Adolescent Gambling in South Australia

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Executive Summary

Project Aims

- The aim of this project was to obtain current data concerning the prevalence of gambling and gambling-related problems in South Australian adolescents (aged 13-17 years).

- This study followed up several major studies of adolescents in South Australia, including the 2001 study of 505 adolescents undertaken by Delfabbro and Thrupp in 2001 and the S.A. Department for Families and Communities telephone survey of 629 young people in 2005.

- The research examined: (1) The links between problem gambling and attitudes towards gambling, and peer and family gambling, (2) How young people gain access to adult forms of gambling before the age of 18, and (3) Young people's understanding of gambling odds, irrational beliefs about gambling, and their understanding of chance, probability and randomness.

- Also included in this study was an assessment of the popularity and influence of TV poker shows, as well as the links between video game play and gambling behaviour.

Methodology

- The study included both quantitative and qualitative components.

- The quantitative survey involved 2669 young people with an age of 13-17 years drawn from six metropolitan (n = 3) and regional secondary schools (n = 3).

- Students were asked to indicate whether they had gambled in the 12 months prior to completing the survey and if so, how often they gambled, and on what activities. Further questions related to their attitudes towards gaming; how they

had gambled on adult gambling activities before the age of 18; their views concerning the nature of gambling odds; questions relating to common biases or misconceptions in gambling; questions relating to their interest in video games; and the effect of TV poker shows.

- The focus group study involved 10 groups of students. Five involved students aged 13-14 years, and another 5 involved 16-17 year olds. Students were asked a series of general questions relating to their perceptions of gambling, their involvement with gambling activities, how it differed from other risk taking activities, its potential negative influences on problem gamblers, and appropriate help-seeking services and interventions for problem gamblers.

Results from Quantitative Survey

- Compared with the 2001 survey conducted in schools using a similar methodology, the results generally showed many significantly changes in participation. Although the overall annual participation rate was very similar to 2001 (56.3% vs. 62% for 2001), regular or weekly participation had dropped from 15% down to only 6%. The rapid growth in expenditure on mobile phones during the last 7 years was identified as a plausible reason for this decline in regular gambling amongst young people.

- The most popular form of gambling based on overall participation was instant scratch tickets (39.6%), followed by private card games (26.7%), betting on racing (18.8%), sporting events (14.9%) and bingo (13.7%). Keno, Crosslotto and Internet gambling attracted the least participants (9.6%, 8.6% and 4.0%, respectively).

- The percentage of young people gambling on lottery products had most strongly declined over the last 6 years, whereas card games for money had increased from 20% in 2001 to 27% in 2007.

- There were a number of gender differences. Males were significantly more likely than females to have gambled in the past year and to gamble regularly (weekly). Participation rates also varied slightly as a function of young people's age, with year 12-13 students slightly more likely to have gambled in the past year than the year 8 and 9 students.

- There was no significant association between ethnicity (Aboriginality or Torres Strait Islander (ATSI) or non-ATSI descent) or region (regional vs metropolitan schools) and overall gambling participation. However, individuals who identified themselves as being of ATSI descent were significantly more likely to have gambled on a weekly basis.

- Of those who had gambled in the past year, 61.1% indicated doing so with their own money. Males and Year 12-13 students were significantly more likely than females to have gambled with their own money than female students or year 8-9 students. Males were also found to spend more money per session on average than females on racing and scratch ticket gambling. In addition, ATSI participants spent significantly more money on average than other students on poker machines, sports gambling, bingo and Internet gambling.

Young people used a variety of ways to access gambling activities. Those who gambled on TAB or lottery products typically did so with adult assistance, whereas respondents predominantly played poker machines (at a hotel or club) by themselves and did so by entering the venue unnoticed, or with the assistance of friends who were familiar to venue staff.

Problem Gambling

- Most of the respondents surveyed experienced few problems with their gambling, as classified by the 4 point cut off of the DSM-IV-J. However, 63 or 2.4% or respondents could be classified as problem gamblers and a further 6.4% endorsed 1-3 items on the DSM-IV-J and could be classified as being 'at risk'.

- Boys were significantly more likely than girls to be problem gamblers (3.5% vs 1.2% for girls) and also to be 'at risk' gamblers (9.3% vs 3.6%).

- Indigenous students were four times more likely than other students to be classified as problem gamblers (9% compared with only 2.2% of non-indigenous students). In addition, indigenous students were twice as likely to be in the 'at risk' group (12.8% vs 6.4%).

- Problem gamblers were significantly more likely than other respondents to be involved in each form of gambling, to report having a large win when they first started gambling, and to report knowing someone with a gambling problem. They were also more likely to report that their peers and family members gambled and that they held positive views about gambling.

TV-poker Programs

- 71.7% of all students surveyed had watched TV-poker games, and 42.3% reported finding these programs enjoyable. Ten percent of the total sample indicated that watching these programs encouraged them and their friends to play card games for money and 14.7% acknowledged playing poker or other card games for money so as to imitate the games observed on TV.

- On average, 4.91 (*SD* = 1.84) friends typically played at one time and the maximum amount won on one day and taken home was $37.58 (*SD* = $46.04). The most anyone had lost was identified as being considerably smaller (*M* = $17.66, *SD* = $27.96).

- Problem gamblers were significantly more likely than those 'at risk' and those 'not at risk' to report having watched TV-poker games, to have enjoyed watching the programs, and to have been being encouraged by the programs to play card games for money.

- Males were more likely than females to report having watched TV poker games (84.7% vs 62.1%), to have enjoyed the programs (62.6% vs 27.8%), to have been encouraged to play card games for money by the programs (16.4% vs 4.6%), and to report that they played card games for money like on TV (22.9% vs 8.0%).

- Indigenous students were significantly more likely than non-indigenous students to report that watching these games encouraged them to play card games for money (21.4% vs 10.4%), and to report that they currently played card games for money like on TV (25.4% vs 15.3%). In addition, the maximum amount lost by indigenous students (M = \$36.41, SD = \$50.34) was significantly higher than the maximum amount lost by non-indigenous students (M = \$16.74, SD = 26.31).

Video Game Play

- Respondents were most likely to play TV video games and PC games most regularly, whereas arcade games were played infrequently and for short periods.

- Higher rates of involvement in video games tended to be associated with higher involvement in gambling, but this associated appeared to be confounded by gender differences. Boys were significantly more likely to gamble and to play video games than girls.

Understanding Odds and Perceived Risks of Gambling

- All students rated poker and blackjack as being more skilful than other forms of gambling. Problem gamblers rated games of pure chance (e.g., poker machines and scratch tickets) as involving more skill than did the other respondents.

- The findings indicated that many young people do not possess an accurate understanding of the true odds of gambling activities and are likely to overestimate the probability of winning on activities such as lotteries.

- Problem gamblers were more likely to endorse statements that reflected an erroneous understanding of gambling outcomes. For example, young problem gamblers held a more optimistic attitudes towards the likelihood of winning as well as the profitability of gambling. They were also more susceptible to various biases such as the gambler's fallacy and illusion of control.

- At the same time, problem gamblers were generally no less accurate in their understanding of questions relating to basic probability.

Focus Groups

- Students tended to have a limited understanding of what gambling was. Many of the younger students struggled to identify conceptually what made something gambling and instead, tended to define gambling only by giving examples of different gambling activities. The older respondents were able to name a wider range of gambling activities than the younger group, but again only displayed a superficial knowledge of what gambling was and did not generally draw attention to the important role of chance, or the uncertainty of outcomes.

- Students appeared to understand the concept of risk. The responses provided by the year 8-10 students reflected two central themes: (1) The perception that risk is associated with uncertain outcomes and, (2) The idea that risk means there may be negative consequences. Responses from the older group revealed a more elaborate understanding of risk. Gambling was viewed as risky because one could lose, it was difficult to win, and because of the risk of becoming addicted.

- Most of the younger group had difficulty providing a clear understanding of the terms 'luck' and 'chance', with several respondents indicating that luck and chance were essentially the same thing. In contrast, the year 11-12 respondents showed a more advanced understanding of luck and chance. For

some, luck was believed to be something that could be acquired by performing rituals or obtaining objects, and that this could influence one's chance of winning. For others, luck was associated with having no control over outcomes. In turn, chance was correctly understood as a mathematical concept that indicated the likelihood of either winning or losing.

- The respondents were asked to indicate whether gambling was different from other games they played or running a business and if so, how. Both groups did not quite capture the fundamental factors; namely, that gambling is designed to have an inevitable element of chance, the outcomes are designed to prevent players from making a long-term profit, and that one usually cannot improve one's performance using practice.

- Although the majority of younger respondents indicated believing that there was no skill involved in gambling apart from cheating, a significant proportion of respondents still reported that you could become good at gambling, without further clarifying that one could only become skilled at certain forms of gambling. While many of the older students had a reasonable understanding of the potential role of genuine skill in gambling, and that not all types of gambling were the same, some also were not able to make this distinction.

- Only a handful of students reported that they had never before tried gambling. The students indicated having tried a similar range of activities. However, the older students were more likely to have tried poker-machine gambling than their younger counterparts.

- The vast majority of younger students who had tried gambling indicated having done so with their families. Young people reported gambling on instant scratch tickets, bingo, and keno with the help of their mothers, while horse and sports betting had tended to be undertaken with their fathers. Card

games such as poker were described as a popular family activities and a vehicle through which young people had learned the rules of the game.

- Gambling on card games was the most popular response among the older respondents interviewed. The majority of these respondents indicated playing poker in particular, which was usually played with friends for enjoyment. Those who indicated gambling on horse races often gambled on major racing events such as Melbourne Cup or Oakbank racing carnival, with family, particularly with fathers. While some of the older respondents had engaged in instant scratch ticket gambling with family members, others seemed to be buying instant scratch tickets on their own. In addition, although this form of gambling has been legalized for the majority of respondents in this group, several indicated that they had been gambling while underage with the help of their parents.

- Unlike the younger respondents, several of the year 11-12 respondents indicated knowing someone who had played the pokies or got into the casino before they were 18. These respondents acknowledged that checking proof of age at over age venues was not always systematic, that youth who appeared to be over 18 often were not asked to produce identification and that "fake IDs" were often used to gain access.

- The younger students believed that young people gambled for money, fun or in response to peer pressure. The reasons provided by the older group included for the chance to win, the adrenaline, because you're not meant to, because it's cool or fun, peer pressure, family influence, and out of boredom.

- The younger people interviewed had little understanding of how some people developed problems with gambling. However, they were able to identify a number of factors which they believed differentiated problem gamblers from social gamblers. Responses to this question revealed that young people are

aware of the consequences of problem gambling, but hold little understanding of the potential for social gambling to escalate into problematic behaviour.

- The older group suggested a number of pathways by which people may develop problems with gambling. Popular responses included increased availability, boredom, or the absence of other social avenues, an addictive personality, a need or desire to win, the influence of early big wins and the predominant means by which problem gambling was perceived to develop, via chasing losses. Similar factors were perceived by the older group to distinguish social and problem gamblers.

- The younger respondents indicated that they would seek help if they had a gambling problem. However, those interviewed had a limited awareness of how to go about seeking help. Furthermore, when asked what they would do if they believed a friend had a gambling problem, a popular response related to finding ways to distract their friend, rather than acknowledging the need for outside help, reinforcing the need for increasing young people's awareness of the various avenues of help available to them.

- The older students provided a greater awareness of the various help services available, and were more inclined to draw upon professional help services such as counsellors, rather than trying to solve the problem themselves.

- The year 8-10 respondents indicated that they had watched a number of TV shows that involved gambling. The majority of respondents indicated that they encouraged young people to gamble.

- Only one of the older students indicated that they had not watched any TV gambling shows. Despite acknowledging predominantly negative views of such shows, many of the older respondents also felt that the shows encouraged them to gamble and in particular that they taught you how to gamble.

- The vast majority of year 8-10 respondents reported having little experience with Internet gambling and only a couple of respondents indicated that they were aware of someone that had tried gambling on the Internet.

- The majority of respondents in the older group were aware of Internet gambling sites, but had not personally tried this form of gambling. Several respondents, however, reported gambling on the Internet without real money, thereby demonstrating how young people could experiment with gambling in a way that could easily progress to legitimate gambling with money. In addition, some respondents indicated that they had already tried Internet gambling despite being underaged.

- Younger respondents were aware of a number of responsible gambling commercials; however, they did not identify the key intended messages (i.e., "Think of what you're really gambling with"). Responsible gambling messages were generally viewed pessimistically, although some of the respondents suggested that the advertising may be effective for those who had not yet developed gambling problems. The respondents perceived the hard hitting approaches to be the most effective way to convey responsible gambling messages. Other suggestions included informing people of the true odds of winning and featuring real world people. However, while some felt they would respond to everyday images, others still indicated that using a famous person would have a bigger impact.

- The year 11-12 respondents were aware of responsible gambling messages in TV and print media. However, while some respondents were able to identify the particular catch phrase used in the various forms of advertising, they did not appear to understand the underlying message.

- To make these messages more effective, it was suggested that campaigns should include more factual information about the likelihood of winning and the prevalence of problem gambling and emphasizing the real odds of winning in a more obvious way, rather than via small print.

Project Summary

This report presents the findings of research conducted in South Australia during 2007. The research project entitled, *Youth Gambling Research Project,* was funded by an Independent Gambling Authority (IGA) research grant and represented a collaboration between The Department of Education and Children's Services and the University of Adelaide. The Chief Investigators for this project were Associate Professor Paul Delfabbro and Ms. Chrisi Lambos, University of Adelaide and Mr. Stan Puglies, Department for Education and Children's Services (DECS). The project was managed and overseen by Mr. Mark Williams and Ms. Ashley Burnett, DECS.

Chapter 1: Background and Literature Review

1.1 Gambling in Australian Adults

Problem gambling has emerged as a significant public health concern in today's society. Epidemiological studies consistently show that between 80-90% of adults in Australia gamble at least once per year. This finding has emerged in both national level studies (e.g., Productivity Commission, 1999) and also in studies conducted on a State or Territory level (ACT: Wenzel et al., 2004; New South Wales: Dickerson, Allcock & Baron et al., 1996; Queensland: Dickerson, Baxter, Boreham, Harley & Williams, 1995; Dickerson, Boreham & Harley, 1995; Dickerson, Baxter, Harley, Maddern & Baron, 1995; South Australia: Delfabbro & Winefield, 1996; S.A. Department of Human Services, 2001; Tasmania: Dickerson, Walker & Baron, 1994; Dickerson & Maddern, 1997, Western Australia: Dickerson, Baron & O'Connor, 1994). In addition, approximately 30-40% of Australian adults report gambling on a weekly basis (Productivity Commission, 1999).

