolated themselves and/or had damaged significant relationships, which suggests that they may benefit from relationship/family counselling. In addition, the financial difficulties associated with problem gambling indicated that clinicians may be required to refer the individual for financial counselling. There were also a number of negative consequences associated with problem gambling that suggested that individuals with more severe difficulties may have committed illegal acts, experienced homelessness and/or attempted suicide. These findings suggest that problem gamblers may need access to legal counsel, emergency housing and/or inpatient psychiatric care.

10.3.2.7 Standard 11: Evaluation and research

The final standard is related to the onus on mental health clinicians to monitor systematically and evaluate their clinical practice and participate in or conduct research that promotes quality practice. This project has contributed to theoretical knowledge regarding a subgroup of emotionally vulnerable problem gamblers and has a number of clinical implications that will assist the development of quality psychological interventions.
10.3.3 Forensic implications

As discussed previously, the current thesis raised a number of forensic issues. The research provides support for the argument that dissociative-like experiences occur during EGM gambling. Thus, the argument made by some psychologists that gamblers can experience a form of dissociation and mood disturbance in which they no longer feel completely in control of their actions merits further attention. Study 4 provided evidence that regular EGM players’ levels of rationality decrease during EGM play which suggests that during dissociative-like states people may be more likely to make rash, irrational or impulsive decisions detrimental to their wellbeing.

It was not possible to conclude whether individuals playing EGMs undertake actions generally inconsistent with their character during such states from the quantitative studies. Despite the qualitative study identifying uncharacteristic cognitions and behaviours that gamblers attributed to their gambling, these were not associated with dissociative-like states. These findings support the commission of further research into the specific processes that may lead problem gamblers to gravitate towards offending behaviour. As discussed in chapter 5, the establishment of a link between dissociative experiences and criminal offences could potentially assist in the explanation of why some individuals commit offences against their better judgement. If problem gamblers are more likely to commit offences during dissociative-like states then questions could be asked concerning the criminal responsibility of the offender, although it is important to establish whether such impaired states lasted beyond the time spent in venues. The qualitative study provided evidence to suggest that these dissociative-like states could be maintained for short periods away from playing the EGM; however, more research is needed to confirm this finding. In addition, during these breaks from the machine the respondents reported that they were usually taking toilet breaks or obtaining more money to gamble. It also seems to be more likely that illegal activities are conducted to alleviate high levels of debt and to fund future gambling away from the gambling venue. This suggests that the presence of dissociative-like experiences and high levels of impaired control are indicators of severe problem gambling, rather than part of the process of offending. Future research investigating the links between impaired control, dissociative-like experiences and gambling severity may help illuminate the process of criminal offending.
The evidence produced in study 4 that suggested EGMs may induce altered states of consciousness also raises questions surrounding the responsibility of the manufacturers of EGMs. If future research confirms the results from study 4, then there must be some onus on the manufacturer to promote responsible gambling to reduce the potential for people to experience dissociative-like reactions/ altered states of consciousness during use of their products. This could include responsible gambling practices such as labelling the products to promote awareness and creating reality checks. Of particular relevance to this proposition is a study that was conducted by Cloutier, Ladouceur and Sévigny (2006), which examined how messages and pauses on VLT screens influenced erroneous beliefs and play persistence. Participants were randomly assigned to either a pause or message group whereby during the experimental condition, the message group were exposed to correcting pop-up messages that targeted the illusion of control after every 15 games of play, for 7 seconds. The control group only had the word pause appear on the screen for 7 seconds. The results suggested that messages had a larger influence on erroneous beliefs than pauses. However, there was no difference between groups in the number of games played identified. This led the authors to speculate that one explanation for this could be that the mandatory pauses could have assisted the participant to stop dissociating from reality (Jacobs, 1986) by creating a reality check. These findings suggest that further research investigating the impact on mandatory pauses on EGM play may be useful in terms of responsible gambling. In addition, there has been some suggestion that features such as natural lighting, adding clocks to venues, or easy access to exit points may act as reality checks (e.g., Productivity Commission, 1999). However, to date, there has been no objective behavioural data available to establish whether these strategies may be effective (Delfabbro, 2009). The current study focused on the psychology of problem gamblers and identified that vulnerable individuals are more likely to dissociate/alter their states of consciousness during EGM play. However, study 4 found that regular gamblers also experience altered states of consciousness, and this suggests that the degree to which these altered states of consciousness are experienced by the different categories of gambling may be a defining feature of problem gambling. This also suggests that other factors such as the structural characteristics of the machine and the gambling venue may be important in the process of inducing altered states of consciousness. Therefore, there is a need for future research that examines how these factors interact.
10.4 Methodological Considerations

Although the use of mixed methodology has a number of benefits, this project does have a number of methodological limitations that need to be taken into account when interpreting the findings. It must be emphasised that the cross-sectional design of the quantitative studies was largely descriptive which makes it difficult to draw conclusions about causality in problem gambling.

The results for all of the studies were dependent upon the retrospective recall of participants and, as a consequence, may be subject to limitations. This is particularly relevant to the qualitative research where problem gamblers attempted to interpret their experiences. Ledgerwood and Petry (2006b) argue that the self-reported motivations for engaging in any behaviour might be affected by recall bias. Hodgins, el-Guebaly and Armstrong (1995) also reported that autobiographical attributions are probably influenced by memory and other variables and that people try and make sense of their experiences (Heatherington & Nichols, 1994 cited by Hodgins et al. 2002). It has been argued that the extent to which people are able to recall early traumatic/abuse experiences, such as those in the current research, is a complex research area (Melchert, et al., 1997 cited by Spak, Spak, & Allebeck, 1998). For example, a number of factors during adulthood can influence the recall of childhood sexual abuse, such as mood states, post and current relationships, and participation in psychotherapy (Rogers, 1995 cited by Spak, et al., 1998). Simpson and Miller (2002) also cautioned that recollections of abuse experiences may be inaccurately recalled when people attempt to understand their difficulties. In addition, there is also the issue that if problem gamblers do experience trance-like states and/or dissociative experiences during gambling, then their ability to recall their within-session experiences may be detrimentally affected. The respondents’ reports in the qualitative study were also likely to have been influenced by their own understanding about the nature of problem gambling and this may have been informed by society, engagement in therapy and/or self help groups, and/or their understanding of psychological theories. Another concern is the passage of time in particular, reports relating to childhood. This is particularly relevant for the current sample of respondents since some people with certain types of psychological problems may have distorted memories of earlier experiences (Finzi-Dottan & Karu, 2006).
Another methodological consideration is that all of the participants were self-selected and the findings were based on self-report methodology. Participants were recruited via advertisements placed in local papers, thus the sample may not be representative of other problem gamblers in the community. This limitation may explain why an older sample of participants was obtained for the final three studies since retired people may have had more free time to participate. In addition, the second (qualitative) study was strongly biased towards female participants and this may have been because women are traditionally more willing to discuss their problems. The results may also have differed if the samples of participants had been drawn from different areas, such as people in clinical treatment, Gamblers Anonymous (G.A) and/or hospital outpatients. The final 3 studies also only included participants who reported regularly playing EGMs. Thus, the current thesis’s findings cannot be generalised to other types of gamblers e.g., those who predominantly bet on the races or on casino games. The generalisability of the findings from the qualitative study in particular was restricted as a direct result of the methodology employed. IPA acknowledges that findings are based on a co-construction between the respondents’ and the researcher’s understandings of the phenomenon under review. Moreover, qualitative research is focused on ecological validity, rather than reproducibility and generalisability expected in classic scientific inquiry (Marshall & Rossman, 2006; Neale et al., 2005). Researchers hold varying stances on the generalisability of qualitative research. Marshall and Rossman (2006) allow that qualitative findings may be transferable, and Smith and Osborn (2003) argue that IPA is not against making general claims for larger populations. However, Willig (2001) suggests that generalisations made from IPA studies should be made with caution, and encourage that conclusions are specific to the population under review (i.e., conclusions are made for problem EGM gamblers rather than problem gamblers in general). As a result, care should be taken when generalising the findings from the qualitative study, as they may not be representative of all problem gamblers. The small sample size of problem gamblers included in the qualitative study reflected the idiographic nature of IPA studies. Small sample sizes are considered the norm in this area of research since the use of large samples may lose “potentially subtle inflections of meaning” (p. 626, Collins & Nicolson, 2002), and because the aim of qualitative research is to provide an in-depth analysis of a small group (Touroni & Coyle, 2002).

The current project also has specific limitations directly related to the use of quantitative and qualitative methodology. For example, the non-experimental design of
the major quantitative study could not allow for the complexity of relationships between variables, for example: “stressful life events, coping strategies, and behavioural and emotional problems interact in the ongoing events of daily life (e.g. Lazarus & Folkman, 1984), with each influencing the other.” (Lightsey & Hulsey, 2002, p. 208). In addition, the forced choice nature of the quantitative studies did not allow for in-depth responding. This is why the qualitative study’s findings were integrated in the final discussion since the respondents provided in depth explanations and discussed their perceptions concerning problem gambling and its associated costs. In regards to limitations directly related to the qualitative study, every attempt was made to satisfy the criteria proposed by Elliott et al. (1999) for qualitative researchers (see chapter 5). The researcher and auditor believed that these guidelines had been followed in the current project. However, it must be borne in mind that the use of an interview schedule may have limited the scope of the qualitative study which attempted to address a number of topics of research interest. However, given that IPA recognises the dynamic role of the researcher in the data collection process, any negative effects from this may have been ameliorated through the transparent methodology section. The interview also assumed cooperation from interviewees who may or may not have been willing to share complete details of their experiences (Marshall & Rossman, 2006). Respondents did not appear to be uncomfortable with any of the questions posed to them in the interviews; however this does not mean they did not withhold information. In addition, Neale et al. (2005) reported that the accuracy and honesty of drug users’ responses to interview questions, and their ability to recall events and emotions is often doubted. These reservations may also apply to problem gamblers who are known to lie about their gambling involvement.

There may also be other limitations in the qualitative study that specifically stem from the use of IPA. For instance, conclusions drawn from IPA are restricted by the participants’ ability to articulate and analyse their own thoughts and experiences, and also the researcher’s ability to reflect and analyse (Baillie, Smith, Hewison, & Mason, 2000; Brockie & Wearden, 2006). Therefore, the success of IPA is dependent on the ability of respondents to articulate their introspective interpretation of their experiences (Willig, 2001). The quality of final analysis is also determined by the “personal analytic work done at each stage of the procedure” (p. 40) by the researcher (Smith, 2004). The researcher and auditor agreed that the guidelines for analysing the transcripts using IPA principles were satisfied. However, just as the respondents’ understandings of problem gambling may have been influenced by society and their understanding of psychological theories, the
researcher’s own understandings of problem gambling may have also influenced the final analysis. As was made transparent in the methodology section, the researcher was naive to the area of gambling research and prior to the interviews had only been influenced by societal factors such as the media, and through conducting a literature review informed by Jacobs’ (1986) General Theory of Addiction. Every attempt was made to be open to all explanations provided by respondents throughout every stage of data collection and analysis.

IPA has also been criticised due to the lack of acknowledgement it places on the constructive role of language. The researcher should be aware of any contextual influences that may influence the validity of the experience (Willig, 2001). Researchers achieve this by examining if they had asked the same questions in different formats if they would have obtained the same results. In other words, would the questions about uncharacteristic behaviours committed during problem gambling, such as crime, have been answered differently under different circumstances? A review of the transcripts suggests that respondents were open about talking about their all of their experiences and, in fact, offered additional information without prompts by the researcher. In response to the limitations discussed above, the researcher was continually reflexive about how her perceptions may have influenced the analytical process, and how the findings may have been influenced by the IPA approach. Overall, it is believed the study contributed to a greater understanding of the subjective experience of problem gambling in a number of important areas.

The final quantitative study (study 4) also warrants particular attention due to a number of limitations. As discussed previously, the small sample size of the study and the time allowed in the experimental condition restricted the conclusions that could be drawn from the study. The respondent reports in the qualitative study that suggested problem gamblers experience dissociative-like states after playing EGMs for approximately 20 minutes may have only been applicable for people with severe gambling problems. Dickerson (1993) suggested that a higher frequency of gambling involvement increases the likelihood of people reporting that they had experienced difficulty controlling their behaviour. Dickerson (1993) also reported that in direct-observation studies the main dependent variables associated with impaired control were session duration and persistence during gambling. Therefore, the limited time in the experimental condition in study 4 may have not allowed participants enough time to become engrossed in their gambling and to
experience measurable effects. However, the study was only designed as a small exploratory study and it did produce some significant findings as hypothesised. Future research that employs a longer experimental condition may produce more significant findings in the hypothesised directions. In addition, the covert nature of the subjective reports in the final study (and indeed all of the studies) raises questions regarding the validity of the results because they are assumed to reflect accurate retrieval from memory (Ericsson & Simon, 1980 cited by Pekala, 1991). The role of reactive effectiveness - does studying the phenomenon change it in a ‘real’ gambling setting - was also not assessed in study 4. Reactive assessment refers to the fact that participants may be aware their personality or behaviour is being assessed and their responses are altered as a result, and it is also acknowledged that external validity may be threatened if results reflect reactivity rather than actual phenomenon (Kazdin, 1980). Evidence also suggests that the responses of participants can be influenced by various characteristics of the individual who administers the assessment tools (Marks & Yardley, 2004). The researcher attempted to control for this by making sure that she conducted herself in the same manner with each participant, i.e. always stayed the same distance away from the participant, and used the same instructions. In addition, the participants knew their anonymity would be protected so that they did not feel the need to conceal/alter their true responses (Kazdin, 1980).

Another potential limitation of the current thesis was the reliance on Jacobs’ (1986) theory as a framework which has been criticised by various researchers in terms of its lack of clear definitions. In particular, Pietrak and Petry (2005) claimed that in Jacobs (1986) theory, the term dissociation was used with various meanings, and the authors suggested that there had been no attempt to distinguish dissociation from altered states that may be related to ordinary distraction. A number of other authors have also argued that the concept of dissociation during gambling was ill defined and difficult to operationalise (Garcia & Blaszczynski, 2006; Griffiths et al., 2006). In Jacobs’ (2006) paper he argued that as opposed to defining “what it [dissociative-like experiences] is” (p. 46) he chose to describe the how and the circumstances to which such experiences occur. Jacobs (2006) claimed that for the purposes of investigating dissociative-like experiences during gambling, the construct had been operationally defined “as a person responding affirmatively to each of four to five specific questions about his or her subjective experiences, during or immediately following a period of indulgence” (p. 47). Jacobs (2006) also reported that dissociation was a progressively altered state of consciousness which falls along a continuum. Garcia and Blaszczynski (2006) also criticised Jacobs (1986; 1988) by stating
that the reliability and validity of Jacobs’ dissociative-like experiences questions were unavailable. Griffiths et al. (2006) also reported that Jacobs’ questions were of a subjective nature and as a consequence had measurement problems. In addition, Kaufman (2002) criticised Jacobs’ (1986) theory in terms of how the concept of an aversive physiological resting state had remained ambiguous in the literature. Kaufman (2002) argued that this state may refer to cortical arousal, peripheral arousal or a biochemical imbalance and suggested that further research was required to provide a stronger conceptualisation and reliable measure of what Jacobs (1986) referred to by abnormal physiological resting state. Therefore, the quantitative measure of arousal in the current study may be misleading. Jacobs (1986) also did not propose whether an individual is born with an abnormal physiological resting rate, and if this remains fixed across the lifespan or if levels of arousal vary. It is also possible that physiological arousal levels may vary under different environmental/social/economic conditions (Kaufman, 2002). Further longitudinal research may be able to establish the sequence of aversive levels of arousal across the lifespan and the development of addiction. An implication of this may be that people may move in and out of the vulnerable group (Kaufman, 2002). Jacobs’ (1986) theory also neglects the role of society, culture and family when it refers to the role of a ‘conducive’ environment in the development of addiction, and it also assumes that trauma leads to feelings of inferiority and rejection.

10.5 Directions for Future Research

The current project identified a number of areas specifically related to a subgroup of vulnerable problem gamblers that could benefit from further research. In order to address issues of causality in emotionally vulnerably problem gamblers, longitudinal research needs to be undertaken. The importance of a need to escape construct and trance-like states in problem gambling were demonstrated in the current thesis and would also benefit from further research. It may be useful when exploring the need to escape construct to include a measure of dispositional avoidance coping. Further research could also examine the environmental conditions and structural characteristics of EGMs that may facilitate escape. It would also be advantageous to examine whether other types of problem gamblers (e.g., adolescent gamblers and gamblers from other cultural backgrounds living in Australia) may also be conceptualised as being emotionally vulnerable to the development of problems. In particular, future research could explore if the need to escape construct is only reported by EGM players or if other categories of gamblers (i.e. TAB
players, casino table gamblers and horse track bettors), also gamble to fulfil a desire to escape reality. Such research might also examine the structural characteristics of different types of gambling modalities and their respective gambling environments, to determine whether certain characteristics influence gamblers’ capacity to escape. For example, continuous forms of gambling activities such as EGMs and TAB may be more likely to facilitate feelings of escape. The debate in the literature regarding dissociative-like experiences also suggests that future research might focus on validating Jacobs’ (1988) questions, however, numerous studies have reported consistent findings using Jacobs’ (1988) questions (e.g., Diskin & Hodgins, 2001; Gee et al., 2005; Kuley & Jacobs, 1988).

The thesis also identified the importance of traumatic or stressful events across the lifespan in problem gamblers’ personal histories, in addition to some of the factors that may be potentially protective against the development of problem gambling. However, the thesis failed to investigate the occurrence of minor daily hassles which have also been implicated in problem gambling. In addition, other protective/stress buffering variables have been identified in previous research which may also warrant further attention (Kaufman, 2002).

The findings from the thesis emphasised the importance of dissociative-like experiences and altered states of consciousness during EGM play. The findings from study 4 suggested that Pekala’s (1991) Phenomenology of Consciousness Inventory (PCI) and Dimensions of Attention Questionnaire (DAQ) might provide useful insights into the phenomenological experience of EGM play. As a result of these findings, study 4 should be replicated using a larger sample size that includes more problem gamblers and also has a longer experimental condition to allow players to become engrossed in their gambling. In order to recruit a larger number of potential respondents, a higher level of reimbursement may be required, as may a wider sample of potential participants. Parke and Griffiths (2002) also provide some practical advice for collecting data on EGM gamblers. Drawing comparisons between problem gamblers recruited from clinical and community-based settings may also produce useful insights, as they might demonstrate how the phenomenological experience of EGM play differs in regards to problem gambling severity. At the same time, the interpretation of any findings may need to account for the fact that results may also reflect differences in levels of psychopathology between groups. In addition, study 4 found that levels of rationality decreased during EGM play. This
finding supports Wanner, Ladouceur, Auclair and Vitaro’s (2006) suggestion that there should be more research that addresses the relationship between consciousness and decision-making. Research investigating the within-session experiences of EGM play should also attempt to make the distinction between distraction and dissociation, and establish how often during gambling sessions problem gamblers feel like they are in a trance and for how long (Griffiths et al., 2006).