Gambling expenditure rates provide an alternative means of assessing the extent to which people are involved in various gambling activities. In the 2003-2004 financial year, Australians lost $16.21 billion on gambling (Queensland Treasury, 2005). This figure represents a 4.0% increase from the previous financial year (from $15.35 billion in 2002-2003). Furthermore, between 2001 and 2004 in South Australia, net gambling expenditure increased 22% to reach a total of over $1 billion for the State as a whole (Delfabbro, 2004). Findings presented by the Federal Productivity Commission (1999) suggested that at least 30% of this total expenditure was likely to have been due to problem gambling. Prevalence rates of problem gambling in the Australian adult population are estimated at between 1-2%.

In the national research literature, problem gambling is defined as "difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community" (Neal, Delfabbro, & O'Neil, 2005). This definition takes both the behaviours and consequences of gambling into account.

Although monetary loss is an obvious repercussion of gambling, problem gambling can also have significant consequences for people's psychological, social and occupational wellbeing (Ladouceur, 2004a). For example, approximately 60-80% of problem gamblers are believed to experience clinically significant anxiety, depression and suicide ideation. Around 67% are smokers, with 33% found to be regular smokers. Around 15-20% of problem gamblers experience problems with substance abuse. In addition, the Federal Productivity Commission (1999) estimated there were 1,600 gambling-related divorces in Australia each year, and that around 20-50% of problem gamblers reported experiencing reduced productivity and significant employment disruption as a result of their gambling.

1.2 Gambling in Young People

Research into the prevalence and consequences of gambling in the Australian adult population is well established. However, only recently has research been directed towards gambling in younger adult populations. This imbalance has occurred despite the fact that the numerous surveys into the prevalence of gambling in Australia (e.g., Delfabbro & Winefield, 1996; Dickerson, Allcock, Blaszczynski, Nicholls, Williams & Maddern, 1996; Productivity Commission 1999; South Australian Department of Human Services, 2001) have revealed that the highest rate of problem gambling occurs in younger adults (those aged 18-30). Accordingly, it is not surprising that many researchers argue that gambling behaviours are likely to have developed during adolescence. Numerous studies have supported this view. For instance, Blaszczynski, Walker, Sagris and Dickerson (1997) found that problematic gambling behaviour was present in individuals as young as 10 years old. In addition, findings of the Productivity Commissioner report (1999) indicated that 35% of males currently seeking treatment for problem gambling commenced regular gambling between the ages of 11–17 years. Furthermore, numerous studies into gambling in adult populations (e.g., Abbott, McKenna & Giles, 2000; Shaffer & Hall, 2001) have found that adult problem gamblers report beginning gambling at a young age (usually between 8-12 years).

In addition, research conducted internationally has found young people to be at a significantly higher risk than adults for the development of gambling related problems

(Hardoon & Derevensky, 2002; National Gambling Impact Study Commission, 1999; National Research Council, 1999). When the results of research conducted in the United Kingdom (Fisher, 1993, 1999; Wood & Griffiths, 1998), the United States (Arcuri, Lester & Smith, 1985; Shaffer & Hall, 1996, 2001; Volberg & Moore, 1999), Canada (Derevensky & Gupta, 1998, 2000; Gupta & Derevensky, 1998; Ladouceur, Dube & Bujold, 1994; Ladouceur & Mireault, 1988; Wynne et al., 1996) and Australia (Delfabbro, Lahn & Grabosky, 2005; Delfabbro & Thrupp, 2003; Moore & Ohtsuka, 1997) are considered as a whole, it appears that between 60-80% of young people aged 13-17 years gamble at least once per year and that at least 3-5% of young people report behaviours indicative of adult problem gambling (Derevensky & Gupta, 1996; Derevensky, Gupta & Winters, 2003; Fisher, 1992; Lesieur & Klein, 1987; Shaffer & Hall, 1996; Winters & Stinchfield, 1993). These behaviours include: chasing losses, a preoccupation with gambling, overlooking important commitments (e.g., friendships or school) to continue gambling and lying to friends or family about the extent of their gambling.

Such research involving the administration of problem gambling measures to adolescents (12-17 year olds) has provided further support for problematic gambling behaviour developing prior to adulthood. In fact, most of the research has found prevalence rates of adolescent problem gambling that are 2-3 times those obtained in adult populations. For example, Moore and Ohtsuka's (1997) study of over 1000 Victorian school and university aged students (14-25 years) using the modified 10–item version of the South Oaks Problem Gambling Screen (SOGS) (Lesieur & Blume, 1987) classified 3.1% of the students as problem gamblers. The results of this research were later confirmed in a follow-up study that indicated 3.8% of the sample (769 individuals aged 15-18) could be classified as problem gamblers on the SOGS (Moore & Ohtsuka, 2001). Similarly, when Delfabbro and Thrupp (2003) administered the DSM-IV-J measure of adolescent problem gambling to a sample of 505 15-17 year olds in South Australia, they found that approximately 4% were experiencing problems with gambling. In addition, when two standardized measures of problem gambling (the DSM-IV-J and the Victorian Gambling Screen) were administered by Delfabbro, Grabosky, and Lahn

(2005) to a sample of adolescents in the Australian Capital Territory (ACT), the results indicated that around 3-4% of the sample were experiencing significant gambling problems. Similar results indicating that the rate of problem gambling in adolescents may exceed that experienced in the adult population have also been found in studies conducted in Canada (Gupta & Derevensky, 1998, 2000; Hardoon & Derevensky, 2002), New Zealand (Clarke & Rossen, 2000; Ladouceur & Mireault, 1988; Lesieur et al., 1991; Lesieur & Klein, 1987; Sullivan, 2001), the United States (Jacobs, 1989; Shaffer, LaBrie, Scanlan & Cummings, 1994; Steinberg, 1988; Winters, Stichfield & Kim, 1995), and in the United Kingdom (Fisher, 1993, 1999; Wood & Griffiths, 1998).

In addition, adolescent gambling has been linked to a number of other problems such as increased involvement in risk-taking behaviours, reduced educational performance and poorer psychosocial adjustment. Adolescents with gambling problems have been found to have higher rates of petty criminal behaviour, substance abuse and truancy (Fisher, 1992, 1993; Griffith & Sutherland, 1998; Gupta & Derevensky, 1998; Shaffer & Korn, 2002; Yeoman & Griffiths, 1996). Adolescent gambling has also been associated with risky driving and underage drinking (Burnett, Ong & Fuller, 1999; Griffiths & Sutherland, 1998; Jackson, 1999). Furthermore, Delfabbro, Grabosky and Lahn (2005) reported that among adolescent problem gamblers in the ACT, smoking rates were four times higher, marijuana use was six times higher and hard drug use was 20 times higher than in their non problem gambling counterparts. Although it is unclear whether such problems are a consequence of or contributor to problem gambling, the strong association indicates that it would be beneficial for adolescents experiencing such psychosocial problems to also be screened for problem gambling.

Problem gambling has also been linked to a number of factors indicative of negative educational performance (Gupta & Derevensky, 1998; Fisher, 1995, 1999; Ladouceur & Mireault, 1988; Lesieur & Klein, 1987). Adolescent problem gamblers were found to report greater dissatisfaction with school (Burnett, Ong & Fuller, 1999), reduced engagement with school (Jackson, 1999), and disrupted study related to their need to gamble (Delfabbro & Thrupp, 2003).

Adolescent problem gambling has in turn been associated with indicators of poor psychosocial adjustment (Dickson, Derevensky & Gupta, 1999; Harnoon, Gupta & Derevensky, 2004; Jacobs, 1987; Stinchfield, 2000). In their study of 778 high school students (aged 16-18) in Melbourne, Burnett, Ong and Fuller (1999) reported that individuals who gambled on a weekly basis exhibited higher levels of social maladjustment and tended to have more friends that gambled, relative to those who did not gamble or those who gambled infrequently. In addition, Delfabbro, Grabosky and Lahn (2005) found that adolescent problem gamblers scored significantly poorer than non problem gamblers on measures of negative mood, self esteem and alienation or disillusionment with society.

1.3 Summary

When these findings are considered together, it becomes apparent that the problem gambling is not only prevalent amongst adolescents, but that the rates may exceed those of adults with significant legal, psychosocial and educational consequences. These results reinforce the need for a greater understanding of how under-aged gambling occurs and possibly stricter enforcement of age restrictions of gambling; for example, through the use of more thorough age-verification procedures. In addition, greater education of the true nature and risks of gambling to school age children (as early as 12-14 years of age) may be required.

1.4 Theoretical explanations for gambling

A wide range of psychological explanations have been proposed to account for excessive gambling. The various explanations can be broadly classified into four main groups: addiction, dispositional, behavioural and cognitive theories. Although much of this current research project is concerned with cognitive theories of gambling, a brief summary of the other theoretical perspectives is provided. For comprehensive reviews of these theories, the reader is referred to number of books and papers (e.g., Griffiths, 1995; Griffiths & Delfabbro, 2001; Lesieur, 1989; Petry, 2005; Rogers, 1998; Walker, 1992a).

1.5 Addiction Theories

According to this view, gambling is viewed as a physiological addiction like alcoholism or substance dependence (Griffiths, 1995; Lesieur & Rosenthal, 1991). Central to this theory, is that gambling is maintained by the same processes inherent in these other disorders; namely, tolerance, withdrawal and craving. Gamblers are thought to need to bet progressively larger and larger amounts to gain the same level of arousal (tolerance), and they may also experience symptoms such as depression or anxiety when they abstain from gambling (withdrawal), or develop a strong physiological desire to gamble (cravings) (Lopez Viets, 1998). Gamblers have also been found to be highly prone to co-morbid addictions (Blasczcynski, 1996; Ciarrocchi & Richardson, 1989; Custer & Custer, 1978; Griffiths, 1994b, 1994c; Jacobs, 1986; Lesieur, 1988; Lesieur, Blume & Zoppa, 1986; Lesieur & Heineman, 1988; Lesieur & Rosenthal, 1991; Linden, Pope & Jonas, 1986; Lopez Viets, 1998; Ramirez, McCormick, Russo & Taber, 1984). Such findings have led to the proposal that an 'addiction-prone personality' exists, in which certain people are viewed as more likely to fall victim to a range of addictions. In other words, even if gambling was not available in our society, problem gamblers would be likely to fall victim to some other form of addiction (Comings et al., 1996; Productivity Commission, 1999). Furthermore, problem gamblers are viewed as possessing a particular personality style that makes them more vulnerable to various forms of addiction and thus as a group, are believed to be different from others in society. However, the absence of a viable physiological mechanism, as is evident in *bona fide* addictions such as alcoholism, has led to the rejection of such a theory by numerous

researchers (Blaszczynski, 1996; Delfabbro & Le Couteur, 2003; Walker, 1989). Furthermore, although alcoholics often continue to use alcohol to avoid the detrimental consequences of withdrawal, problem gamblers often continue to gamble to either recoup losses or to seek enjoyment or excitement. Problem gambling is not always characterized by consistent periods of uncontrollable gambling. In many cases, they will shift between periods of excessive gambling and periods of controlled gambling. Such a pattern would not usually be expected if problem gambling was an enduring part of their physiology, or a genuine pathology.

1.6 Dispositional Theories of Gambling

The idea that inborn factors can place certain people at risk for developing gambling problems has taken many forms, four of which are detailed below.

1.6.1 Problem Gamblers as Pathological Risk Takers

In the gambling literature, problem gamblers are commonly viewed as pathological risk takers. This idea is based on the notion that problem gamblers as a group differ in their level of physiological arousal when compared to other people (Brown, 1986; Burnett, Ong & Fuller, 1999; Steel & Blaszczynski, 1996). Problem gamblers are viewed as requiring higher levels of stimulation in order to reach an optimal level of arousal. However, research has provided little evidence to support the view that physiological arousal increases significantly during many forms of gambling (e.g., poker machine gambling) or that problem gamblers differ from other gamblers in terms of their need for arousal (Walker, 1992b). For example, while Wolfgang (1988) and Anderson and Brown (1984) found that regular gamblers tended to score higher than their matched controls on measures of sensation seeking, other studies identified no significant differences on such measures (e.g., Allcock & Grace, 1988; Ladouceur & Mayrand). Indeed, when Blaszczynski, Wilson and McConaghy (1986) administered Zuckerman's (1979) sensation seeking scale, they found that problem gamblers actually scored lower than population norms on many of the subscales. Similar paradoxical findings were also identified in Blaszczynski et al. (1990) and Dickerson, Hinchy and Fabre (1987). In other words, although sensation-seeking appears to predict a greater

involvement in risk-taking activities such as gambling; it does not appear to be related to the level of involvement.

1.6.2 Problem gamblers as Possessing Impaired Control

Numerous researchers have referred the concept of "impaired control" in their explanations of excessive gambling (Baron, Dickerson & Blaszczynski, 1995; Blaszczynski & McConaghy, 1989; Carlton *et al*., 1987; McCormick, 1994; McGurrin, 1992; O'Connor & Dickerson, 1999; O'Connor & Dickerson, 2003). Persistent gambling has been attributed to problem gamblers progressively losing control over their behaviour and more specifically, losing the ability to adhere to limits and resist the urge to gamble. Prevalence studies by Dickerson et al. were used to develop a scale of impaired control (The Control of Gambling Scale, now referred to as the Scale of Gambling Choices). Studies based on this scale supported the existence of a relationship between impaired control and detrimental gambling outcomes such as time spent gambling, gambling expenditure and chasing of losses. However, although it is possible that gambling leads to a progressive loss of control over one's behaviour, it is also feasible that people who generally speaking have poorer regulation of their behaviour may be more prone to gambling excessively (Delfabbro & Le Couteur, 2003).