There has also been the suggestion by Wanner, Ladouceur, and Vitaro (2006) and Wanner, Ladouceur, Auclair and Vitaro (2006) that there are some similarities between flow (theory of optimum experience) and dissociation which could be investigated further due to the thesis’s findings that dissociation is a central component of vulnerable problem EGM players’ experience. In addition, Pekala, Angelini, and Kumar (2001) reported that dissociation, as measured by the DES, was predicted by fantasy-proneness as much as by child abuse. This finding led the authors to suggest that fantasy-proneness may be an important variable related to dissociation. Wilson and Barber (cited by Pekala et al., 2001) suggested:

“fantasy-prone individuals live much of their lives in a world of imagery, imagination and fantasy. The fantasy-prone person tends to mix fact and fiction or fantasy, including experiencing false pregnancies or generating memories and imaginings of hallucinatory intensity” (p. 206).

Given the centrality of dissociative-like experiences in Jacobs (1986) theory and the proposed use of fantasy to enhance the gamblers’ self-perception, future research may benefit from investigating the concept of fantasy-proneness in EGM gamblers.

Due to the current project’s findings that indicate some variables may play a protective role against the development of problem gambling, future research could be aimed at developing clinical interventions which address impaired control, the need to escape and enhancing protective factors and adaptive coping techniques. Variables that are believed to protect against the development of dissociative-like experiences or altered states of consciousness during EGM play could also be a focus.
References


presented at the second national workshop on problem gambling and mental health.
Auckland: Compulsive Gambling Society of New Zealand.


relapse in a population of compulsive gamblers. *Psychological Reports, 70*, 691-696.


Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychosomatic Medicine, 68*, 976-984.


Scannell, E. D., Quirk, M. M., Smith, K., Maddern, R., & Dickerson, M. (2000). Females’
coping styles and control over poker machine gambling. *Journal of Gambling
Studies, 16*, 417-432.

Effect of Genes, Environment, and lifetime Co-occurring Disorders on Health-
Related Quality of Life in Problem and Pathological Gamblers. *Archives of General
Psychiatry, 62*, 677-683.

al. (2007). Association between exposure to childhood and lifetime traumatic
events and lifetime pathological gambling in a twin cohort. *Journal of Nervous and
Mental Disease, 195*, 72-78.

loss predicts PTSD among women in substance abuse treatment. *Journal of
Traumatic Stress, 17*, 173-181.


electronic gaming machines and its effects on problem gambling*. Sydney:
University of Sydney.


in problem gambling. *Addiction, 90*, 1529-1540.

psychology. *Health Psychology, 10*, 48-52.

Shepherd, L., & Dickerson, M. (2001). Situational coping with loss of control over
gambling in regular poker machine players. *Australian Journal of Psychology, 53*,
160-169.


Welte, J., Barnes G., Wieczorek, W., Tidwell, M., & Parker J (2001). Alcohol and Gambling Pathology among U.S Adults: Prevalence, Demographic Patterns and
Comorbidity, *Journal of Studies on Alcohol, 706-712*


List of Appendices

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Appendix G:
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You are invited to participate in a study that is examining the experiences of people who have encountered significant problems with gambling. I would like to find out from your own perspective what happens when people experience gambling problems. It is hoped this information can help inform future treatment programmes for people who experience these difficulties and also assist in the refinement of current psychological theories related to gambling.

One of the characteristics of gambling is that it often leads people to do or feel things that are unusual for them. People frequently spend more time and money on gambling than they plan, or find themselves responding differently towards their family and friends. In some cases, gambling leads to people feeling a need to obtain money from sources that are either inappropriate or contrary to their best interests. One possible explanation for these kinds of behaviours is that gambling can have significant effects upon people’s emotions, their actions and ability to make rational decisions.

This study is part of a PhD project and aims to obtain more detailed firsthand insights into these experiences from people who have experienced problems with gambling. This study will look at how you became involved in gambling and your perceptions of how gambling affected you personally. To take part in this research, you will be asked to take part in a 1.5-2 hour private recorded interview with the researcher at the University of Adelaide. All information will be tape-recorded and I will then transcribe it on to a computer and then destroy the original tape. For your time, effort and costs of transport to the city you will receive a $50 Coles Myer Gift Card (for use in all Coles Myer stores i.e. Coles and Bilo Supermarkets, Target and Myer).

All of the information discussed will be kept completely anonymous, and will remain strictly confidential. No names or identifying information will be used in the write up of the interviews. You will be free to withdraw from the study at any time and are welcome to obtain copies of any written reports or transcripts arising from your participation in the study in order to verify their accuracy, remove them from the study, or remove any information you regard as unsuitable for recording.
If you would like to participate in this project, please feel free to contact the researchers using the contact details provided below.

Thank you for your interest in this study.

Ms. Jessica McCormick  
Ph: 8303 3850  
Ph: 0401 716 076  
jessica.mccormick@student.adelaide.edu.au  
Combined Master of Psychology/PhD candidate

Dr. Paul Delfabbro, Senior lecturer with the Psychology Department at the University of Adelaide  
Ph: 8 303 5744  
Supervisor

For any questions relating to the ethical conduct of this research, please refer to the attached Independent Complaints Form.
Appendix B

Interview Schedule
Briefly introduce: what the interview is going to cover, the use of the audio-tape recorder, issues of confidentiality and anonymity and allow the interviewee to ask any questions.

Background information
I would like us to start this interview by asking you a few questions about yourself.
(Mark the appropriate place)
- How old are you?__________
- What country were you born in?__________________
- Can you tell me what is your relationship status is?
  - Married [   ]
  - Living with a partner [   ]
  - Separated [   ]
  - Divorced [   ]
  - Widowed [   ]
  - Never Married [   ]

- What is the highest level of education that you have obtained?
  1. Left school at 15 years or less [   ]
  2. Left school after age 15 [   ]
  3. Left school after age 15 but still studying [   ]
  4. Trade / Apprenticeship [   ]
  5. Certificate / Diploma [   ]
  6. Bachelor degree or higher [   ]

- What is your work status?
  1. Full time employed [   ]
  2. Part time/casual employment [   ]
  3. Unemployed [   ]
  4. Home duties [   ]
  5. Retired [   ]
  6. Student [   ]
  7. Unable to work because of disability/ workcover/ invalid [   ]
  8. Other (Specify) [   ]
- Expenditure during an average gambling session
- Duration of an average gambling session
• I’m going to read you a list of popular gambling activities that you may participated in, or have participated in the past. Please indicate if you have participated in the activity in the past and also those you have participated in the past 6 months.

• During the time you felt you had a problem with gambling, how many times per week/ month or year were you gambling on these activities?
<table>
<thead>
<tr>
<th>Gambling Activity</th>
<th>Previous Gambling</th>
<th>Recent Gambling (Past 6 months)</th>
<th>Problem Gambling frequency of participation (circle:week/month/year)</th>
<th>Current frequency of participation (past month)(circle: week/month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poker machines or gaming machines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bet on horse or greyhound races excluding sweeps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bought instant scratch tickets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Played lotto or any other Lottery game like Powerball, Pools, Super 66, or Lottery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Played Keno</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Played table games such as blackjack or roulette at a casino</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Played bingo at a club or hall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bet on a sporting event like football, cricket or tennis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Played card games privately for money at home or any other place</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambled on the Internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambled via Pay TV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you/do you play any other gambling activity that I haven’t included but not including raffles or sweeps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Personal background

Note: Italics should only be asked as prompts

- Many people indicate that their experiences with gambling started when they were very young. We’re going to start by talking about some of your personal background.

  o Would you mind telling me a little bit about your family background, e.g., where did you grow up?
  o What things do you remember most strongly from your childhood e.g. best and worst memory from childhood?
  o Can you describe to me your relationship with your parents and other relatives?

- Are there any other things/experiences/events that have occurred in your life that you believe shaped you into being the person you are today?

- We’re now going to talk about how you started gambling and the ways in which this developed over time.

- First gambling experience.
  - Can you tell me when and how you first started gambling?

- Progression of gambling behaviours.
  - How did your gambling progress over time?
  - Could you recall any particular point in time when your gambling suddenly changed, or became more dominant in your life?
    - Why do you think things changed?
    - How often were you gambling?
    - How much money and time were you spending?

- How did you feel before and after a gambling session?

- Would you use any substances prior, during and after to a gambling session?
• Did others know you were gambling? If not, how did you keep it hidden from other people?

• How was your family impacted by your gambling?

• I’d like us to now talk about some of the things you experienced whilst you were gambling. Can you give me a brief outline of what you did during a gambling session?
  o Prompts only if needed: Did you move around and interact with other people?
  o What were you able to recall from your gambling sessions at the end of them?

• How did you feel whilst participating in a gambling activity?

• How did you feel about the gambling venues you went to?

• What would you find yourself thinking about during a gambling session?

• What would make you stop gambling?

• I’d like to finish this interview by talking with you about any experiences you had during your gambling participation that were unusual for you and that you believe were because of your gambling problems.

• Can you tell me a bit about any feelings/emotions you experienced because of your gambling that you didn’t experience before your gambling involvement?
  o i.e. anger, depression, sadness, anxiety, frustration.
  o How did this influence the way you acted in different contexts (for example at home or work)?

• What would you find yourself thinking about that you normally wouldn’t because of your gambling?
  o When would you find yourself thinking these things?
How did these uncharacteristic thoughts influence your behaviour?

- Did you do anything that was unusual/uncharacteristic because of gambling?
  - At work or towards your family.
  - Towards other people.

- Did you ever experience a point when you thought about doing something that you knew might have been against the law to keep gambling?
  - Did you find yourself rationalising your actions? How so?

- Review of interview
  - Check if there is anything else they think is important that has not already been discussed.
  - Reflect on main themes.
  - Check understanding of main responses and interpretations.
Appendix C

FACULTY OF HEALTH SCIENCES

HELPS FROM LIFELINE AUSTRALIA 13 11 14

Information sheet

Personal history and gambling experiences study

You are invited to participate in a study examining gambling involvement and gambling-related behaviours in the South Australian community. This study is part of a PhD project and is specifically aiming to gather information about poker-machine gambling and to obtain a deeper understanding of community members participating in gambling activities. The study is researching the role of stressful life experiences and coping strategies, and how these may relate to gambling and gambling-related behaviours. It is hoped this information can assist in the refinement of current psychological theories related to gambling and to potentially inform future treatment programmes for people who experience difficulties with their gambling involvement.

To take part in this research you will be asked to fill out an anonymous questionnaire. The questionnaire will ask you about your gambling involvement and about some of the substances you previously may have used. You will also be asked some questions about any life challenges you may have experienced and how you deal with stressful situations. The questionnaire also includes questions about you home environment when you were growing up, personal characteristics, and emotions you have experienced during the past week. Participating in this study may help you reflect on both your gambling activities and experiences you have had during your life. Some of the items in the questionnaire may touch sensitive areas and may bring up memories or feelings you that you find upsetting. I am personally available if you would like to clarify any question that you find concerning. If you require any assistance due to emotional distress please call Lifeline on 13 11 14 or the Gamblers Helpline on 1800 060 757.

The questionnaire takes approximately an hour to fill in, and you will then be asked to send it back using the supplied reply paid envelope. Participation in this study is voluntary and will not impact will not affect the quality of health care you receive, now or in the future. Your valuable insights into these areas are essential to help enrich our understanding of some of the reasons why people may gamble and your contribution is greatly appreciated. In appreciation of your time and your contribution you will receive a $20 Coles Myer Gift Card (for use in all Coles Myer stores i.e. Coles and Bilo Supermarkets, Target and Myer) upon the return of the questionnaire. Your returned questionnaire will be stored in a locked filing cabinet, and the information will be entered onto a password secure computer that only the study researcher’s have access to. All of the information from the questionnaires will be kept completely anonymous, and will remain strictly confidential. No names or
identifying information will be used in the write up of the data collected from the questionnaire. You are free to withdraw from the study at any time and are welcome to obtain copies of any written reports arising from the study. If you have any further questions about this project, please feel free to contact the researchers using the contact details provided below.

Thank you for your interest in this study.

Ms. Jessica McCormick
Ph: 8303 3850
Ph: 0401 716 076
jessica.mccormick@student.adelaide.edu.au
Combined Master of Psychology/PhD candidate

Dr. Paul Delfabbro, Senior lecturer with the School of Psychology at the University of Adelaide
Ph: 8 303 5744
Supervisor

Dr. Linley Denson,
Supervisor

For any questions relating to the ethical conduct of this research, please refer to the attached Independent Complaints Form.
Appendix D

Personal history and gambling experiences questionnaire

Thank you for your interest in taking part in this study, your contribution is greatly appreciated. The questionnaire you are about to fill out will take approximately an hour of your time. We realise this is a long time and that not all of the questions may feel completely relevant for every person. Please try and answer each of the questions as accurately as possible, as it is hoped the information collected from this study will help refine current psychological theories on gambling and may help inform treatment programmes for people experiencing problems with their gambling. All of the information you provide is completely confidential and anonymous.

1. Personal Information

Please fill in or check the relevant box for each of the questions below

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender:</td>
<td>Male □ Female □</td>
</tr>
<tr>
<td>2. Age:</td>
<td></td>
</tr>
<tr>
<td>3. Country of birth:</td>
<td></td>
</tr>
<tr>
<td>4. Relationship status:</td>
<td>a) Married □ d) Living with a partner □</td>
</tr>
<tr>
<td></td>
<td>b) Separated □ e) Divorced □</td>
</tr>
<tr>
<td></td>
<td>c) Widowed □ f) Never Married □</td>
</tr>
<tr>
<td>5. Please indicate the highest educational qualification you obtained:</td>
<td>a) Still at school □ e) Trade / Apprenticeship □</td>
</tr>
<tr>
<td></td>
<td>b) Left school at 15 years or less □</td>
</tr>
<tr>
<td></td>
<td>c) Left school after age 15 □</td>
</tr>
<tr>
<td></td>
<td>d) Left school after age 15 but still studying □</td>
</tr>
</tbody>
</table>
6. What is your current work status?

a) Full time employed
b) Unemployed
c) Retired
d) Unable to work because of
disability/workcover/invalid

e) Part time/casual employment
f) Home duties
g) Student
h) Other (Specify)

7. What is the approximate annual gross income of your household? That is, for all people in the household before tax is taken out.

a) Up to $12,000
b) $12,001 - $20,000
c) $20,001 - $30,000
d) $30,001 - $40,000
e) $40,001 - $50,000

f) $50,001 - $60,000
g) $60,001 - $80,000
h) More than $80,000
i) Don't know

j) Other (Specify)
2. Gambling Participation
   1. Please check the box that reflects how often you have gambled on the following activities during the last 12 months.

<table>
<thead>
<tr>
<th>Gambling Activity</th>
<th>Frequency Of Gambling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Poker/gaming machines</td>
<td></td>
</tr>
<tr>
<td>Races (horses,dogs)</td>
<td></td>
</tr>
<tr>
<td>Instant scratch tickets</td>
<td></td>
</tr>
<tr>
<td>Lottery games i.e. Crosslotto, Powerball, Pools</td>
<td></td>
</tr>
<tr>
<td>Keno</td>
<td></td>
</tr>
<tr>
<td>Table games at casino i.e. blackjack and roulette</td>
<td></td>
</tr>
<tr>
<td>Bingo</td>
<td></td>
</tr>
<tr>
<td>Sporting event i.e. football/cricket</td>
<td></td>
</tr>
<tr>
<td>Card games privately for money</td>
<td></td>
</tr>
<tr>
<td>Internet gambling</td>
<td></td>
</tr>
<tr>
<td>Other gambling, Please specify</td>
<td></td>
</tr>
<tr>
<td>...........</td>
<td></td>
</tr>
</tbody>
</table>
2. How many years have you gambled on poker machines?  
_____________ years.

3. Have you had a problem with poker machines?  
 Yes, currently ☐ Yes, in the past ☐ No, never ☐
If yes, how many years have you experienced problems? _____________ years.

4. Do you have a family member who you believe has a problem with poker machines?  
 Yes ☐ No ☐
If yes, please specify who:
Mother ☐ Father ☐ Sibling ☐ Grandparent ☐
Other ☐
If other, please specify: ____________

5. Do you have friends who you think have problems with poker machines?  
 Yes ☐ No ☐

6. When you gamble, whom do you gamble with (you may have more than one answer)?  
Family member ☐ Friend(s) ☐ Stranger(s) ☐ Partner ☐
Alone ☐ Other ☐ Please specify other: ____________
3. **CPGI Items (Ferris & Wynne, 2001)**

Please tick the appropriate box for each of the following questions when referring to how often you have found the following to be true in the last 12 months:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>a) Bet more than you can really afford to lose</td>
<td></td>
</tr>
<tr>
<td>b) Needed to gamble with larger amounts of money to get the same feeling of excitement</td>
<td></td>
</tr>
<tr>
<td>Gone back another day to try and win back the money you lost</td>
<td></td>
</tr>
<tr>
<td>c) Borrowed money or sold anything to get money to gamble</td>
<td></td>
</tr>
<tr>
<td>d) Felt that you might have a problem with gambling</td>
<td></td>
</tr>
<tr>
<td>e) Felt that gambling has caused you health problems, including stress and anxiety</td>
<td></td>
</tr>
<tr>
<td>f) People criticised your betting or told you that you have a gambling problem, whether or not you thought it was true</td>
<td></td>
</tr>
<tr>
<td>g) Felt your gambling has caused financial problems for you or your household</td>
<td></td>
</tr>
<tr>
<td>h) Felt guilty about the way you gamble or what happens when you gamble</td>
<td></td>
</tr>
</tbody>
</table>
4. Experiences Whilst Gambling

1. Do you drink alcohol prior to going to play on the poker machines?

Yes ☐ No ☐

If yes you do consume alcohol prior to gambling, how many standard drinks would you consume? __________ standard drinks.

How would you describe the effects of the alcohol before going into a session e.g. feelings of intoxication?

No effect ☐ Moderate effect ☐ Large effect ☐

2. Please indicate on average how many standard alcoholic drinks you consume during a session on the poker machines: __________ standard drinks.

If you do consume alcoholic drinks during a gambling session, how would you describe the effects of the alcohol?

No effect ☐ Moderate effect ☐ Large effect ☐

3. Do you usually use drugs (illegal and/or prescribed) before going into a session on the poker machines?

Yes ☐ No ☐

If yes, please specify: _______________________________________________________________________

If you use drugs during a gambling session, how would you describe the effects of the drug?

No effect ☐ Moderate effect ☐ Large effect ☐

4. How would you generally rate your feelings of fatigue during a gambling session on the poker machines?

Not fatigued ☐ Slightly fatigued ☐ Moderately fatigued ☐ Severely fatigued ☐

5. How many different machines do you usually play on during a single session?

_____________ machines

6. Do you interact with other people when playing on a machine?

Yes ☐ No ☐
Sometimes people describe their experiences of gambling as if they are not themselves. Please indicate by ticking the appropriate box for each of the following questions, which applied to you whilst you were playing pokies.