1.6.3 Problem Gambling as a Personality Disorder

Several researchers have explored the prevalence of personality disorders in problem gamblers (e.g., Black & Moyer, 1998; Blaszczynski & Steel, 1998; McCormick & Taber, 1987; Rosenthal, 1986; Roston, 1961; Specker, Carlson, Edmonson, Johnson & Marcotte, 1996; Taber, 1982). Given the high rates of co-morbidity, particularly regarding the dramatic and erratic Cluster B disorders (such as histrionic, narcissistic and borderline personality disorders), it has been suggested that problem gamblers differ from non-problem gamblers in certain personality traits. Blaszczynski, Wilson and McConaghy (1986) found that problem gamblers obtained higher Neuroticism and Psychoticism scores on the Eysenck Personality Questionnaire when compared to non-problem gamblers. On the other hand, Carroll and Huxley (1994) in their investigation of young slot machine players found elevated scores for Psychoticism, but no difference

between problem and non-problem gamblers for Neuroticism or Extroversion. In contrast, Bartussek, Diedrich, Naumann and Collett (1993) found evidence of elevated Extroversion scores among problem gamblers. Others, however, failed to identify this difference (e.g., Barnes & Parwani, 1987; Malkin & Syme, 1986), providing a pertinent example of how the evidence in this area remains largely inconsistent.

1.6.4 Problem gambling as a maladaptive coping strategy

A number of studies have examined the relationship between maladaptive coping styles and problem gambling (Blaszczynski & McConaghy, 1989; Gupta, Derevensky & Marget, 2004). McCormick (1994) compared the coping styles adopted by patients in a facility for substance abuse treatment and found that those with co-morbid substance abuse and gambling problems used significantly more distancing/coping, escape/avoidance and confrontative coping strategies than those with only substance abuse problems. This line of thinking has led to the conceptualization of gambling as a harmful coping strategy used to handle stress and/or depression (Blaszczynski & McConaghy, 1989). However, it is important to note that the research such claims are based on tends to be cross sectional in nature, raising issues of causality. It remains unclear whether maladaptive coping strategies put one at risk for excessive gambling or whether continued involvement in gambling impedes the development of more adaptive coping behaviours. Additional research is required that incorporates longitudinal designs and multiple outcome measures.

1.7 Behavioural approaches

The behaviourist approach to gambling employs both classical and operant conditioning principles to explain why people gamble in spite of the monetary and personal risks. An outline of the main principles of behavioural research follows.

1.7.1 The role of classical conditioning

Behavioural explanations of problem gambling emerged in the early 1950s. A popular perspective stemmed from Pavlov's ideas about classical conditioning. Classical conditioning theories suggest people persist with gambling as a result of associative

learning processes. Gamblers become conditioned to the arousal that comes to be associated with gambling, or alternatively, gambling becomes a means of reducing negative psychological states such as anxiety. According to this model, the gambler becomes conditioned over time through the experience of gambling itself (Anderson & Brown, 1984; Sharpe & Tarrier, 1993). The experience of gambling leads to increased arousal, or often intense anxiety that is reduced by engaging in gambling.

1.7.2 The role of operant conditioning

Operant conditioning theory was proposed by Skinner in 1938 and further developed by Ferster and Skinner in 1957. Operant theory is a set of principles that draw attention to how when behaviour is rewarded, it becomes more likely to be reproduced at a later time. According to this model, gambling can be viewed as highly appealing as it has the potential to provide various enticing rewards including money, stimulation, entertainment and excitement (Delfabbro & Winefield, 1999a, 1999b; Dickerson, Hinchy, Legg England, Fabre & Cunningham, 1992). Researchers such as Walker have criticized this thinking as the gambler generally loses at a much greater rate than they win or receive rewards. However, as pointed out by Delfabbro and Winefield (1999) one does not have to assume that the gambler is entirely rational in their evaluation of the proportion of wins and losses. Greater weight may be given to the experience of winning, or the gambler may use short term assessments of the balance of wins and losses.

Operant conditioning models propose that people continue to gamble because they become accustomed to the intermittent reinforcement schedule under which gambling operates (Dixon, Hayes & Aban, 2000; Griffiths & Delfabbro, 2001; Knapp, 1976; Martin & Pear, 1992; Rachlin, Raineri & Cross, 1991; Schwartz, 1992). As a result, their behaviour becomes highly resistant to long sessions without reward. In effect, losing periods come to be associated with a greater probability of winning, because gamblers have developed a conditioned expectation that wins will eventually follow losses (Dixon, Hayes, Rehfeldt & Ebbs, 1998). This will always be confirmed as wins will eventually occur due to the laws of chance.

1.8 Cognitive theories

Although both dispositional and behavioural theories have offered plausible explanations, strong empirical support has accumulated for cognitive theories of gambling (Joukhador, Maccallum & Blaszczynski, 2003; Toneatto, Blitz-Miller, Calderwood, Dragonetti & Tsanos, 1997; Gilovich, 1983; Griffiths, 1990, 1994; Ladouceur & Walker, 1996; Sharpe, 2002; Walker, 1992a). The cognitive approach draws attention to the paradoxical nature of gambling. Long periods of play virtually assure monetary loss and accordingly, prolonged play should be aversive and rare (Dowling et al., 2005; Griffiths, 1994; Wagenaar, 1998; Walker, 1992). Thus, the fact that gamblers continue to persist despite these circumstances indicates that gamblers participate against their better judgement (Griffiths, 1994; Ladouceur & Walker, 1996; Langer, 1975; Langer & Roth, 1983). This has been attributed to a variety of well-documented decision-making errors, including overestimations of control and other heuristics and biases (Griffiths, 1990; Ladouceur, 2004; Ladouceur & Walker, 1996; Walker, 1988).

Heuristics or mental shortcuts are commonly used in everyday life to facilitate more efficient information processing. However, when applied in a gambling context, these same heuristics can lead to information processing errors and erroneous perceptions (Griffiths, 1994; Presson & Benassi, 1996; Wagenaar, 1988; Walker, 1992). This point is illustrated in experimental studies using the *speaking aloud* method. The technique requires subjects to verbalize all uncensored thoughts and rationalizations aloud while gambling (Coulombe, Ladouceur, Desharnais & Jobin, 1992; Gaboury & Ladouceur, 1988; Gilovich & Douglas, 1986; Toneatto et al., 1997). Studies using this method have consistently demonstrated that over 70% of verbalizations recorded during gambling sessions are irrational (Coventry & Norman, 1998; Delfabbro, 2004; Gaboury & Ladouceur, 1988; Griffiths, 1994; Ladouceur, Gaboury, Dumont & Rochette, 1988; Walker, 1992). These findings have been confirmed in both laboratory settings (e.g., Gaboury & Ladouceur, 1988; Ladouceur & Gaboury, 1988; Ladouceur, Gaboury, Dumont & Rochette, 1988) and ecologically valid gambling settings involving regular

gamblers (Griffiths, 1994; Ladouceur, Gaboury, Bujold, Lachance & Tremblay, 1991; Walker, 1992)

In further support of cognitive theories, studies have shown that people's propensity to fall victim to biases appears to be greater amongst regular gamblers than non-regular (non-weekly) gamblers and appears to be most prevalent amongst problem gamblers (Griffiths, 1994; Jefferson & Nicki, 2003; Joukhador et al., 2003; Raylu & Oei, 2004; Toneatto et al., 1997; Walker, 1992a). Gamblers appear to be susceptible to many erroneous perceptions, with strong empirical support shown for six main cognitive biases in gambling (Wagenaar, 1988). These biases include the availability heuristic, representativeness, flexible attributions, belief in luck, just world views and the illusion of control, each of which is considered to play a role in maintaining persistent gambling behaviour. A brief outline of these biases is presented below:

1.8.1 Availability Heuristic

The availability heuristic explains how probability judgements may be influenced by the ease with which specific instances can be recalled. This bias has been shown to be useful in certain forms of inductive reasoning (Tversky & Kahneman, 1973). However, in a gambling context the influence of factors such as recency and saliency can lead to misguided assessments of the probability of winning (Corney & Cummings, 1985). Winning tends to be a salient event that is often remembered with greater ease than losing. For this reason, evaluations of success tend to be overly influenced by a small number of big wins, whereas inadequate consideration is given to the large number of accompanying losses (Delfabbro, 1998). In this way, use of the availability heuristic in a gambling context may lead to an exaggerated view of personal success and mask the reality that gambling is rarely profitable in the long run (Wagenaar, 1988).

1.8.2 Representativeness Heuristic

Tversky and Kahneman (1973) pointed out that people are also likely to be susceptible to representativeness biases, where short-term sequences of events are

believed to follow the same self-correcting procedure as long-term sequences. For example, when subjects were asked to generate random sequences of imaginary coin toss outcomes, they created solutions with more alternations than chance would predict (Tversky & Kahneman, 1973). This reasoning reflects a misunderstanding of the nature of randomness. In a single coin toss, the coin is equally likely to land on either heads or tails. Accordingly, the law of averages suggests that a long-run distribution of coin tosses will contain an equal proportion of heads and tails (Tversky & Kahneman, 1971). This, however, does not necessarily hold for short-run sequences of events, as the outcomes are random and occur independent of each other (Massaro, 1990). Moreover, the representativeness bias may also work on a more general level. People expect wins to occur at certain intervals. Accordingly, a series of losses may not be seen as a disincentive for gambling, but rather an indication that a big win may be approaching (Corney & Cummings, 1985; Jefferson, Doiron, Nicki & MacLean, 2004; Rogers, 1998; Tune, 1964). Such erroneous perceptions therefore convince people that they should continue gambling in the face of substantial losses.

1.8.3 Flexible Attributions

Gamblers tend to attribute success to stable factors such as one's personal ability or skill, whereas losses are attributed to external factors such as luck or chance (Griffiths, 1995; Oldman, 1974). Gilovich (1983) conducted a series of studies to test the validity of this bias empirically using participants gambling on sporting events. The findings showed that wins and losses were treated as being qualitatively different. Sports punters treated wins as confirmations of their skill, whereas losses were discounted and even misconstrued as near-wins. Similarly, unsuccessful outcomes were seen to be influenced by random, uncontrollable events, such as fluky plays or inconsistent umpiring decisions, but these same factors were considered to play no role when the outcome was successful. By using flexible attributions in this way, people were able to maintain their belief that future wins could be generated by the application of playing skill, which is clearly not the case in many forms of gambling. Indeed, in a follow up study, Gilovich and Douglas

(1986) showed that these biases could emerge even in ostensibly chance-determined games such as bingo.

1.8.4 Belief in Luck

This bias was suggested to stem from two main causes; the treatment of luck as an innate trait (Toneatto et al., 1997), or a form of what Rothbaum, Weisz and Snyder (1982) termed *secondary control.* Toneatto et al. (1997) proposed that luck could be regarded as an innate trait that was capable of influencing gambling outcomes. For this reason, gamblers who perceive themselves as possessing luck may find it difficult to stop, as success is attributed to a stable factor. Conversely, a person may continue to gamble despite excessive losses, because a losing run is likely to be perceived as temporary. Rothbaum et al. (1982) suggested that luck could also be viewed as a form of secondary control. Luck was therefore described as something that could vary depending on the extent to which people were successful in aligning themselves with other forces or were successful in the performance of certain rituals such as prayer, using lucky charms or other superstitious practices. Accordingly, Rothbaum et al. (1982) suggested people may be motivated to gamble and may even overestimate their chances of success when they are feeling particularly "lucky" or experiencing good fortune in other aspects of their life.

1.8.5 Just world views

The "just world" hypothesis reflects the belief that the world works in fair ways and that actions and outcomes have the same valence (Langer, 1975). Accordingly, people are assumed to get what they deserve and good outcomes are expected for people who do good things. Lerner and Simmons (1966) conducted an experiment where subjects witnessed a confederate seemingly receiving shocks for making minor errors in the designated task. When subjects were unable to alter the victim's fate, they devalued the victim to make the punishment seem deserved. Just world beliefs serve an important purpose in that they remove the need for chance and offer a sense of predictability (Langer, 1975). Furthermore, if events are predictable, they can be

anticipated and to an extent, controlled. Consequently, a string of losses does not always act as a disincentive for gambling. People think they will eventually be rewarded for their efforts and may even be motivated to return on subsequent occasions by a belief that they deserve to "get even."

1.8.6 Illusion of control

Perhaps the most widely researched bias thought to influence gambling behaviour is the illusion of control (Babad & Katz, 1991; Browne, 1989; Coreless & Dickerson, 1989; Langer, 1975; Zenker & Wolfgang, 1982). Langer (1975) defined this phenomenon as an expectancy of personal success that was inappropriately high, given the objective probability of the situation. While the outcome of an activity involving skill is dependent on the preceding action, many gambling situations are chance-determined and accordingly, success cannot be influenced by skill or strategies. Although games of skill and games of chance appear distinctly different in principle, researchers identified that many people act as if they have the ability to control random outcomes (Chapman & Chapman, 1967; Henslin, 1967; Langer, 1975; Reid, 1986; Strickland, Lewicki & Katz, 1966; Ward & Jenkins, 1965). Factors which were found to contribute to this effect included how involved the player was in the task, familiarity, and the availability of choice and competition. For example, Langer (1975) demonstrated how the introduction of personal involvement into a chance-determined gambling task influenced susceptibility to illusions of control. Subjects tended to place greater value on outcomes, placed larger bets, and were more confident of their ability to win when simple tasks such as throwing dice, betting on coins or wagering on the spin of a wheel contained some element of choice, involvement or opportunity to practise.

1.8.7 Limitations in Cognitive Research

Although the identification of cognitive biases has made valuable contributions to the understanding of gambling behaviour, a number of methodological problems identified in cognitive research have limited the scope of this understanding and the potential to implement effective treatment and prevention programs (Delfabbro, 2004).