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) After a gambling episode, did you ever feel like you’d been in a trance?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) When you gambled did you ever feel like you had taken on another identity?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) While gambling did you ever feel like you were outside yourself- watching yourself gamble?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Have you ever experienced a memory blackout for a period when you had been gambling?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Scale of Gambling Choices (O’Connor & Dickerson, 2003a)

People have at times reported having difficulty controlling their gambling on poker machines. The following are a few statements that reflect the level of control you may have felt whilst playing on the poker machines that I would like you to respond to by ticking the most appropriate box.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) I have found it difficult to limit the amount I gamble</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) When I have been near a club or hotel, I have found it difficult to resist gambling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) When I have wanted, I have been able to gamble less often.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) I have been able to stop easily after a few games</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) I have been able to stop gambling before I spent all my cash.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) I have been able to resist the urge to start gambling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Once I’ve started gambling, I have an irresistible urge to continue.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) When I’ve wanted, I’ve been able to stop for a week or more.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) I have been able to stop gambling before the last hotel or club closed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Even for a single day I’ve found it difficult to resist gambling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) I have been able to stop gambling before I got into debt.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) I’ve been able to gamble less often when I’ve wanted to.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 7. Life Stressors Checklist (Wolfe, et al. (1996))

**READ THIS FIRST:** Now we are going to ask you some questions about events in your life that are frightening, upsetting, or stressful to most people. Please think back over your whole life when you answer these questions. Some of these questions may be about upsetting events you don’t usually talk about. Your answers are important, but you do not have to answer any questions that you do not want to. Thank you.

1. **Have you ever been in a serious disaster (for example, an earthquake, hurricane, large fire, explosion)?**
   - YES  NO
   a. How old were you when this happened? ________
   c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5) not at all some extremely

2. **Have you ever seen a serious accident (for example, a bad car wreck or an on-the-job accident)?**
   - YES  NO
   a. How old were you when this happened? ________
   c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5) not at all some extremely

3. **Have you ever had a very serious accident or accident-related injury (for example, a bad car wreck or an on-the-job accident)?**
   - YES  NO
   a. How old were you when this happened? ________
   c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5) not at all some extremely

4. **Was a close family member ever sent to jail?**
   - YES  NO
   a. How old were you when this happened? ________ b. When it ended? ________
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5) not at all some extremely
5. Have you ever been sent to jail?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td>b. When it ended? ________</td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)</td>
<td></td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

6. Were you ever put in foster care or put up for adoption?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td>b. When it ended? ________</td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)</td>
<td></td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

7. Did your parents ever separate or divorce while you were living with them?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td>b. When it ended? ________</td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)</td>
<td></td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

8. Have you ever been separated or divorced?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td>b. When it ended? ________</td>
</tr>
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<td></td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

9. Have you ever had serious money problems (for example, not enough money for food or place to live)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
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<td></td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

10. Have you ever had a very serious physical or mental illness (for example, cancer, heart attack, serious operation, felt like killing yourself, hospitalized because of nerve problems)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>
11. Have you ever been emotionally abused or neglected (for example, being frequently shamed, embarrassed, ignored, or repeatedly told that you were “no good”)?

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. When it ended? ______________</td>
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<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

12. Have you ever been physically neglected (for example, not fed, not properly clothed, or left to take care of yourself when you were too young or ill)?

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. When it ended? ______________</td>
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<td>NO</td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)</td>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

13. WOMEN ONLY: Have you ever had an abortion or miscarriage (lost your baby)?

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. At the time of the event did you believe that you or someone else could be killed or seriously harmed?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)</td>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

14. Have you ever been separated from your child against your will (for example, the loss of custody or visitation or kidnapping)?

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. When it ended? ______________</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

15. Has a baby or child of yours ever had a severe physical or mental handicap (for example, mentally retarded, birth defects, can’t hear, see, walk)?

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. When it ended? ______________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)</td>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>
16. Have you ever been responsible for taking care of someone close to you (not your child) who had a severe physical or mental handicap (for example, cancer, stroke, AIDS, nerve problems, can’t hear, see, walk)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
<td>b. When it ended? ________</td>
</tr>
<tr>
<td>e. How much has this affected your life in the past year?</td>
<td>(1) (2) (3) (4) (5)</td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

17. Has someone close to you died suddenly or unexpectedly (for example, sudden heart attack, murder or suicide)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
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</tr>
<tr>
<td>c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO</td>
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</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>

18. Has someone close to you died (do NOT include those who died suddenly or unexpectedly)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
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<td>(1) (2) (3) (4) (5)</td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
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</tbody>
</table>

19. When you were young (before age 16). did you ever see violence between family members (for example, hitting, kicking, slapping, punching)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
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<td>(1) (2) (3) (4) (5)</td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
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</tbody>
</table>

20. Have you ever seen a robbery, mugging, or attack taking place?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How old were you when this happened? ________</td>
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<td>c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO</td>
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<td>(1) (2) (3) (4) (5)</td>
</tr>
<tr>
<td>not at all</td>
<td>some</td>
</tr>
</tbody>
</table>
21. Have you ever been robbed, mugged, or physically attacked (not sexually) by someone you did not know?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. How old were you when this happened? 

b. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
c. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
d. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

not at all some extremely

22. Before age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit, slapped, choked, burned, or beat you up)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

a. How old were you when this happened? 

b. When it ended? 

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

not at all some extremely

23. After age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit, slapped, choked, burned, or beat you up)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

a. How old were you when this happened? 

b. When it ended? 

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

not at all some extremely

24. Have you ever been bothered or harassed by sexual remarks, jokes, or demands for sexual favors by someone at work or school (for example, a coworker, a boss, a customer, another student, a teacher)?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

a. How old were you when this happened? 

b. When it ended? 

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

not at all some extremely
25. Before age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn’t?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

a. How old were you when this happened? ________

b. When it ended? ________

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO

e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

| not at all | some | extremely |

26. After age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn’t?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

a. How old were you when this happened? ________

b. When it ended? ________

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO

e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

| not at all | some | extremely |

27. Before age 16, did you ever have sex (oral, anal, genital) when you didn’t want to because someone forced you in some way or threatened to hurt you if you didn’t?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

a. How old were you when this happened? ________

b. When it ended? ________

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed?

<table>
<thead>
<tr>
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<th>NO</th>
</tr>
</thead>
</table>

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO

e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

| not at all | some | extremely |

28. After age 16, did you ever have sex (oral, anal, genital) when you didn’t want to because someone forced you in some way or threatened to harm you if you didn’t?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

a. How old were you when this happened? ________

b. When it ended? ________

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO

e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

| not at all | some | extremely |
29. Are there any events we did not include that you would like to mention?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

**What was the event?**

_________________________________________________________________

____________________________

a. How old were you when this happened? ________ b. When it ended? ____________

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

   not at all  some  extremely

30. Have any of the events mentioned above ever happened to someone close to you so that even though you didn’t see it yourself, you were seriously upset by it?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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</thead>
</table>

**What was the event?**

_________________________________________________________________

____________________________

a. How old were you when this happened? ________ b. When it ended? ____________

c. At the time of the event did you believe that you or someone else could be killed or seriously harmed? YES NO
d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? YES NO
e. How much has this affected your life in the past year? (1) (2) (3) (4) (5)

   not at all  some  extremely
8. **Home Environment Questionnaire (Sanders & Becker-Laussen, 1995)**

This questionnaire seeks to determine the general atmosphere of your home when you were a child or teenager and how you felt you were treated by your parents or principal caretaker. (If you were not raised by one or both of your biological parents, please respond to the questions below in terms of the person or persons who had the primary responsibility for your upbringing as a child.) Where a question inquires about the behaviour of both of your parents and your parents differed in their behaviour, please respond in terms of the parent whose behaviour was the more severe.

In responding to these questions, simply circle the appropriate number according to the following definitions:

- 0 = never
- 1 = rarely
- 2 = sometimes
- 3 = very often
- 4 = always

To illustrate, here is a hypothetical question:

Did your parents criticize you when you were young?  
0 1 2 3 4

If you were rarely criticized, you should circle number 1.

Please answer all the questions.

1. Did your parents ridicule you?  
2. Did you ever seek outside help or guidance because of problems in your home?  
3. Did your parents verbally abuse each other?  
4. Were you expected to follow a strict code of behaviour in your home?  
5. When you were punished as a child or teenager, did you understand the reason you were punished?  
6. When you didn't follow the rules of the house, how often were you severely punished?  
7. As a child did you feel unwanted or emotionally neglected?  
8. Did your parents insult you or call you names?  
9. Before you were 14, did you engage in any sexual activity with an adult?  
10. Were your parents unhappy with each other?
Response choice reminder:

- 0 = never
- 1 = rarely
- 2 = sometimes
- 3 = very often
- 4 = always

11. Were your parents unwilling to attend any of your school-related activities? 0 1 2 3 4

12. As a child were you punished in unusual ways (e.g., being locked in a closet for a long time or being tied up)? 0 1 2 3 4

13. Were there traumatic or upsetting sexual experiences when you were a child or teenager that you couldn't speak to adults about? 0 1 2 3 4

14. Did you every think you wanted to leave your family and live with another family? 0 1 2 3 4

15. Did you ever witness the sexual mistreatment of another family member? 0 1 2 3 4

16. Did you ever think seriously about running away from home? 0 1 2 3 4

17. Did you witness the physical mistreatment of another family member? 0 1 2 3 4

18. When you were punished as a child or teenager, did you feel the punishment was deserved? 0 1 2 3 4

19. As a child or teenager, did you feel disliked by either of your parents? 0 1 2 3 4

20. How often did your parents get really angry with you? 0 1 2 3 4

21. As a child did you feel that your home was charged with the possibility of unpredictable physical violence? 0 1 2 3 4