For example, research into cognitive biases has rarely featured a systematic evaluation of the most relevant biases (Ladouceur, 2004b; Raylu & Oei, 2004; Toneatto et al., 1997). Instead, most research (including that of Tversky and Kahneman) have adopted superficial approaches that generally did not focus on the prevalence of particular types of biases, or examine what factors might influence the emergence of biases. Another conceptual issue concerns the assumption that irrational thinking is related to a poor understanding of mathematics and statistics, and that one could therefore reduce problem gambling by providing people with information about the true odds of gambling (DiClemente, Story & Murray, 2000; Evans, 2003; Gaboury & Ladouceur, 1993; Herman, Gupta & Derevensky, 1998; Shaffer et al., 1995). Despite the sensible logic underlying this argument, recent research has suggested that possessing relevant knowledge does not necessarily make one less susceptible to cognitive biases. For example, Benhsain and Ladouceur (2004) administered a gambling-related cognition scale to a sample of university students with training in statistics and a second group of university students trained in a non-statistical field. The results showed no difference in their susceptibility to irrational gambling-related cognitions. Similarly, in a study of adolescent gambling in the ACT, Delfabbro, Lahn and Grabosky (2007) found that, whereas young problem gamblers were more irrational on questions targeting representativeness biases and perceived control, they were just as accurate when estimating the odds of winning, and the objective odds governing certain gambling events. Moreover, similar findings have been produced in the few experimental studies that have explored the influence of mathematical ability on gambling behaviour. Lopes and Oden (1987) and Treisman and Faulkner (1987) investigated how statistical knowledge influenced people's ability to generate or identify random sequences. The results suggested that having a higher level of knowledge did not reduce susceptibility to making errors in these tasks. The findings were, however, based on psychology students so there is a need to explore the issue directly using a representative sample of gamblers to enhance the ecological validity of the findings.

Although each of these studies could be criticized on a number of methodological grounds (most notably that none included any adult problem gamblers), they all nonetheless converged on the same conclusion. It appears that the validity of the assumption underlying a number of gambling interventions and education programs may be questionable. In other words, while there is no question that people misinterpret many gambling-related statistical concepts, it is yet to be shown that problem gamblers have poorer mathematical ability, or that providing people with objective information about odds will protect them from problem gambling (Benhsain & Ladouceur, 2004; Delfabbro, 2004).

1.8.8 Explaining Irrationality

The notion that problem gamblers may possess a reasonably good knowledge of mathematics and statistics, but be unable to apply this information when they gamble, is a paradox that has implications for gambling treatment and for the validity of the heuristics and biases approach set in train by Tversky and Kahneman in the early 1970s. There is no question that people develop these biases and that one can describe them and identify them when they occur, but there is a need to investigate the situations that increase the probability of their occurrence. Sevigny and Ladouceur (2004), in explaining these results, proposed a *cognitive switching* theory that suggested people can simultaneously hold both objective knowledge ("cold" knowledge) and personally relevant cognitions ("hot" cognitions). The latter comes into play when people gamble, whereas the former is used in other contexts. Sevigny and Ladouceur (2004) offered a speculative neurophysiological explanation for this phenomenon, suggesting that an involvement in gambling leads to a switch to left hemisphere functioning and that, in this more analytical frame of mind, people are more likely to forge links between non-contingent events. Unfortunately, there is little evidence to support this view, and it is not entirely clear whether all biases necessarily arise from false views about non-contingency.

A possibly superior explanation more strongly grounded in psychological theory arises from the work of Thompson, Thomas and Armstrong (1998). Thompson et al. (1998) identified a number of situations or psychological states that appeared to enhance people's susceptibility to certain types of bias, in particular, the illusion of control. Thompson et al. (1998) argued that it was not uncommon to find that people could be very accurate at detecting objective contingencies, but less accurate in tasks where they had a vested stake in the outcomes. In other words, people were much more likely to fall victim to the illusion of control when the task involved outcomes that were personally relevant, and/or where there was a high desire for the outcome.

It is highly likely that a similar logic would apply in real world gambling contexts. Problem gamblers often express a greater need to win back past losses, and indicate that much larger wins are required in order for them to maintain interest in the activity (Ladouceur et al., 1988). However, no research has been undertaken to determine whether variations in the perceived need for the outcome influence objective gambling behaviour.

1.9 Mixed Models

In addition to the central theoretical models discussed, researchers have begun to explore the possibility of drawing on mixed modes to explain why some people gamble excessively. This is largely in response to dissatisfaction with the scope of explanation provided by single theories and the recognition that problem gambling is a complex and multidimensional issue. A promising example of this kind is Blaszczynski and Nower's (2002) pathways model of problem and pathological gambling. The model calls for an integration of biological, personality, developmental, cognitive, behavioural and ecological determinants of problem gambling and proposes that there are three major pathways that lead to the development of three distinct subgroups of problem gambling. Blaszczynski and Nower (2002) proposed that although problem gamblers present with similar phenomenological features in the acute stages, the etiology and progression toward acutely problem gambling are significantly different across the three main

subgroups (behaviorally conditioned; emotionally vulnerable; and anti-social impulsivist).

This theory has provided a framework to facilitate early identification of adolescent problem gamblers by educators in schools, an important secondary prevention initiative. Nower and Blaszczynski (2004) reported that problem gambling in youth remains to a large extent undetected until the critical stages where the behaviour or disturbed mood state becomes so problematic that it draws the attention of school officials or parents. Accordingly, they drew upon the Pathways Model of pathological gambling (Blaszczynski, 1998; Blaszczynski & Nower, 2002) to assist educators in identifying the signs of a student who is at risk and to facilitate the provision of appropriate early intervention programs.

According to the theory, *behaviorally conditioned* problem gamblers are those who do not have pre-morbid psychological or social pathology. For youth in this pathway, gambling often becomes a habit that initially arose out of a desire to socialize or gain income, as opposed to being a product of impaired control. Continued play over time results in behavioural conditioning that is reinforced by irrational cognitions. Youth in this pathway demonstrate average or above average levels of functioning prior to pathology, and as a result often evade detection until the acute stages where they start to fail courses, skip school, borrow money, steal and display other negative behaviours indicative of problem gambling. Other late stage indicators include gambling on school premises and being preoccupied with gambling. For this subgroup, Nower and Blaszczynski (2004) advocated school based education programs such as Drawing the Line (Nova Scotia, 1997); Your Best Bet- When Young People Gamble (Alberta Alcohol and Drug Abuse Commission, 2001), Gambling: Minimizing Health Risks (Queensland, 2000) or Count Me Out (Le Groupe Jaunesse, 2000) which focus on challenging illogical cognitions, increasing understanding of the true odds of gambling and raising knowledge of reinforcement schedules and their impact on behaviour. They also argued that harm minimization strategies for youth in this pathway are generally effective, given early identification.

In contrast to *behaviorally-conditioned* youth gamblers, *emotionally-vulnerable* gamblers are considered to be psychologically vulnerable and commonly gamble as they are anxious, depressed, escaping a neglectful or abusive home environment, or because they have poor perceptions of self-efficacy and low self-esteem. Youth who follow this pathway are also easier to identify in the early stages. They commonly display signs of depression or anxiety, report having poor social support, perform poor or average academically and their parents are typically unable or unwilling to work with school staff to address problems. Nower and Blaszczynski (2004) suggested that this group is best served by school-based education programs that involve targeting irrational cognitions, providing information about gambling addiction and developing adaptive coping strategies, in conjunction with formal counselling. Accordingly, teachers and school counsellors have a vital role in recognizing early signs and providing referral information.

Youth in the final pathway representing *anti-social impulsivist* gamblers share many commonalities with Pathway 2 youth; however, they also showed signs of serious psychopathology that appeared to extend from early childhood. Nower and Blaszczynski (2004) suggested that this subgroup is the easiest to identify in the school environment as they are commonly disruptive or absent. They engage in antisocial behaviours and typically prefer active or competitive sports that provide stimulation and an outlet for their aggression. They often skip school and become engrossed in video games. They may act aggressively when emotionally distressed and have trouble sustaining healthy relationships with peers and authority figures. Furthermore, such youth typically indicate having deviant friends, limited parental supervision and alcohol or drug related problems. Because of these reasons mentioned, Pathway 3 youth are difficult to address with harm minimization strategies. However, given that these youth are influenced by their peers, there may be some benefit to schools offering peer support programs. This model offers a useful framework to assist educators in identifying the various early indicators of problem gambling and the most effective ways of minimizing harm in these individuals. However, caution must be observed as the presence of the various indicators discussed

does not infer gambling pathology; the approach is intended to be a guide for increasing awareness.

1.10 Previous Adolescent Research in South Australia

Taken as a whole, these findings taken as a whole indicate that problem gambling in adolescence is a significant public health issue that can have consequences for their social, psychological and educational functioning, in addition to their longer-term wellbeing. A recent study conducted by the Department of Families and Community (2005) found that 43% of young people had gambled in the past 12 months and that 6.3% of the students sampled gambled on a weekly basis. However, the findings of this study were based on the results of a telephone survey which may not include some of the more severe cases of problem gambling because of sampling bias. A comparable study involving a school-based survey by Delfabbro and Thrupp (2001) in South Australia revealed that approximately 60% of individuals aged 15-17 years had engaged in gambling in the past 12 months, with 15% reporting having engaged in various gambling activities (such as scratch tickets, lotteries, sports-betting and card games) on a weekly basis. The study also found that involvement in gambling was associated with factors such as having friends or family members with an interest in gambling and an overly optimistic attitude towards gambling or the chances of winning. In addition, those who gambled on a regular basis were more likely to have a family member with a gambling problem, have experienced an early win, and to be strongly motivated to continue gambling as an adult.

1.11 Project Aims

The absence of any school-based research since 2001 means that the effect of recent changes in the gambling industry, such as the increasing popularity of TV poker shows, on the gambling behaviour of adolescents remains unclear. Furthermore, there have been a number of changes in gambling regulation and policy within South Australia that may have had an influence on adolescent gambling. These factors include the provision of a responsible gambling program (Dicey Dealings) in a number of South Australian schools, and well as the introduction of mandatory codes to practice to adult

venues. Accordingly, one of the principal aims of this study was to provide more current updated figures concerning the prevalence of gambling among adolescents in South Australia and whether this has changed since the previous school survey in 2001, and how 2007 figures compare with the 2005 telephone survey, ie., a sample obtained from the community using a different methodology.

The present study extended Delfabbro and Thrupp's (2001) earlier study by considering a wider range of issues not addressed in the previous study. Using a combination of quantitative survey methods and qualitative interviews with young people, the aim was to obtain more detailed understanding of:

- Young people's knowledge and appreciation of gambling odds, notions of probability and randomness, skill in gambling
- The links between gambling involvement and various forms of video game play, with a focus on arcade games that may share some of the features of commercially available forms of gambling
- Young people's interest in card games and TV gambling shows
- The accessibility of gambling to young people (how under-aged gambling occurs)
- Gambling and non gambling messages to which young people are likely to be most responsive
- How young people's beliefs about luck are related to their understanding of the likelihood of winning and randomness.

Chapter 2: Methodology

2.1 Chapter Overview

This chapter describes the quantitative and qualitative methodology used to investigate the understanding of and involvement in gambling among young people in grades 8-13 at both metropolitan and regional South Australian secondary schools.

2.2 Participants

2.2.1 Survey

The total sample comprised 2669 students including 50.5% males (n = 1348), 49.2% females (n = 1314) and 7 students whose gender was not identified on the survey (0.3%). Participating students were drawn from grades 8-13 across 6 schools in South Australia. These schools included Banksia Park International High School, Brighton Secondary School, Heathfield High School, John Pirie Secondary School, Naracoorte High School, and Kaurna Plains. Each of the schools are co-ed Government high schools.

The respondents ranged in age from 12 to 17 with a mean age of 14.63 years (SD = 1.42). These respondents were categorized into three groups to facilitate analysis, namely, years 8-9 (n = 714, 26.8%), years 10-11 (n = 1139, 42.7%), and years 12-13 (n = 816, 30.6%). Eighty (3%) respondents identified themselves as being of Aboriginal or Torres Strait Islander descent and 297 (11.1%) reported that a language other than English was spoken at home. The majority of respondents (n = 2326, 87.1%) indicated that they intended to finish school at the end of year 12 or 13 and approximately one third of the students indicated that their mothers had studied at university level (34.2%). A slightly smaller proportion reported that their fathers had studied at university (29.4%). Most of the students surveyed indicated that they usually lived with two adults (60.5%) and a similar proportion reported that they usually lived with both their mother and father (66.7%). T-test comparisons revealed no difference between the ages of males and females in the sample, $t(2710) < 1$.

2.2.2 Focus groups

For each school, two focus groups were conducted; one with individuals in years 8-9 and one with individuals in years 11-12. This resulted in a total of ten focus groups, comprising a total of 65 participants. Of these participants, 38.5% were male and 61.5% were female.

2.3 Measures

2.3.1 Gambling Habits

Participants were asked to indicate how often they had gambled on the major forms of gambling available in SA in the past 12 months. These included card games (e.g., poker, blackjack for money), poker-machines, racing (horses, dogs), sports (not including dog or horse-races), lotteries (X-lotto, Powerball or SoccerPools), keno, scratch tickets, bingo, and Internet gambling. Responses were scored on a 5-point scale where 1 = 'never', 2 = '1-2 times per year', 3 = '3 times per year up to once per month', 4 = '2-3 times per month', and 5 = 'weekly or more often'.

2.3.2 Gambling Expenditure

Participants were also asked to indicate whether they usually gambled on each of the major forms of gambling using their own money, and if so, how much they usually spent (in dollars).

2.3.3 Gambling Context

Participants were asked to indicate how they had gambled on various forms of gambling including Casino gambling before 18, TAB racing before 18, lotteries or keno before 16 and poker-machine gambling at a hotel or club. The categories available included: "By yourself (no one noticed you go in)", "By yourself using an ID card", "With the help of other adults", "With other friends", and "Other (specify)". Respondents were also asked to specify how old they were when they first gambled on any of the activities described.

2.3.4 Knowledge of Someone with a Gambling Problem

Respondents were asked to indicate whether there was anyone close to them whom they thought might have a gambling problem, and if so, to indicate the nature of the relationship to the respondent.

2.3.5 Early Big Wins

Respondents were asked to indicate whether they had a big win when they first tried gambling (yes or no).

2.3.6 Peer and family Approval of Gambling

Participants were asked to describe the gambling attitudes and behaviours of their friends and family on a 5-point scale (1 = strongly agree, 5 = strongly disagree). The questions included: 'Most of my friends gamble', 'Most of my friends approve of gambling', 'Most people in my family gamble', 'My family approves of gambling', 'I can't wait to turn 18 so I can go to adult gambling venues', 'When I turn 18, I will gamble a lot more than I do now', and 'In the future, I will definitely like to gamble regularly'. The items were adapted from scales developed by Moore and Ohtsuka (1997) and previously used by Delfabbro and Thrupp (2003) and Delfabbro, Lahn and Grabosky (2005).

2.3.7 Future Intention to Gamble

Three questions were included to assess respondents' future intention to gamble when they were 18. The questions were assessed on a scale of 1-5 where 1= strongly agree and 5 = strongly disagree (lower scores reflect higher agreement) and included, "I can't wait to turn 18 so I can go to adult gambling venues", "When I turn 18, I will gamble a lot more than I do now", and "In the future, I will definitely like to gamble regularly".

2.3.8 Attitudes Towards Gambling

A 9-item measure of young people's economic perception of gambling (Delfabbro & Thrupp, 2003) was also administered to participants. The items included: 'Gambling is a risky activity', 'You can lose all your money gambling', 'Gambling is a waste of money', 'Gamblers usually lose in the long-run', 'To gamble is to throw away money', 'You can make a living from gambling', 'Gambling is a good way to get rich quickly', 'Gambling is a better way to make money than working', and 'Gambling can give high returns'. Respondents were asked to rate their agreement with each statement on a 5-point

scale where 1 = Strongly agree and 5 = Strongly disagree. Items 6-9 were reversed so that higher scores represented a more cautious attitude towards gambling. The scale had good internal reliability in the current sample, $\alpha = .82$.

2.3.9 Perceptions of Skill

Participants were asked to rate how much skill was involved in common forms of gambling, including: poker, blackjack, poker-machines, racing (horses, dogs), sports (not including dog or horse-races), lottery games (e.g., Keno, X-lotto, Powerball, Soccer Pools) and Roulette. Ratings were made on a scale of 0 to 10, where 0 = "No skill at all", 5 = "Equal skill and chance" and 10 = "All skill".

2.3.10 Understanding of Odds and Probabilistic Concepts

Seven questions were included to assess participants' understanding of the odds of common gambling activities. The first question asked participants which set of odds was closest to those associated with winning X-Lotto. This was specified as having six correct numbers. Five options were provided ranging from 1 in 900 to 1 in 20 million, with the closest answer being 1 in 8 million. The second and third questions asked participants to indicate whether any numbers on a 6-sided die were harder or easier to roll than others and, if so, which ones. The fourth question asked the chances of getting two tails when two fair coins were tossed. The options ranged from 20% to 50%, however, the correct response was 25%. A fifth question informed participants that a coin had been tossed 12 times in a row and asked which of the listed outcomes were most likely. The first option included 10 alternations, the second included 2 alternations and the third included 5 alternations. Option four was that "none of them are likely if the coin is fair" and option five was that "all of them are equally likely if the coin is fair". The sixth question provided information regarding Roulette and asked subjects the odds of red spinning up on two consecutive rounds. The options included 4/16, 9/18, 1/37, 1/18 and 2/18, with the closest answer being 4/16. The seventh question relates to the probability of winning on poker-machine gambling. A table was provided showing the amount of money two different gamblers won across 18 games and asks who is most likely to win

next, or alternatively, whether both gamblers had the same chance of winning the next game.

2.3.11 DSM-IV-J

The DSM-IV-J (Fisher, 1992), the adolescent version of the DSM-IV was used to distinguish between problem and non-problem gamblers. The DSM-IV-J is a 12-item scale that includes gambling behaviours such as a preoccupation with gambling, being restless or irritable when not able to gamble, chasing losses, spending lunch money on gambling, stealing to fund gambling and the presence of social conflict. The items are scored using a yes/no format with a total score of four or more indicative of problem gambling. The internal reliability in the present sample was found to be high, $\alpha = .82$.

2.3.12 Attitudes Towards TV-poker Games

Respondents were asked to indicate whether they had watched TV-poker games and whether they found them to be enjoyable. Respondents were also asked what influence such programs had on their behaviour, specifically whether watching such programs encouraged them to play card games for money, and whether they played poker or other card games for money like on TV. Those who indicated that they did play card games for money were also asked to describe the context in which they played. This included indicating how many friends typically played at one time, the most money anyone had won on one day and taken home, the most anyone had lost, the maximum limit set on the amount players could bet and a one word description of why they played.

2.3.13 Video/computer/arcade Game Behaviour

Respondents were asked to indicate how often they played various non-gambling games including TV games (X-box, Game Cube, Play-station, and others), Phone games, Hand-held games (e.g., Gameboy), PC games, and Arcade games (e.g., at Greater Union etc). Categories included “never”, “once per week”, “2-6 times per week” or “daily”. Respondents were also asked to indicate how many hours they usually played each type of game. In addition, respondents who indicated playing any type of game daily were asked to report how many hours they would typically play daily.

2.3.14 Irrational Beliefs Towards Gambling

Respondents were asked to rate their agreement with ten statements assessing the presence of common cognitive biases in gambling. These included the availability heuristic (three items: "Good and bad events tend to occur in cycles", "I can usually tell what sort of day I'm going to have based upon the first few events after I get up", and "I believe in "bad vibes" or "bad days" that can indicate everything is not going to go well"), representativeness (three items: "If a team hasn't won for some time, I always think that they are more likely to win because they are due for it", "It's always good to persist, because things are bound to go your way eventually", "If a mother has three girls, it is highly likely that her fourth child will be a boy"), and the illusion of control (four items: "In everyday life, I often think that the presence of certain people or objects can influence how fortunate I am, or how well things turn out (even if these people or objects don't do anything directly)", "If you think positively and concentrate hard enough, then things will just turn out better", "I often feel compelled to abide by rituals and superstitions (e.g., not walking under a ladder, breaking a mirror or stepping on cracks)", "I often think that there are warning signs or other events that indicate good or bad things are about to happen"). These biases were assessed in non-gambling contexts to ensure the questions were relevant to both regular and non-regular gamblers. Each statement was rated on an 11-point Likert scale ranging from 0 = *strongly disagree* to 10 = *strongly agree*. High internal consistency was evident in the present sample, with the Cronbach alpha coefficient found to be 0.84.

2.4 Procedure

Approval to proceed with the survey was received from the Department of Education and Children's Services and the School of Psychology's Human Research Subcommittee. After approval to conduct the study had been obtained from the relevant authorities, approval was sought from the individual school principals. Meetings were next arranged with the teaching staff of each school to provide instruction and training in how to administer the survey tool. This opportunity was also used to provide staff with background information on the project and to answer any questions relating to the project. The teachers were also provided copies of the surveys, information sheets, consent forms and an instruction sheet detailing point by point how to administer the survey.

The information sheets were sent home to the parents by the teachers. The parents were able to withdraw their child from the study if they did not want them to take part (an opt-out strategy that is permitted under DECS guidelines). The teachers then specifically set aside class time to administer the survey (approximately 45 minutes) at a time deemed suitable by the school principal. Once the survey was completed, the students were instructed to place their survey into a sealed envelope and return it to their teacher. Of the 2793 surveys returned, 51 (1.8%) had to be discarded because of aberrant responding.

Students who indicated that they would like to be involved in the focus groups were asked to inform their teacher and return a signed consent form (attached to the parent information sheet). Two focus groups were run per school (one group of year 8-9 students and one group of year 11-12 students). These sessions lasted approximately 45 minutes and were run in the pastoral care period by a researcher and a DECS project officer. The sessions involved open-ended discussions of young people's knowledge of gambling and perceptions of how the industry and advertising works, the nature of appropriate support services, how gambling differs or is similar to other high-risk behaviours and how beliefs about being lucky may influence learning about randomness (questions displayed in Table 6.1). The contents of the session were taped using a small, discrete tape recorder.

Table 2.1 Focus group questions

1. Can you tell me what you understand about gambling? What is gambling? What sort of things do you consider to be types of gambling?
2. When someone says gambling is risky, what does that mean?
3. What do you understand by the terms 'luck' and 'chance'? In what ways is gambling similar to, or different from, other games that you might play? [Prompt with examples: e.g., why is playing roulette or the pokies different from playing darts? What about video games and the pokies?]
4. Some people who gamble say: "Everything's a risk. Some people lose all their money when they start a business which doesn't work out". So, is running a business just like gambling? Do you think this is correct? Why or why not?
5. Is there any skill involved in gambling? In other words, can you become good at it?
6. Have you, or any of your friends, tried gambling? What sort? Can you describe some of your experiences? How did you learn how to gamble (i.e., taught self, friends, family)?
7. Do you know any young people who have played the pokies or got into the Casino when they were not yet 18? How did they do it? Do you think the enforcement of age restrictions are strict enough?
8. Why do you think young people gamble?
9. How do some people develop problems with gambling? Do you know anyone who has had a gambling problem? What differentiates a social gambler from someone with a gambling problem? What makes a social gambler progress to developing a gambling problem?
10. Would you seek help for a gambling problem? Would you know where to seek help? What would you do if your friend had a gambling problem?
11. Do you watch any TV shows that involve gambling? Which ones? How do they make you feel about gambling? Have they encouraged you to gamble?
12. Have you ever tried gambling on the Internet? Can you describe what happened?
13. Are you aware of any responsible gambling messages? Do you think they work? What kind of message do you think would be more effective? What types of information would you like to be presented with?

Chapter 3: Study Findings I: Gambling Behaviour

3.0 Chapter Overview

This section outlines our findings relating to the prevalence of gambling and problem gambling amongst SA adolescents. In this chapter can be found details of the number of young people who are gambling in South Australia, the types of gambling preferred, and the proportion of young people experiencing problems with their gambling. Also included in this chapter is a detailed analysis of individual differences such as, for example, how adolescent gambling patterns vary according to a young person's age and gender. A further series of analyses examines young people and their families' attitudes towards gambling, their understanding of gambling odds and other mathematical concepts associated with gambling. A final section then examines young people's receptivity to gambling-related advertising and TV-shows that feature gambling, and their inter knowledge of the help services available to assist young people with gambling.

3.1 The prevalence and social context of adolescent gambling

3.1.1 Gambling Prevalence

The survey results indicated that a large proportion of the respondents (56.3%) had gambled in the last 12 months, although it was also found that this overall participation rate varied as a function of age and gender. Boys (61.0%) were more likely to have gambled in the past year than females (51.7%), $\chi^2(1) = 23.43$, $p < .001$. Year 12 and 13 students (62.7%) were slightly more likely to have gambled in the past year than the year 8 and 9 students (54.7%), $\chi^2(2) = 7.60$, $p < .05$. However, there was no significant association between ethnicity (Aboriginality or Torres Strait Islander (ATSI) or non-ATSI descent) or region (regional vs metropolitan schools) and overall gambling participation ($p > .05$).

Although over half the sample indicated that they had gambled in the past year, many of these adolescents did not gamble regularly. Of those who had gambled in the

past 12 months, only 11.2% indicated gambling at least once a week (6.3% of the total sample). Table 3.1 shows the frequency with which respondents engaged in each form of gambling. As can be seen, respondents were most likely to gamble regularly on card games, sports gambling and instant scratch tickets and were least likely to gamble regularly on Electronic Gaming Machines and Keno.

Males (9.3%) were also found to be more likely to have gambled on a weekly basis than were females (3.2%), $\chi^2(1) = 42.58$, $p < .001$. Further analysis revealed that individuals who identified themselves as being of ATSI descent were significantly more likely to have gambled on a weekly basis (15% compared to 6.1% of all other students), $\chi^2(1) = 10.16$, $p < .001$. Again, there was no association between gambling on a weekly basis and grade level.

Table 3.1 Number (%) of adolescents gambling on each activity at each frequency

	Never	Less than monthly	2-3 times per month	Weekly or more often
	n (%)	*n* (%)	*n* (%)	*n* (%)
Card Games	1892 (70.9)	551 (20.6)	102 (3.8)	60 (2.2)
EGM	2468 (92.5)	96 (3.6)	13 (0.5)	11 (0.4)
Racing	2090 (78.3)	462 (17.3)	23 (0.9)	17 (0.6)
Sports	2185 (81.9)	323 (12.1)	30 (1.1)	46 (1.7)
X-lotto	2355 (88.2)	187 (7.0)	21 (0.8)	22 (0.8)
Keno	2336 (87.5)	225 (8.4)	19 (0.7)	12 (0.4)
Scratch Tickets	1547 (58.0)	906 (34.0)	107 (4.0)	43 (1.6)
Bingo	2222 (83.3)	318 (11.9)	28 (1.0)	20 (0.7)
Internet Gambling	2484 (93.1)	67 (2.5)	16 (0.6)	23 (0.9)

3.1.2 Specific Gambling Activities

Table 3.2 shows the proportion of respondents who engaged in each form of gambling in the past 12 months. Scratch tickets was the most popular form of gambling amongst the adolescents surveyed, with 39.6% of respondents indicating that they have engaged in this form of gambling in the 12 months prior to completing the survey. Private card games closely followed in terms of popularity (26.7%). Betting on racing, sporting

events and bingo were also popular among the respondents (18.8%, 14.9% and 13.7% respectively). Keno, X-lotto and Internet gambling attracted the least participants (9.6%, 8.6% and 4.0%, respectively).

In order to compare the participation rates on specific gambling activities by gender and grade-level, the original frequency categories were converted into metric estimates (the total number of times per year) in order to allow t-test and ANOVA comparisons. The variables were recoded according to assigned estimates or category midpoints (e.g., never = 0, 1-2 times per year = 1.5, 3 times per year up to once per month = 7.5, 2-3 times per month = 2.5 x 12 = 30, weekly = 52). The resultant analysis revealed that boys gambled significantly more frequently on cards, racing, sports, lotto, keno, scratch tickets, and Internet gambling than did females. No significant gender difference was identified for poker-machine gambling or bingo (all comparisons $p < .05$). In addition, respondents who identified themselves as being of ATSI descent indicated gambling significantly more frequently on poker-machine gambling, racing, sports, instant scratch tickets and bingo (all comparisons $p < .05$). Further analysis revealed that students from regional schools gambled more frequently than students from metropolitan schools on instant scratch tickets and bingo (all comparisons $p < .05$).