22. Did you feel comfortable bringing friends home to visit? 0 1 2 3 4

23. Did you feel safe living at home? 0 1 2 3 4

24. When you were punished as a child or teenager, did you feel "the punishment fit the crime"? 0 1 2 3 4

25. Did your parents ever verbally lash out at you when you did not expect it? 0 1 2 3 4

26. Did you have traumatic sexual experiences as a child or teenager? 0 1 2 3 4
Response choice reminder:
0 = never
1 = rarely
2 = sometimes
3 = very often
4 = always

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Were you lonely as a child?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>28. Did your parents yell at you?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>29. When either of your parents was intoxicated, were you ever afraid of being sexually mistreated?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>30. Did you every wish for a friend to share your life?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>31. How often were you left at home alone as a child?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>32. Did your parents blame you for things you didn't do?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>33. To what extent did either of your parents drink heavily or abuse drugs?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>34. Did your parents ever hit or beat you when you did not expect it?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>35. Did your relationship with your parents ever involve a sexual experience?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>36. As a child, did you have to take care of yourself before you were old enough?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>37. Were you physically mistreated as a child or teenager?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>38. Was your childhood stressful?</td>
<td>0 1 2 3 4</td>
</tr>
</tbody>
</table>
9. Dissociative Experiences Scales (Bernstein Carlson & Putnam, 1993)

This section consists of twenty-eight questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you and circle the number to show what percentage of the time you have the experience.

**EXAMPLE:**

<table>
<thead>
<tr>
<th>0%</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100%</th>
</tr>
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<tbody>
<tr>
<td>(Never)</td>
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<tr>
<td>(Always)</td>
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</tbody>
</table>

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realizing that they don’t remember what has happened during all or part of the trip. Circle a number to show what percentage of the time this happens to you.

<table>
<thead>
<tr>
<th>0%</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100%</th>
</tr>
</thead>
</table>

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said. Circle a number to show what percentage of the time this happens to you.

<table>
<thead>
<tr>
<th>0%</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100%</th>
</tr>
</thead>
</table>

3. Some people have the experience of finding themselves in a place and having no idea how they got there. Circle a number to show what percentage of the time this happens to you.

<table>
<thead>
<tr>
<th>0%</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100%</th>
</tr>
</thead>
</table>

4. Some people have the experience of finding themselves dressed in clothes that they don’t remember putting on. Circle a number to show what percentage of the time this happens to you.

<table>
<thead>
<tr>
<th>0%</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100%</th>
</tr>
</thead>
</table>
5. Some people have the experience of finding new things among their belongings that they do not remember buying. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

8. Some people are told that they sometimes do not recognize friends or family members. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%
11. Some people have the experience of looking in a mirror and not recognizing themselves. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%
16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

19. Some people find that they sometimes are able to ignore pain. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

21. Some people sometimes find that when they are alone they talk out loud to themselves. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people. Circle a number to show what percentage of the time this happens to you.

| 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |
23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

25. Some people find evidence that they have done things that they do not remember doing. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%
### Depression, Anxiety and Stress Scale 21 (Lovibond & Lovibond, 1995)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

**The rating scale is as follows:**

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of the time
- 3 Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I was aware of dryness of my mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I couldn't seem to experience any positive feeling at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. I found it difficult to work up the initiative to do things</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I tended to over-react to situations</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. I experienced trembling (e.g., in the hands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I felt that I was using a lot of nervous energy</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9. I was worried about situations in which I might panic and make a fool of myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I felt that I had nothing to look forward to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I found myself getting agitated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I found it difficult to relax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I felt down-hearted and blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. I was intolerant of anything that kept me from getting on with what I was doing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. I felt I was close to panic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. I was unable to become enthusiastic about anything</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I felt I wasn't worth much as a person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I felt that I was rather touchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. I felt that life was meaningless</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### 11. Coping Inventory for Stressful Situations (Endler & Parker, 1990)

The following are ways people react to various difficult, stressful, or upsetting situations. Please circle a number from 1 to 5 for each item. Indicate how much you engage in these types of activities when you encounter a difficult, stressful, or upsetting situation.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schedule my time better.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. Focus on the problem and see how I can solve it.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. Think about the good times I’ve had.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. Try to be with other people.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. Blame myself for procrastinating.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. Do what I think is best.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. Become preoccupied with aches and pains.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. Blame myself for having gotten into this situation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. Window shop.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. Outline my priorities.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. Try to go to sleep.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12. Treat myself to a favourite food or snack.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13. Feel anxious about not being able to cope.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>14. Become very tense.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>15. Think about how I solved similar problems.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16. Tell myself that it is really not happening to me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>17. Blame myself for being too emotional about the situation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>18. Go out for a snack or meal.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19. Become very upset.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20. Buy myself something.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21. Determine a course of action and follow it.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>22. Blame myself for not knowing what to do.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>23. Go to a party.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>24. Work to understand the situation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>25. “Freeze” and not know what to do.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>26. Take corrective action immediately.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>27. Think about the event and learn from my mistakes</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>28. Wish that I could change what had happened or how I felt.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>29. Visit a friend.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>30. Worry about what I am going to do.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>31. Spend time with a special person.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>32. Go for a walk.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>33. Tell myself it will never happen again.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>34. Focus on my general inadequacies.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>35. Talk to someone whose advice I value.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>36. Analyse the problem before reacting.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>37. Phone a friend</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>38. Get angry.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>39. Adjust my priorities.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>40. See a movie.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>41. Get control of the situation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>42. Make an extra effort to get things done.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>43. Come up with several different solutions to the problem.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>44. Take some time off and get away from the situation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>45. Take it out on other people.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>46. Use the situation to prove I can do it.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>47. Try to be organised so I can be on top of the situation.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>48. Watch TV.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
12. Alcohol, Smoking and Substance Involvement Screening Test (Henry-Edwards, et al., 2003)

The following are some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills.

Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this questionnaire we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please indicate on the form. Whilst I am also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

Question 1

<table>
<thead>
<tr>
<th>In your life, which of the following substances have you ever used? (NON-MEDICAL USE ONLY)</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>d. Cocaine (coke, crack, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>i. Opioids (heroin, morphine, methadone, codeine, etc.)</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
**Question 2.**

<table>
<thead>
<tr>
<th>In the past three months, how often have you used the substances mentioned (first drug, second drug, etc?)</th>
<th>Never</th>
<th>Once or Twice</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or Almost Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>d. Cocaine (coke, crack, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>i. Opioids (heroin, morphine, methadone, codeine, etc.)</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>j. Other – specify:</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

If "Never" to all items in Question 2, skip to Question 6.
If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.
Question 3 (please respond if you used any substances in Question 3)

<table>
<thead>
<tr>
<th>During the past three months, how often have you had a strong desire or urge to use (FIRST DRUG, SECOND DRUG, ETC)?</th>
<th>Never</th>
<th>Once or Twice</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or Almost Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>d. Cocaine (coke, crack, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>i. Opioids (heroin, morphine, methadone, codeine, etc.)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>j. Other – specify:</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Substance Type</td>
<td>Never</td>
<td>Once or Twice</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or Almost Daily</td>
</tr>
<tr>
<td>-------------------------------------</td>
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<td>---------</td>
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<td>-----------------------</td>
</tr>
<tr>
<td>a. Tobacco products</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>(cigarettes, chewing tobacco, cigars, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>d. Cocaine (coke, crack, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>i. Opioids (heroin, morphine, methadone, codeine, etc.)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>j. Other – specify:</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Question 5 (please respond if you used any substances in Question 3)

<table>
<thead>
<tr>
<th>During the past three months, how often have you failed to do what was normally expected of you because of your use of (FIRST DRUG, SECOND DRUG, ETC)?</th>
<th>Never</th>
<th>Once or Twice</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or Almost Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>d. Cocaine (coke, crack, etc.)</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)</td>
<td>0</td>
<td>5</td>
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<td>7</td>
<td>8</td>
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<td>f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)</td>
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<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)</td>
<td>0</td>
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<td>7</td>
<td>8</td>
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<tr>
<td>h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
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<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>j. Other – specify:</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
Question 6 (All respondents please answer)

<table>
<thead>
<tr>
<th>Has a friend or relative or anyone else ever expressed concern about your use of (FIRST DRUG, SECOND DRUG, ETC.)</th>
<th>No, never</th>
<th>Yes, in the past three months</th>
<th>Yes, but not in the past three months</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
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<td>6</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)</td>
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<td>3</td>
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<td>g. Sedatives or Sleeping Pills (Valium, Serax, Rohypnol, etc.)</td>
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<td>6</td>
<td>3</td>
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<tr>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>j. Other – specify:</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
### Question 7 (All respondents please answer)

<table>
<thead>
<tr>
<th>Have you ever tried and failed to control, cut down or stop using (FIRST DRUG, SECOND DRUG, ETC.)?</th>
<th>No, never</th>
<th>Yes, in the past three months</th>
<th>Yes, but not in the past three months</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>b. Alcoholic beverages (beer, wine, spirits, etc.)</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>c. Cannabis (marijuana, pot, grass, hash, etc.)</td>
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<td>3</td>
</tr>
<tr>
<td>d. Cocaine (coke, crack, etc.)</td>
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<td>3</td>
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<tr>
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<td>3</td>
</tr>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)</td>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>i. Opioids (heroin, morphine, methadone, codeine, etc.)</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>j. Other – specify:</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