One-way ANOVA was used to compare participation rates across grade-levels (8-9, 10-11, 12-13). A significant difference was identified for card game gambling, $F(2, 2587) = 3.52$, partial $\eta^2 = .003$, $p < .05$, where year 10-11 respondents were significantly more likely to have engaged in this form of gambling than year 8-9 respondents. The year 10-11 respondents were also more likely to have played card games than the year 12-13 students however this difference was not statistically significant. This same pattern was also identified for EGM gambling, $F(2, 2570) = 6.84$), partial $\eta^2 = .005$, $p < .001$ and for racing gambling, $F(2, 2575)= 3.92$, partial $\eta^2 = .003$, $p < .05$. A significant difference was also identified for Keno gambling where year 12-13 students were significantly more likely to have participated in Keno than year 8-9 students $F(2, 2574) = 4.16$, partial $\eta^2 = .003$, $p < .05$. This same pattern was also identified for scratch ticket gambling, $F(2, 2585) = 3.19$, partial $\eta^2 = .002$, $p < .05$, however, this difference was only slightly

significant. The year 12-13 students were also significantly more likely than the year 8-9 and year 10-11 students to have participated in bingo in the past 12 months, $F(2, 2570) = 4.87$, partial $\eta^2 = .004$, $p < .01$. The partial η^2 statistic indicates that although these grade level differences were statistically significant, the magnitude of these differences were only small.

Table 3.2 Number (%) of adolescents who gambled at least once on each form of gambling

	N	%
Card Games	713	26.7
EGM	120	4.5
Racing	502	18.8
Sports	399	14.9
X-lotto	230	8.6
Keno	256	9.6
Scratch Tickets	1056	39.6
Bingo	366	13.7
Internet Gambling	106	4.0

3.1.3 Gambling with Own Money

Of the respondents who indicated having gambled in the past 12 months, 61.1% indicated gambling with their own money. This suggests that a significant proportion of gambling in adolescence is financially aided by others. Table 3.3 shows the average amount usually spent by respondents on each form of gambling. As can be seen, although few participants engaged in Internet gambling, the highest amount of money (on average) was spent on this form of gambling. Conversely, the least amount of money tended to be spent on scratch ticket gambling, which was identified as being the most popular form of gambling amongst the respondents surveyed. It is also evident that there is considerable variability in the amount being spent across the respondents.

Cross tabulation analysis revealed a significant association between gender and the extent to which young people gambled with their own money. Using the total sample as the denominator, it was found that boys (42.1%) were significantly more likely to have gambled with their own money than girls (26.6%), $\chi^2(1) = 70.12$, $p < .001$. A significant association was also found for grade level $\chi^2(2) = 64.00$, $p < .001$. The older group (years 12 and 13; 50.0%) were significantly more likely to have gambled with their own money than the younger group (years 8 and 9; 7.9%). No association was identified between gambling with their own money and being of ATSI descent.

T-test comparisons indicated that male participants spent significantly more money per session on average than female participants on racing ($11.57, compared to $6.96 for females) and scratch ticket gambling ($4.94 compared to $3.58 for females) ($p < .05$). In addition, ATSI participants spent significantly more money on average on poker-machines ($50.00, compared to $7.15), sports gambling ($32.18, compared to $9.35), bingo ($17.92, compared to $7.85) and Internet gambling ($55.00, compared to $13.47) than did other respondents (all comparisons $p < .05$). One way analyses of variance were used to explore differences in the amount spent on each activity by grade level. The results yielded only one significant difference for scratch ticket gambling, $F(2, 553) = 4.44$, $p < .05$, where the year 10 and 11 respondents spent significantly more money on average than the year 8 and 9 respondents. The year 10 and 11 group also spent more money on this form of gambling than did the year 12 and 13 respondents ($M =$ $5.01, compared to $4.01 for the older group), but this difference was not statistically significant.

Table 3.3 Average amount of money ($) spent on each form of gambling

	M	*SD*
Card Games	9.75	14.47
EGM	10.34	16.04
Racing	9.64	15.50
Sports	10.80	14.43
X-lotto	9.71	13.55
Keno	5.88	6.63
Scratch Tickets	4.31	4.86
Bingo	8.42	9.53
Internet Gambling	18.74	22.77

3.1.4 Social Context of Gambling

Participants were asked to indicate the circumstances in which they gambled on various forms of gambling including Casino gambling before 18, TAB racing before 18, lotteries or Keno before 16 and poker-machine gambling at a hotel or club. A summary of the results is presented in Table 3.4. As can be seen, the nature of involvement varies across the different forms of gambling. While adult help was the predominant way in which Casino, TAB and lottery gambling occurred, respondents predominantly played poker-machines (at a hotel or club) by their self and were able to do so unnoticed, without having to show ID. Furthermore, 15.4% of respondents under the age of 18 indicated gambling at a casino by showing ID (assumedly fake). In addition, a high proportion of respondents indicated that adults were helping them to gamble on lotteries or TAB.

Table 3.4 Ways underage gambling occurs

	By Self (unnoticed)	By Self (using ID)	Adult Help	Friends	Other
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Gambled at casino before 18	31 (34.1)	14 (15.4)	37 (40.7)	28 (30.8)	6 (6.6)
Gambled on TAB before 18	36 (12.5)	8 (2.8)	236 (82.2)	46 (16.0)	8 (2.8)
Played lotteries or keno before 18	70 (20.0)	11 (3.1)	252 (72.0)	70 (20.0)	10 (2.9)
Played poker machines at a hotel or club	54 (43.2)	11 (8.8)	45 (36.0)	44 (35.2)	8 (6.4)

3.1.5 Knowledge of Someone Gambling Problems

A total of 155 students, or 5.8% of those surveyed, indicated knowing someone with a gambling problem. Of these respondents 40% (n = 62) identified the person as being a first degree relative, 39.4% (n = 61) indicated that the person was a second degree relative and 11.6% (n = 18) described the person as being unrelated to them (i.e., friend, boyfriend, acquaintance etc).

3.1.6 Problem gambling: Prevalence

Most of the respondents surveyed experienced no problems with their gambling, as classified by the 4 point cut off of the DSM-IV-J. However, using this criteria, 63 or 2.4% or respondents could be classified as problem gamblers. In addition, 6.4% of the current sample endorsed 1-3 items on the DSM-IV-J ('at risk'). A total of 90.6% of respondents endorsed no items on the scale ('not at risk'). Table 3.5 shows the extent to which respondents endorsed each of the 12 items on the DSM-IV-J. As can be seen, respondents were most likely to acknowledge having a preoccupation with gambling (Q1) and chasing losses (Q3), but were least likely to endorse stealing to fund their gambling (Q8) or having to seek help for serious financial worry as a consequence of their gambling (Q10).

Table 3.5 Number (%) of adolescents who endorsed each item on the DSM-IV-J

Item	Yes *n* (%)	No *n* (%)
1. Do you often find yourself thinking about gambling activities at odd times of the day and/or planning the next time you will play	142 (5.3)	2509 (94.0)
2. Do you lie to your family or friends or hide how much you gamble	47 (1.8)	2604 (97.6)
3. After spending money on gambling activities do you play again another day to try and win your money back (more than half the time)	80 (3.0)	2571 (96.3)
4. In the past year, have you spent your school lunch money or money for bus fares on gambling activities?	59 (2.2)	2592 (97.1)
5. In the past year, have you taken money from someone you live with, without their knowing, to gamble?	40 (1.5)	2611 (97.8)
6. Do you ever gamble as a way of escaping problems?	29 (1.1)	2622 (98.2)
7. Do you find you need to spend more and more money on gambling activities?	46 (1.7)	2605 (97.6)
8. In the past year, have you stolen money from outside the family, or shoplifted, to gamble?	20 (0.7)	2631 (98.6)
9. Do you become restless, tense, fed up, or bad tempered when trying to cut down or stop gambling?	29 (1.1)	2620 (98.2)
10. In the past year, have you gone to someone for help with a serious money worry caused by participating in gambling?	19 (0.7)	2632 (98.6)
11. Have you fallen out with members of your family, or close friends, because of your gambling behaviour?	28 (1.0)	2622 (98.2)
12. In the past year, have you missed school to participate in gambling experiences? (5 times or more)	28 (1.0)	2623 (98.3)

NB. Figures do not add to 100% because a few participants did not complete these questions

3.1.7 Problem gambling: individual differences

Demographic analysis revealed a significant association with gender and problem gambler status, $\chi^2(2) = 52.12$, $p < .001$. Boys were significantly more likely than girls to be problem gamblers (3.5% vs 1.2%) and also 'at risk' gamblers (9.3% vs 3.6%). Conversely, girls were more likely than boys to be in the 'not at risk' group (95.2% vs 87.2%). A significant association was also found for indigenous status ($\chi^2(2) = 20.38$, $p < .001$) with four times as many indigenous students classified as problem gamblers (9% compared with only 2.2% of non-indigenous students). In addition, indigenous students

were twice as likely to be in the 'at risk' group (12.8% vs 6.4%). A significant association was also found for grade level, $\chi^2(4) = 16.62$, $p < .01$, however, no consistent upward trend was apparent. A total of 1.6% of problem gamblers were in year 8-9, 3.1% in year 10-11 and 2.7% in year 12-13. However an upward trend was observed for the 'at risk' group where 5.3% of the year 8-9 students, 6.4% of the year 10-11 students and 10.1% of the year 12-13 students were classified as being at risk for problem gambling. There was no association between school region (regional vs metropolitan) and problem gambling ($p < .05$).

Further analysis examined the relationship between problem gambling and involvement in specific activities (see Table 3.6). A significant association was identified between one's problem gambling status and each form of gambling (all associations $p < .001$). Problem gamblers were significantly more likely to be involved in each form of gambling than the rest of the sample. In addition, 'at risk' gamblers were significantly more likely to be involved in each activity than those who were identified as 'not at risk'.

Table 3.6 Number (%) of adolescents who had participated in each form of gambling

	Not at risk *n* (%)	At risk gamblers *N* (%)	Problem gamblers *n* (%)
Card Games	542 (22.4)	115 (67.3)	51 (81.0)
EGM	79 (3.3)	21 (12.3)	19 (30.2)
Racing	390 (16.1)	70 (40.9)	39 (61.9)
Sports	284 (11.8)	70 (40.9)	42 (66.7)
Crosslotto	159 (6.6)	38 (22.2)	30 (47.6)
Keno	192 (7.9)	37 (21.6)	25 (39.7)
Scratch Tickets	885 (36.6)	110 (64.3)	54 (85.7)
Bingo	295 (12.2)	42 (24.6)	27 (42.9)
Internet Gambling	69 (2.9)	25 (14.6)	12 (19.0)

No significant differences in gambling history were identified. Problem gamblers were not significantly more likely to have begun gambling at an earlier age than other

respondents. However a significant association was observed for early big wins, $\chi^2(2) = 135.07$, $p < .001$. Problem gamblers were significantly more likely than other respondents to indicate having a large win when they first started gambling (43.5%, compared to 38.2% of 'at risk' gamblers and 11.0% of 'not at risk' gamblers). Problem gamblers were also significantly more likely to indicate knowing someone with a gambling problem, $\chi^2(2) = 38.00$, $p < .001$ (21.3% compared to 12.7% of 'at risk' gamblers and 5.4% of 'not at risk' gamblers). A total of 63.3% of these respondents identified that the problem gambler they knew was a first degree relative. A further 9.1% indicated knowing a second degree relative with a gambling problem and 27.3% indicated that it was someone they were not related to (i.e., friend, acquaintance etc).

3.1.8 Peer and family approval of gambling and future intention to gamble

The respondents surveyed were asked to indicate whether their friends and family gambled and whether they approved of gambling on a scale of 1-5 where 1 = strongly agree and 5 = strongly disagree (lower scores reflect higher agreement). As can be seen in Table 3.7, problem gamblers endorsed each item significantly more strongly than the two other non-problem gambler groups (those with a score of 1-3 on the DSMIV-J and those with a score of 0). This suggests that their peers and family members were more likely to gamble and endorse gambling. The problem gambler group also endorsed the final three questions measuring future intention to gamble with higher ratings than the other two groups, suggesting that this group is not only currently gambling more than other respondents, but intends to maintain doing so in the future.

Table 3.7 Mean (*SD*) ratings of peer and family approval of gambling and future gambling intentions

	Not at Risk *n* = 2417	At Risk *n* = 171	Problem *n* = 63	*F*(2,2608)	Post hoc	η^2
Most of my friends gamble	4.25 (.88)	3.16 (1.05)	3.20 (1.31)	146.98***	1>2,3	.10
Most of my friends approve of gambling	3.62 (.99)	2.75 (1.04)	2.81 (1.23)	75.31***	1>2,3	.06
Most people in my family gamble	4.02 (1.03)	3.28 (1.17)	3.05 (1.11)	62.34***	1>2,3	.05
My family approves of gambling	3.83 (1.00)	3.15 (1.01)	2.95 (1.01)	55.23***	1>2,3	.04
I can't wait to turn 18 so I can go to adult gambling venues	4.16 (0.98)	3.08 (1.27)	2.93 (1.43)	127.48***	1>2,3	.09
When I turn 18, I will gamble a lot more than I do now	4.27 (0.94)	3.41 (1.34)	3.20 (1.32)	93.81***	1>2,3	.07
In the future, I will definitely like to gamble regularly	4.46 (0.77)	3.66 (1.15)	3.34 (1.36)	126.674	1>2,3; 2>3	.09

Note. All post hoc tests significant at .05 level, *** $p < .001$. 1 = not at risk; 2 = at risk; 3 = problem gamblers, η^2: .01-.06 = small effect size; .07-.13 = moderate effect size; .14+ = large effect size.

3.1.9 TV-poker programs

A total of 1914 students (71.7%) acknowledged that they had watched TV-poker games and1130 students (42.3%) reported finding these programs enjoyable. In addition, 10% of the total sample (*n* = 267) indicated that watching these programs encouraged them and their friends to play card games for money. A slightly larger proportion of the total sample (14.7%, *n* = 393) acknowledged playing poker or other card games for money like on TV. Those who acknowledged that they played card games for money like on TV were asked to describe the context with which this gambling took place. The findings indicated that the average number of friends that typically played at one time was 4.91 (*SD* = 1.84). When asked to indicate the most anyone had won on one day and taken home, the average amount identified by the respondents was $37.58 (*SD* = $46.04). The most anyone had lost was identified as being considerably smaller (*M* = $17.66, *SD*

= $27.96). The average limit set by these respondents on how much players could bet was identified as being $12.93 (*SD* = $12.47). However, 37.91% of respondents who acknowledged playing card games for money provided no response for this question, suggesting they did not set limits on the amount players could bet. In addition, when the respondents were asked to provide one word that described why they played, the most popular response was "fun" (62.1%). The next most popular response was 3.3% "boredom", closely followed by "social" (3.1%).

Additional analysis was undertaken to explore whether the responses for these questions differed as a function of one's gambler status, grade level, gender or nationality. This revealed that problem gamblers were significantly more likely than those 'at risk' and those 'not at risk' to report having watched TV-poker games ($\chi^2(2) = 28.93$, $p < .001$) (91.8%, 87.1% and 72.1%, respectively), having enjoyed watching the programs ($\chi^2(2) = 59.66$, $p < .001$) (72.9%, 69.0% and 43.3%, respectively), being encouraged by the programs to play card games for money ($\chi^2(2) = 235.94$, $p < .001$) (55.7%, 32.9% and 7.8%, respectively), and that they currently played poker or other card games for money like on TV ($\chi^2(2) = 313.87$, $p < .001$) (61.0%, 54.5% and 11.5%, respectively).

A number of age effects were also noted. Year 12-13 students (50.6%) were significantly more likely than year 8-9 students (43.1%) to report enjoy TV-poker programs, $\chi^2(2) = 6.84$, $p < .05$. Year 12-13 students (17.5%) were significantly more likely than year 10-11 (12.9%) and in turn year 8-9 students (6.7%) to report that watching TV-poker programs encouraged them to play card games for money, $\chi^2(2) = 40.87$, $p < .001$. This same pattern was observed when the students were asked whether they played poker or other card games for money like on TV, $\chi^2(2) = 32.15$, $p < .001$ (21.9%, 17.9% and 11.2%, respectively).

Males more likely than females to report having watched TV poker games ($\chi^2(1) = 170.75$, $p < .001$) (84.7% vs 62.1%), enjoying the programs ($\chi^2(1) = 300.17$, $p < .001$) (62.6% vs 27.8%), being encouraged to play card games for money by the programs

($\chi^2(1) = 90.43$, $p < .001$) (16.4% vs 4.6%), and to report that they played card games for money like on TV ($\chi^2(1) = 107.58$, $p < .001$) (22.9% vs 8.0%). Indigenous students were significantly more likely than non-indigenous students to report that watching these games encouraged them to play card games for money, $\chi^2(1) = 8.68$, $p < .01$ (21.4% vs 10.4%), and to report that they currently played card games for money like on TV, $\chi^2(1) = 5.23$, $p < .05$ (25.4% vs 15.3%).

Further analysis revealed that there was no significant difference between the number of friends typically playing at one time and one's gambler status, gender or nationality (all comparisons $p > .05$). However, a significant effect was found by grade level, $F(2, 316)= 6.35$, $p < .01$ where the year 12-13 students ($M = 5.56$, $SD = 1.74$) tended to play card games for money with a greater number of friends than did both year 10-11 students ($M = 4.85$, $SD = 1.66$) and also year 8-9 students ($M = 4.57$, $SD = 2.07$) (all comparisons $p < .01$).

In terms of the most anyone had won, a significant effect was found across the different gambler groups, $F(2, 296)= 15.30$, $p < .001$. Those who were 'not at risk' ($M =$ \$31.45, $SD =$ \$37.81) acknowledged maximum winnings that were significantly lower than that of those identified as problem gamblers ($M =$ \$80.61, $SD =$ \$46.11). In addition, the average maximum amount won by the 'at risk' group ($M =$ \$37.71, $SD =$ \$38.98) was significantly lower than that of the problem gambler group (all comparisons $p < .001$). A significant gender difference was also found, $t(298) = 2.85$, $p < .01$, where males acknowledged a higher maximum win ($M = 41.71$, $SD = 49.42$) than did females ($M =$ 24.02, $SD = 28.91$).

A similar pattern of results was found for the maximum amount lost, $F(2, 290)=$ 13.87, $p < .001$, where those 'not at risk' ($M =$ \$13.44, $SD =$ \$18.14) had a significantly lower maximum loss than did those identified as problem gamblers ($M =$ \$41.64, $SD =$ \$61.72), who in turn indicated losing significantly more than those 'at risk' ($M =$ \$20.02, $SD =$ \$24.83) (all comparisons $p < .001$). In addition, the maximum amount lost by indigenous students ($M =$ \$36.41, $SD =$ \$50.34) was significantly higher than the

maximum amount lost by non indigenous students (M = \$16.74, SD = 26.31), $t(288)$ = 2.33, $p < .05$.

A further significant effect was identified for the maximum limit set for bets across the different gambling levels, $F(2, 241)= 5.17$, $p < .01$. The difference was such that those 'not at risk' (M = \$9.88, SD = \$14.95) set significantly lower limits than those 'at risk' (M = \$17.35, SD = \$32.82) and also problem gamblers (M = \$23.11, SD = \$29.55) (all comparisons $p < .05$).

3.1.10 Video game play

Table 3.8 displays the frequency with which the students surveyed engaged in various forms of video game play. Reference to the columns detailing the number of hours usually played and the frequency with which the students played both indicate that respondents were most likely to play TV video games and PC games most regularly, whereas arcade games were played infrequently and for short periods.

Table 3.8 The frequency with which students played various video games by gambler status

	Hours played *M* (*SD*)	Never *n* (%)	Once per week *n* (%)	2-6 times per week *n* (%)	Daily *n* (%)
TV games (e.g., X-box, Game Cube, Play-station)	1.60 (1.56)	744 (27.9)	860 (32.2)	600 (22.5)	327 (12.3)
Phone games	0.38 (0.89)	1262 (47.3)	843 (31.6)	268 (10.0)	137 (5.1)
Hand-held games (e.g., Gameboy)	0.44 (1.03)	1838 (68.9)	401 (15.0)	154 (5.8)	97 (3.6)
PC games	1.34 (1.72)	1004 (37.6)	706 (26.5)	492 (18.4)	287 (10.8)
Arcade games	0.18 (0.69)	1957 (73.3)	312 (11.7)	61 (2.3)	25 (0.9)

Those who indicated playing daily reported usually playing for 2.55 hours on average (SD = 2.01). Cross tabulation analyses revealed that problem gamblers were significantly more likely to play TV games ($\chi^2(2) = 29.94$, $p < .001$), phone games ($\chi^2(2) = 42.79$, $p < .001$), hand-held games ($\chi^2(2) = 28.23$, $p < .001$) and arcade games ($\chi^2(2) =$

35.57, $p < .001$) daily than 'at risk' gamblers, who were in turn more likely to play these forms of game play daily than those 'not at risk'. In addition, 'at risk' gamblers (18.2%) were significantly more likely to play PC games daily than those 'not at risk' (11.0%) ($\chi^2(2) = 8.66$, $p < .05$, problem gamblers 15.8%).

In addition, the year 8-9 students were found to play TV games ($\chi^2(2) = 21.55$, $p < .001$), hand-held games ($\chi^2(2) = 8.60$, $p < .05$) and PC games ($\chi^2(2) = 10.16$, $p < .01$) than the year 10-11 and year 12-13 students.

Gender differences were evident for TV games ($\chi^2(1) = 145.40$, $p < .001$), hand-held games ($\chi^2(1) = 33.48$, $p < .001$) and PC games ($\chi^2(1) = 82.84$, $p < .001$) where males were significantly more likely than females to play these games daily. In addition, indigenous students were significantly more likely than non indigenous students to play TV games ($\chi^2(1) = 11.02$, $p < .01$), phone games ($\chi^2(1) = 21.45$, $p < .001$) and arcade games ($\chi^2(1) = 7.41$, $p < .01$) on a daily basis.

In order to compare the participation rates on the various video games by gambler status, gender and grade-level, the original frequency categories were converted into metric estimates (the total number of times per year) in order to allow t-test and ANOVA comparisons. The variables were recoded according to assigned estimates or category midpoints (e.g., never = 0, once per week-6 times per week = 3.5 x 52 = 182, daily = 364). As can be seen in Table 3.9, problem gamblers played hand-held games and arcade games with significantly greater frequency than 'at risk' gamblers, who in turned played at a higher frequency than those 'not at risk'. In addition, problem gamblers and 'at risk' gamblers each played TV games and phone games more frequently than those 'not at risk'.

Table 3.9 Frequency with which students played various electronic games

	Not at Risk *M* (*SD*) *n* = 2144	At Risk *M* (*SD*) *n* = 151	Problem *M* (*SD*) *n* = 54	*F*(2,2346)	Post hoc	η^2
TV games (e.g., X-box, Game Cube, Play-station)	149.25 (112.93)	178.65 (123.79)	194.13 (133.48)	9.19***	3>1; 2>1	.01
Phone games	96.78 (106.57)	132.57 (116.57)	163.17 (135.04)	18.27***	3>1; 2>1	.01
Hand-held games (e.g., Gameboy)	53.36 (96.26)	52.33 (94.40)	119.24 (138.70)	13.02***	3>1,2	.01
PC games	127.55 (119.30)	156.82 (127.02)	140.49 (128.77)	4.65**	2>1	< .01
Arcade games	29.97 (71.52)	51.83 (87.61)	91.00 (121.19)	23.19***	3>2,1;2>1	.02

Note. All post hoc tests significant at .05 level, *** $p < .001$; ** $p < .01$. 1 = not at risk; 2 = at risk; 3 = problem gamblers, η^2: .01-.06 = small effect size; .07-.13 = moderate effect size; .14+ = large effect size.

The analysis was repeated for the male students only to explore whether the association between video game play and problem gambling remained when gender was controlled (as males tend to be more involved in electronic game play and gambling). However, the additional cross tabulation analysis revealed that problem gamblers were significantly more likely than 'at risk' gamblers and those 'not at risk' to report playing all of the different forms of video-game, $p < .05$. However, the small effect sizes for these differences (partial η^2 ranging from .01-.02) suggest that the differences were only very small.

Further analysis revealed that year 8-9 students played TV games, phone games, hand-held games and PC games with significantly greater frequency than both year 10-11 and year 12-13 students (all comparisons $p < .01$). In addition, year 10-11 students played TV games, hand-held games and PC games at a higher frequency than did year 12-13 students (all comparisons $p < .05$). In addition, male students played TV games, hand-held games, PC games and arcade games at a significantly higher frequency than female students (all comparisons $p < .001$) and indigenous students were found to play TV

games, phone games and arcade games at a higher frequency than did non-indigenous students (all comparisons $p < .01$).

In addition, t-test comparisons revealed a significant difference in attitudes towards gambling (as measured by the Delfabbro and Thrupp scale measuring peer and family approval of gambling and future intentions to gamble) among those who did and did not play video games daily. For each form of electronic game play, those who acknowledged playing daily scored significantly lower on the scale, reflecting an increasingly optimistic attitude towards gambling (all comparisons, $p < .001$). In addition, for each form of electronic game play except phone games, those who acknowledged playing daily scored significantly higher on the 9-item measure of young people's economic perception of gambling (reflecting an overly optimistic attitude towards gambling) ($p < .001$).

Correlation analysis was conducted to explore the relationship between the frequency with which students played various electronic games and the frequency with which they engaged in gambling, however, all the correlations were statistically trivial (mostly between .05-.15).

T-test comparisons revealed significant differences in video game play frequency among those who had engaged in various forms of gambling in the past year and those who had not, where higher rates of play was associated with an increased likelihood of having gambled. For example, those who had gambled on card games in the past 12 months had played each form of electronic game at a significantly higher frequency than those who had not gambled on card games (all comparisons $p < .05$). This same pattern of results was identified for sports gambling (all comparisons $p < .01$), Crosslotto (all comparisons $p < .01$), Keno (all comparisons $p < .01$) and Internet gambling (all comparisons $p < .05$). Those who had gambled on poker machines were found to play phone games and arcade games at a significantly higher frequency than those who had not gambled on poker machines in the past year (all comparisons $p < .05$). Respondents who had gambled on racing were identified to play TV games, phone games and arcade

games at a higher rate than those who had not been involved in this form of gambling (all comparisons $p < .001$). This same pattern was identified for scratch ticket gambling (all comparisons $p < .001$) and Bingo (all comparisons $p < .001$). These findings taken as a whole seem to indicate that playing various electronic games at a higher frequency (in particular TV, phone and arcade games) is associated with an increased likelihood of being involved in gambling.

3.2 Discussion of Quantitative Results

3.2.1 Gambling Involvement

The results show that the overall level of involvement (56%) was slightly lower than the rate obtained previously by Delfabbro and Thrupp using a similar methodology in 2001. However, this difference may only be due to the fact that the current study included young people aged less than 15 years who, as the current study showed, tended to have lower participation rates. Thus, it can generally be concluded that the rates of overall gambling amongst young people in South Australia have remained relatively stable over the last six years.

Examination of the specific gambling activities young people are involved in revealed that instant scratch tickets were the most popular form of gambling (around 2 in 5 students), followed by private card games (just over 1 in 4 students). Betting on racing, sporting events and bingo were next most popular among the respondents. In comparison with the figures obtained in 2001, the results for specific activities show that the percentage of young people playing cards for money has increased from 20% to 27%, EGM gambling has decreased from 13% to 5%, whereas racing and scratch ticket gambling has remained very much the same (42% in 2001 and 39% in 2007). Although keno and Crosslotto were not separated in the previous survey, the results clearly show a significant decrease in the percentage of young people gambling on these products (over 35% in 2001 down to only 9% for Crosslotto and 10% for keno in 2007).

These findings were very similar to the findings of Delfabbro, Lahn, and Grabosky (2004) in an ACT study based on the same age range which showed that private card games were most popular, followed closely by bingo/scratchies, racing and gambling on sporting events. The greater popularity of instant scratch tickets in the South Australian sample likely reflects that these products are legally available to South Australian adolescents aged 16 and over. In contrast, the relatively low involvement in EGM gambling suggests that the regulatory controls currently in place to restrict access to gambling venues are generally effective.

Only a relatively small proportion of the sample reported gambling on a regular basis (around 6%) and this figure was significantly lower than in previous Australian studies (e.g., 15% for SA, Delfabbro & Thrupp, 2003; and 10% for the ACT, Delfabbro, Lahn & Grabosky, 2005). Those who did gamble regularly were most likely to do so on card games or scratch tickets.