### Question 8 (All respondents please answer)

<table>
<thead>
<tr>
<th>Have you ever used any drug by injection? (NON-MEDICAL USE ONLY)</th>
<th>No, never</th>
<th>Yes, in the past three months</th>
<th>Yes, but not in the past three months</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### 13. Arnett’s Sensation-Seeking: Intensity subscale (Arnett, 1994)

For each item, indicate which response best applies to you:

- (A) describes me very well
- (B) describes me somewhat
- (C) does not describe me very well
- (D) does not describe me at all

<table>
<thead>
<tr>
<th></th>
<th>A. Describes me very well</th>
<th>B. Describes me somewhat</th>
<th>C. Does not describe me very well</th>
<th>D. Does not describe me at all</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. When the water is very cold, I prefer not to swim even if it is a hot day.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>2. When I listen to music, I like it to be loud.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>3. I stay away from movies that are said to be frightening or highly suspenseful.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>4. If I were to go to an amusement park, I would prefer to ride the rollercoaster or other fast rides.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>5. I would never like to gamble with money, even if I could afford it.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>6. I like a movie where there are a lot of explosions and car chases.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>7. In general, I work better when I’m under pressure.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>8. It would be interesting to see a car accident happen.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>9. I like the feeling of standing next to the edge on a high place and looking down.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td><strong>10. I can see how it must be exciting to be in a battle during a war.</strong></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>
### Multidimensional Scale of Perceived Social Support (Zimet, et al., 1988)

For each of the following statements please indicate how strong it is for you.

<table>
<thead>
<tr>
<th></th>
<th>1= Very Strongly disagree</th>
<th>2= Strongly Disagree</th>
<th>3= Disagree</th>
<th>4= Undecided</th>
<th>5= Agree</th>
<th>6= Strongly Agree</th>
<th>7= Very Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is a special person who is around when I am in need</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. There is a special person with whom I can share my joys and sorrows</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. My family really tries to help me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I get the emotional help and support I need from my family.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I have a special person who is a real source of comfort to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. My friends really try to help me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I can count on my friends when things go wrong.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I can talk about my problems with my family.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I have friends with whom I can share my joys and sorrows.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. There is a special person in my life who cares about my feelings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. My family is willing to help me make decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I can talk about my problems with my friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. Rosenberg Self Esteem Scale (Rosenberg, 1989)

Below is a list of statements dealing with your general feelings about yourself. If you **Strongly Agree**, circle **SA**. If you **Agree** with the statement, circle **A**. If you **Disagree**, circle **D**. If you **Strongly Disagree**, circle **SD**.

<table>
<thead>
<tr>
<th>Statement</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) I feel that I'm a person of worth, at least on an equal plane with others.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>b) I feel that I have a number of good qualities.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>c) All in all, I am inclined to feel that I am a failure.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>d) I am able to do things as well as most other people.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>e) I feel I do not have much to be proud of.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>f) I take a positive attitude toward myself.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>g) On the whole, I am satisfied with myself.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>h) I wish I could have more respect for myself.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>i) I certainly feel useless at times.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>j) At times I think I am no good at all.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
</tbody>
</table>

1. Are you willing to be contacted to participate in future research on gambling?

Yes ☐
No ☐

Thankyou for your extremely valuable contribution. Upon on the return of your completed questionnaire you will be mailed a $25 Colesmyer giftvoucher in appreciation of your time and effort.
Appendix E

Thankyou for participating in the ‘Personal history and gambling experiences’ study. Please find enclosed your $25 Coles-Myer voucher in appreciation for your time and effort in completing the survey and also the brief phone call you made initiating contact with the researchers.

All data you have provided will remain anonymous and strictly confidential. No individual data will be identifiable in the final data analysis or in the final write up of this study. If you wish, a summary of the findings from this study can be sent to you.

If you have any questions in relation to the study please feel free to contact Jessica McCormick (ph: (08) 8303 38 50) or Dr. Paul Delfabbro, School of Psychology, University of Adelaide (ph: 8303 57 44).

For any concerns about the ethics of this study, please contact the University of Adelaide’s Human Research Ethics Committee’s Secretary on phone: (08) 8303 60 28.

Thank you again for your participation in this study.

Yours Sincerely,

Jessica McCormick, University of Adelaide
Dr. Paul Delfabbro, University of Adelaide
Appendix F

Information Sheet

A Study of Poker-Machine Play

You are invited to participate in a study of poker-machine gambling. This study is part of a larger Ph.D. project that is designed to gather information about poker-machine gambling and to obtain a deeper understanding of people’s experiences with playing poker-machines. You may remember previously participating in the study entitled the Personal History and Gambling Experience Study in which you completed a survey. When you completed this survey, you indicated that you would not mind being contacted again about possible participation in future research projects.

The current study is researching people’s direct psychological experience while they are playing poker-machines. It is hoped that this information can assist in the refinement of current psychological theories related to gambling and to potentially help inform future treatment programmes for people who experience difficulties with their gambling involvement.

To take part in this research you will be asked to inform the researcher when you next go out to play poker machines. The researcher and an associate will meet you at a mutually convenient venue. You will then be asked to fill out a brief survey before and after you play poker machines for around 20 minutes.

It is anticipated that participation will take approximately 50 minutes with approximately 15 minutes each to complete the surveys and 20 minutes playing on a poker-machine.

Participation in this study is voluntary. Your valuable insights into your experiences whilst playing on poker-machines are essential to help enrich our understanding about some of the reasons why people may gamble and your contribution is greatly appreciated. In appreciation of your time and effort and costs of travelling to a mutually convenient poker-machine venue you will receive a $25 Coles Myer Gift Card (for use in all Coles Myer stores i.e. Coles and Bilo Supermarkets, Target and Myer) upon participation. Your answers to the surveys will be stored in a locked filing cabinet, and the information will be entered onto a password secured computer that only the study researcher’s have access to. All of the information from the survey will be kept completely anonymous, and will remain strictly confidential. No names or identifying information will be used in the write
up of the data collected from the survey. You are free to withdraw from the study at any
time and are welcome to obtain copies of any written reports arising from the study. Any
participant whose gambling involvement or state of consciousness suggests they may
benefit from professional advice will be sent their results in an explanatory letter once the
study is completed.

If you have any further questions about this project, please feel free to contact the
researchers using the contact details provided below.

Thank you for your interest in this study.

Ms. Jessica McCormick
Ph: 8303 3850
jessica.mccormick@student.adelaide.edu.au
Combined Master of Psychology (Clinical)/PhD candidate

Associate Professor. Paul Delfabbro, School of Psychology at the University of Adelaide
Ph: 8 303 4936
Supervisor

Dr. Linley Denson, Senior lecturer with the School of Psychology at the University of
Adelaide
Supervisor

For specific advice about gambling in general or difficulties with gambling, please contact
Gamblers Helpline on 1800 060 757 or Lifeline on 13 11 14.
Appendix G

PHENOMENOLOGY OF CONSCIOUSNESS INVENTORY, DIMENSIONS OF ATTENTION QUESTIONNAIRE AND JACOBS’ (1988) DISSOCIATIVE-LIKE EXPERIENCES QUESTIONS

With the following questionnaire, you are to rate your experience of yourself and the time period in question by means of statements like the one shown below. You are to evaluate your subjective experience according to the statements listed.

1. I felt very tranquil. 0 1 2 3 4 5 6 I felt very anxious.

You are to do this by circling the number on this inventory that best corresponds to your subjective experience during the time period in question for each of the following items. (If you are using an optical scanning sheet, then darken the number on the answer sheet that best corresponds to your subjective experience during the time period in question.) As an example, if during the time period in question, you would rate your mood as “very calm and tranquil” and not at all “very anxious”, you would circle the “0” on this questionnaire (or darken the number “0” on the answer sheet if you are using an optical scanning form) that corresponds to statement number one.

If, on the other hand, you were neither “very tranquil” nor “very anxious,” that is, you were midway between the two statements, you would circle the “3” on the answer sheet. Circling the “0” means your experience is very much like the statement on the left, while circling the “6” means your experience is very much like the statement on the right. Circling the numbers between “0” and “6” means your experience was somewhere between the statement on the left and that on the right. Please feel free to choose any one of the numbers between “0” and “6.”

Thus you are to circle the number (or darken in the number on the answer sheet if you are using an optical scanning form) for each statement that best corresponds to your subjective state at the time mentioned. Please do this for each of the following statements (found on the following pages) trying to be as accurate as you can.

In order to best determine your subjective experience, definitions have been provided for some of the key words used on the following pages.

1. SENSATIONS: are internal bodily impressions that you become aware of. Itches, pressure, pain, warmth, and coldness are examples of such sensations.

2. PERCEPTIONS: are impressions that you feel you receive from the external world. Perceptions come from the environment through sights, sounds, smells, etc.

3. FEELINGS OR EMOTIONS: are those internal impressions or moods such as happiness, joy, anger, excitement, etc.

4. THOUGHTS: are internal words, statements, and verbalizations that you are saying to yourself.

5. IMAGES OR IMAGERY: are internal visual (sights), auditory (sounds), kinesthetic (bodily), olfactory (smells), tactual (touch), or gustatory (tastes) impressions or pictures which pass before your mind, no matter how vague or dim they may be. They originate within you instead of coming from the environment.

6. IMPRESSIONS OR EVENTS: are any of the above, i.e., sensations, perceptions, thoughts, or images.
Name:____________________________________________________
Gender: M/F
Age:__________
Today's date:____________
Condition:____________

INSTRUCTIONS FOR COMPLETING THIS INVENTORY
YOU ARE NOW READY TO PROCEED TO THE QUESTIONNAIRE ITSELF.
PLEASE READ EACH STATEMENT SLOWLY AND CAREFULLY AND ANSWER
AS ACCURATELY AS YOU CAN BY CIRCLING THE NUMBER BETWEEN “0”
AND “6” THAT BEST CORRESPONDS TO YOUR SUBJECTIVE EXPERIENCE
DURING THE TIME PERIOD IN QUESTION. DO THIS FOR EACH STATEMENT.

Jacobs’ (1988) Dissociative-Like Experiences Questions

<table>
<thead>
<tr>
<th>Statement</th>
<th>Score Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I did not feel like I was in a trance.</td>
<td>0 1 2 3 4 5 6</td>
<td>I felt like I was in a trance.</td>
</tr>
<tr>
<td>2. I felt completely like myself.</td>
<td>0 1 2 3 4 5 6</td>
<td>I felt like I was somebody else.</td>
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<tr>
<td>3. I was completely aware of being myself.</td>
<td>0 1 2 3 4 5 6</td>
<td>I felt like I was outside of myself- watching myself</td>
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<tr>
<td>4. I can remember the preceding session.</td>
<td>0 1 2 3 4 5 6</td>
<td>The preceding session is hard to remember</td>
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<tr>
<td>5. I was completely aware of the time during the preceding session.</td>
<td>0 1 2 3 4 5 6</td>
<td>I completely lost track of time for the preceding session.</td>
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</table>
### Pekala’s PCI Questions (1991)

<table>
<thead>
<tr>
<th>Question</th>
<th>0</th>
<th>1</th>
<th>2</th>
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<tr>
<td>6. I can recall nothing that happened to me.</td>
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<td>I can recall everything that happened to me.</td>
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<td>7. I was continually conscious and well aware of myself.</td>
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<td>I lost consciousness of myself.</td>
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<td>8. I had complete control over what I was paying attention to.</td>
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<tr>
<td>I had no control over what I was paying attention to.</td>
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<td>9. Time seemed to greatly speed up or slow down.</td>
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<td>Time was experienced with no changes in its rate of passage.</td>
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<td>10. I felt no feelings of tension or tightness at all.</td>
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<td>I felt tense and tight.</td>
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<td>11. My state of awareness was very different from what I usually experience.</td>
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<td>My state of awareness was no different than usual.</td>
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<td>12. Conceptually, my thinking was clear and distinct.</td>
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<td>Conceptually, my thinking was confused and muddled.</td>
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<td>13. I maintained a very strong sense of self-awareness the whole time.</td>
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<tr>
<td>I did not maintain a very strong sense of self-awareness at all.</td>
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<td>14. My memory of the events I experienced is extremely clear and vivid.</td>
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<tr>
<td>My memory of the events I experienced is extremely blurred and hazy.</td>
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<td>15. I relinquished control and became receptive and passive to what I was experiencing.</td>
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<td>I was willfully controlling what I was experiencing.</td>
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<td>16. My thought processes were nonrational and very hard to comprehend.</td>
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<td>My thought processes were rational and easy to comprehend.</td>
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<td>17. I felt no sense of timelessness; time flowed as I usually experienced it.</td>
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<tr>
<td>Time stood still; there was no movement of time at all.</td>
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<td>18. My state of awareness was not unusual or different from what it ordinarily is.</td>
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<tr>
<td>I felt in an extraordinarily unusual and nonordinary state of awareness.</td>
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<td>19. I cannot remember what I experienced.</td>
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<td>I can remember just about everything that I experienced.</td>
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<td>20. I was not aware of being aware of myself at all; I had no self-awareness.</td>
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<tr>
<td>I was very aware of being aware of myself; my self-awareness was intense.</td>
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<td>21. My thinking was clear and understandable.</td>
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<td>6</td>
</tr>
<tr>
<td>22. The muscles of my body felt very tense and tight.</td>
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<tr>
<td>23. My perception of the flow of time changed drastically.</td>
<td>0</td>
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<tr>
<td>24. The thoughts and images I had were under my control; I decided what I thought or imagined.</td>
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<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>25. My state of consciousness was not any different or unusual from what it ordinarily is.</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
### Pekala’s (1991) Dimension of Attention Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. My mind was in a state of “no thought,” I was not aware of a single thought, feeling, sensation, etc.</td>
<td>0 1 2 3 4 5 6</td>
<td>My mind was continually occupied; I was always aware of thoughts, feelings, sensations, etc.</td>
</tr>
<tr>
<td>27. I was aware of many sensations, thoughts, feelings, etc. simultaneously.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was aware of only one sensation, thought, feeling, etc. at a time.</td>
</tr>
<tr>
<td>28. I was not able to become absorbed in what I was experiencing; I was acutely aware of other things around me.</td>
<td>0 1 2 3 4 5 6</td>
<td>I became so deeply absorbed in what I was experiencing that I became oblivious (neglectful) to everything else around me.</td>
</tr>
<tr>
<td>29. My attention was completely outer-directed.</td>
<td>0 1 2 3 4 5 6</td>
<td>My attention was completely inner-directed.</td>
</tr>
<tr>
<td>30. I felt absorbed in my thoughts, feelings, and sensations.</td>
<td>0 1 2 3 4 5 6</td>
<td>I felt very distant and detached from my thoughts, feelings, and sensations.</td>
</tr>
<tr>
<td>31. I was constantly aware of and scanning my internal or external environment for any changes in that environment.</td>
<td>0 1 2 3 4 5 6</td>
<td>I did not scan or try to be constantly aware of my internal or external environment for any changes in that environment.</td>
</tr>
<tr>
<td>32. I felt I was willfully and actively controlling what I was attending to.</td>
<td>0 1 2 3 4 5 6</td>
<td>I stopped actively controlling what I was attending to and became passive and receptive to my experience.</td>
</tr>
<tr>
<td>33. I felt very distant and detached from my thoughts, feelings, and sensations.</td>
<td>0 1 2 3 4 5 6</td>
<td>I felt absorbed in my thoughts, feelings, and sensations.</td>
</tr>
<tr>
<td>34. I was simultaneously aware of everything at once; I could perceive many subjective events simultaneously.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was not simultaneously aware of everything at once; I could not perceive many subjective events simultaneously.</td>
</tr>
<tr>
<td>35. Too many thoughts, feelings, sensations, etc. kept rushing through my mind.</td>
<td>0 1 2 3 4 5 6</td>
<td>Not a single thought, feeling, sensation, etc. went through my mind.</td>
</tr>
<tr>
<td>36. My attention was totally directed toward the environment around me.</td>
<td>0 1 2 3 4 5 6</td>
<td>My attention was totally directed toward my own internal subjective experience.</td>
</tr>
<tr>
<td>37. I was extremely vigilant and continually observant of everything in my attentional field.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was not vigilant or continually observant of everything in my attentional field.</td>
</tr>
<tr>
<td>38. I became extremely distracted and was not able to become absorbed in what I was experiencing.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was able to become so absorbed in what I was experiencing, I gave no notice to distracting events.</td>
</tr>
<tr>
<td>39. I was able to “let go” and receptively experience whatever came to my attention.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was actively involved in controlling what I was attending to.</td>
</tr>
<tr>
<td>Question</td>
<td>Rating</td>
<td>Description</td>
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</tr>
<tr>
<td>40. My attention was only focused on one subjective event at a time.</td>
<td>0 1 2 3 4 5 6</td>
<td>My attention was focused on many subjective events simultaneously.</td>
</tr>
<tr>
<td>41. My attention was completely directed toward my own internal subjective experience.</td>
<td>0 1 2 3 4 5 6</td>
<td>My attention was completely directed toward the world around me.</td>
</tr>
<tr>
<td>42. I felt detached or distant from my thoughts, feelings, and sensations.</td>
<td>0 1 2 3 4 5 6</td>
<td>I felt immersed and lost in my thoughts, feelings, and sensations.</td>
</tr>
<tr>
<td>43. My attentional field was completely empty of any sensations, feelings, or thoughts at all.</td>
<td>0 1 2 3 4 5 6</td>
<td>My attentional field felt “crowded” with many sensations, feelings, thoughts, etc.</td>
</tr>
<tr>
<td>44. I was actively involved in controlling what I was attending to.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was able to “let go” and receptively experience whatever came to my attention.</td>
</tr>
<tr>
<td>45. I was not continually scanning and observing my attentional field for different-occurring events and impressions.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was continually scanning and observing my attentional field for different-occurring events and impressions.</td>
</tr>
<tr>
<td>46. I became deeply absorbed in what I was attending to; I lost track of the world around me.</td>
<td>0 1 2 3 4 5 6</td>
<td>I did not become deeply absorbed in what I was attending to; I was extremely aware of the world around me.</td>
</tr>
<tr>
<td>47. I was not simultaneously aware of everything at once; I could not perceive many subjective events simultaneously.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was simultaneously aware of everything at once; I could perceive many subjective events simultaneously.</td>
</tr>
<tr>
<td>48. I was continually scanning and observing my attentional field for different-occurring events and impressions.</td>
<td>0 1 2 3 4 5 6</td>
<td>I was not continually scanning and observing my attentional field for different-occurring events and impressions.</td>
</tr>
<tr>
<td>49. My mind was continually occupied; I was always aware of thoughts, feelings, sensations, etc.</td>
<td>0 1 2 3 4 5 6</td>
<td>My mind was in a state of “no thought;” I was not aware of a single thought, feeling, sensation, etc.</td>
</tr>
</tbody>
</table>

50. How much did you win/lose during the session? _______________________
51. How many machines did you play? ________
52. Did the machine(s) run any special features during your session? ________
53. Did you consume any alcohol during the session? __________ If so, how many standard drinks? __________