3.2.2 Problem Gambling

Although the majority of the students surveyed did not acknowledge experiencing difficulties as a consequence of their gambling, assessment with the DSM-IV-J revealed that 2.4% of the students could be classified as problem gamblers. This rate exceeds the problem gambling prevalence rate for adults identified by the Productivity Commissioner (2001) and the recent adolescent prevalence rate of 1.0% obtained by the Department for Families and Communities (2007). In addition, a further 6.4% of the respondents were identified as being at risk (score of 1-3 on the DSM-IV-J). Although limited research has been undertaken to explore the prevalence of adolescent problem gambling in Australia, four studies have formally reported adolescent problem gambling prevalence rates in the public domain in Australia and as such can be used as a standard for comparison (see Table 3.10). As indicated in Table 3.10, previous knowledge concerning the adolescent problem gambling rates in Australia (based on school surveys) would suggest a national prevalence rate of approximately 3-4%, so that the results in the present study are generally lower. However, it is important to recognize some differences in methodology. For example, the present study includes a younger sample than the previous study conducted in S.A, whereas the recent S.A. Department for Community Services study used a residential telephone survey methodology that may have found it more difficult to contact young problem gamblers because many are likely to rely exclusively on mobile phones. Nevertheless, the results of the present study suggest a prevalence rate for adolescent gambling that is lower than in comparable international estimates in Canada which estimate the adolescent prevalence rate at approximately 5.0% (ranging from 3.4% to 6.7%) (Derevensky, Gupta & Winters, 2003). This finding is surprising given the similar age restrictions in the two countries and the pervasiveness of gambling in Australia. It is, however, possible that the differences noted are attributable to the

stringent enforcement of these age restrictions in Australia with particular regard to certain forms of gambling such as poker-machines. In Australia poker-machines are confined to venues (e.g., hotel gaming floors and casinos) that young people are prohibited from entering, making it difficult for young people to gain access to this form of gambling.

Table 3.10 Comparative prevalence rates for problem gambling in adolescents

Author (year)	*n*	Participant age range	Australian State	Measure	Prevalence rate
Moore & Ohtsuka (1997)	1017	14-25	Vic	Modified SOGS	3.0
Moore & Ohtsuka (2001)	769	15-18	Vic	Modified SOGS	3.8
Delfabbro & Thrupp (2003)	505	15-17	S.A.	DSM-IV-J	3.5
				VGS	3.3
Delfabbro, Lahn & Grabosky (2004)	926	12-17	ACT	DSM-IV-J	4.4
Department for Family and Community Services (2005)	629	16-17	SA	DSM-IV-J	1.0
Current study	2669	12-17	S.A.	DSM-IV-J	2.4

Further analysis revealed valuable insight into some contextual elements of problem gambling in adolescents. Consistent with the findings of Delfabbro, Lahn and Graboski (2004), Delfabbro and Thrupp (2001) and also Moore and Ohtsuka (1997), problem gamblers were also found to have experienced a big win when they first started gambling, and to have friends and family who are supportive of gambling. Having an early large win has repeatedly been identified as a significant correlate of problem gambling in the adult population (Lesieur, 1984). Early wins appear to lead to greater confidence in the ability to win money because early reinforcement experiences tend to be influential in shaping people's beliefs and attitudes (see Langer & Roth, 1975). Laboratory research had confirmed that people who obtain early wins are more likely to develop an illusion of control, or an over-estimation of the subjective probability of winning.

3.2.3 TV Poker programs

The findings regarding TV poker programs revealed that almost three quarters of the total sample had watched such programs, with a significant proportion of these young people finding the shows enjoyable. Some respondents admitted that exposure to these programs had influenced their decision to gamble in real life and model what they saw on the TV, although this was only true of a relatively small proportion of the sample. Although the majority of respondents described gambling largely for fun, the relatively high average amounts won and lost suggests that some young people may gamble with the intention of winning money. Not all those who reported gambling on card games necessarily set limits on the maximum bet placed during the game, which could increase the risk of them gambling more than could be afforded.

3.2.4 Video game play

Analysis of students' participation in various electronic (non-gambling) games revealed that respondents were most likely to play TV video games and PC games most regularly, whereas arcade games were played infrequently and for short periods. Higher rates of involvement in video games tended to be associated with higher involvement in gambling. In addition, when those who had gambled in the past year on various forms of gambling were compared to those who had not, the gambler group tended to acknowledge a significantly higher rate of involvement in video game play. However, most of these associations were generally small and appear to be confounded by gender. Since males tend to gamble more than females and also play video-games more frequently, video-game players will also be significantly more likely to gamble. In other words, gender acts as a common antecedent factor to many of the findings relating to video-games obtained in this study.

3.2.5 Social Context of Gambling

Exploration of the social context in which underage gambling was occurring revealed that adult help was the predominant way in which Casino, TAB and lottery gambling occurred, and that respondents had, on rare occasions, played poker machines (at a hotel or club) by themselves and were able to do so unnoticed without having to

show ID. Gaining entry into the SkyCity Casino unnoticed was less frequently reported than was access to hotels and clubs, suggesting that regulatory controls work more effectively at the Casino than out in the suburbs perhaps because of the greater scrutiny of patrons at a single entry point.

The results showed that adults play an important role in enabling underage gambling. Indeed, of those who had gambled in the past 12 months, only 61.1% reported having done so with their own money. In this sense, the findings confirm previous studies that show that social factors play an important role in the development of gambling. If parents gamble, it is likely that young people will be exposed to gambling as well, and will frequently become involved in gambling as a result of parents making gambling transactions on their belief, e.g., buying lottery or scratch tickets, or placing bets on their behalf on races. Similarly, since some forms of gambling are social activities (e.g., card games), it is not surprising to find that many young people report gambling with friends on a number of activities, and that their friends share positive attitudes towards gambling. Both family and peer influences are considered important pathways into gambling (as with many other activities), but can place young people at greater risk of developing gambling-related problems. As was found in previous studies (e.g., Delfabbro & Thrupp, 2003 and Delfabbro et al., 2004), young people with gambling problems were more likely to report having close family members who they felt had problems with gambling.

3.2.6 Demographic Differences

The results provided insight into important demographic differences in gambling involvement. For the most part, the findings were consistent with previous studies conducted in the area (e.g., Delfabbro, Lahn & Graboski, 2004; Delfabbro & Thrupp, 2003; Gupta & Derevensky, 1998), highlighting the role of age, gender and ethnicity. As expected, a number of age differences were noted, with a greater proportion of older found to have gambled as compared with the younger students. The older students were also more likely to have gambled with their own money and tended to gamble at a higher frequency than the younger students on most forms of gambling. However, the magnitude of these differences was relatively small and the absence of a consistent age pattern is

inconsistent with he view that gambling is only prevalent in older students. Furthermore, the year 10-11 group (who were predominantly under the age of 18) in fact had a higher rate of problem gambling than did the older year 12-13 group. This has implications for the introduction of school based education programs for students of all ages, as opposed to limiting such programs to older students.

A number of gender differences were also found in the present study. Males were slightly more likely to have gambled in the past 12 months than females and were almost three times more likely to gamble on a weekly basis. Males gambled significantly more often on almost all forms of gambling- except poker machines and bingo, where there was no gender differences. Males were almost twice as likely to have gambled with their own money and spent significantly more money per session on average than female participants on racing and scratch ticket gambling. Importantly, boys were almost three times more likely than girls to be problem gamblers and also at risk gamblers. These findings align with the results of studies conducted both nationally (Delfabbro, Lahn & Graboski, 2004; Delfabbro & Thrupp, 2003; Moore & Ohtsuka, 2000) and internationally (Derevensky & Gupta, 1998; Fisher, 1999) that have found males to gamble more frequently than females and also to be more likely to develop problems as a result of their gambling.

Such gender differences are considered to reflect a combination of developmental, socialization and cultural factors during the earlier years of life that extend into adolescence (Delfabbro, 2000; Hardoon & Derevensky, 2001; Martinez, 1995). For example, early socialization experiences are proposed to lead to different preferences from a young age. Males are argued to prefer more physical and competitive activities and females are proposed to prefer activities that require skill and precision and that are more co-operative (Griffiths, 1995). In this sense, for males the aim in gambling is not necessarily to win money but to demonstrate their dominance over others via the placement of larger or riskier bets, being able to place bets where others may lack the fortitude to do so and through being able to select the winning horse, dog or team. This

broader motivation to gamble has been used to explain why males tend to prefer more competitive forms of gambling such as Casino table games, sports betting and racing.

An additional important finding of the present study was that differences in gambling habits were identified across students of ATSI descent. While individuals of ATSI descent were no more likely than other students to have gambled in the past year, these respondents were over twice as likely to have gambled on a weekly basis. Indigenous students were also found to gamble more frequently than other students on most forms of gambling (including poker machine gambling, racing, sports, instant scratch tickets and bingo). In addition, indigenous students tended to spent more money on each of these forms of gambling (except racing where no difference by nationality was identified). Indigenous students were also found to spend four times more money than other students on Internet gambling. Furthermore, four times as many indigenous students were classified as problem gamblers and indigenous students were twice as likely to be in the at risk group. These findings align with research undertaken in Australia which has found a higher rate of problem gambling among Indigenous Australians in the adult population (AIGR/LIRU, 1999; Productivity Commission, 1999). Sociological research (e.g., Foote, 1996) has explored the hypothesis that gambling in indigenous communities is seen as a form of social exchange. Others have accounted for such findings by making reference to differences in economic and social adversity, such as the greater propensity for using leisure time to gamble in response to unemployment and poverty (Delfabbro, Lahn & Graboski, 2004). While it is beyond the scope of the present study to clarify the underlying causes and contributors for these differences, the results nonetheless identify indigenous students as a vulnerable population that is likely to benefit from targeted school-based education and awareness initiatives.[1]

[1] Feedback from teachers at two schools indicated that indigenous students experienced some difficulties understanding some of the questions, so it is possible that the elevated problem gambling rate may be partially attributable to differences in interpretation (e.g., a positive response bias). Despite this, it should be noted that there are now a number of Australian studies that have obtained similar results for indigenous populations.

Chapter 4: Study Results II: Statistical Knowledge and Perception of Risks

4.0 Overview

This chapter summarises the findings from questions that asked young people to indicate their perceptions of the amount of skill involved in various forms of gambling, their perceptions of odds and probabilities, and their endorsement of irrational beliefs relating to gambling.

4.1 Perceived Skill in Gambling Activities

Participants were asked to rate out of 10 how much skill they believed was involved in various forms of gambling. A rating of 1 corresponded with no skill and a rating of 10 indicated the belief that the activity involved all skill. Overall, poker (M = 5.34, SD = 2.83) and blackjack (M = 4.54, SD = 2.74) were perceived by the students to be more skillful than other forms of gambling. Conversely, poker-machines (M = 1.14, SD = 2.04) and lottery games (e.g., Keno, X-lotto, Powerball, Soccer Pools) (M = 1.27, SD = 2.20) were perceived to involve the least amount of skill. Table 4.1 below provides a summary of results broken down by gambler status. A consistent pattern can be observed in which problem gamblers perceived each activity to involve more skill than 'at risk' gamblers who, in turn, provided higher skill ratings than those 'not at risk'. One way ANOVA revealed a significant difference in perceptions of skill between the three groups for each form of gambling.

Table 4.1 Mean (*SD*) ratings of perceived skill for various forms of gambling

	Not at Risk *M* (*SD*) *n* = 2249	At Risk *M* (*SD*) *n* = 163	Problem gamblers *M* (*SD*) *n* = 59	*F*(2,469)	Post hoc	η^2
Poker	5.25 (2.79)	6.31 (2.87)	6.37 (3.16)	15.04***	1<2,3	.012
Blackjack	4.50 (2.72)	4.91 (2.69)	5.25 (3.05)	3.82*	1<3	.003
Poker-machines	1.09 (1.98)	1.36 (2.29)	2.48 (3.19)	14.73***	1<3; 2<3	.011
Racing (horses, dogs)	3.31 (2.77)	4.17 (3.20)	4.97 (3.03)	16.59***	1<2,3	.013
Sports (not racing)	3.60 (2.81)	4.34 (3.19)	5.37 (3.05)	15.88***	1<2,3; 2<3	.012
Lottery games	1.19 (2.09)	1.80 (2.53)	3.03 (3.71)	26.72***	1<2,3; 2<3	.021
Roulette	2.05 (2.52)	2.42 (2.79)	3.43 (3.51)	9.77***	1<3; 2<3	.008

Note. All post hoc tests significant at .05 level, *** $p < .001$, * $p < .05$.. 1 = not at risk; 2 = at risk; 3 = problem gamblers, η^2: .01-.06 = small effect size; .07-.13 = moderate effect size; .14+ = large effect size.

T-test comparisons were conducted to determine whether perceptions of skill were influenced by gender. The results indicated that male students were significantly more likely than female students to provide higher skill ratings to poker and sports, and that the female students were significantly more likely to indicate that a greater degree of skill was involved in poker-machines, lottery games and roulette[2] (all *p*'s < .05). In addition, indigenous students provided higher skill ratings for poker-machines and lottery games, relative to non-indigenous students, who provided higher skill ratings for poker (all *p*'s < .05).

Table 4.2 below shows the breakdown of results by grade level. As can be seen, significant differences were noted for all forms of gambling except roulette, however,

reference to the partial η^2 statistic reveals that the effect sizes were very small for these differences. It should also be noted that the direction of these differences was not consistent. For example, progressively more skill was perceived to be involved in poker, blackjack, racing, and sports, with increasing age. However, the opposite effect was noted for poker-machines and lottery games; the older the respondent, the lower the perceived level of skill ratings provided. In addition, the year 8-9 students provided the same mean skill rating as the year 10-11 students for roulette, which was on average higher than the mean skill rating provided by the year 12-13 students.

Table 4.2 Mean (*SD*) ratings of perceived skill for various forms of gambling by grade level

	Year 8-9 $n = 1085$	Year 10-11 $n = 1016$	Year 12-13 $n = 364$	$F(2,2462)$	Post hoc	η^2
Poker	4.91 (2.84)	5.65 (2.77)	5.82 (2.75)	25.09***	1<2,3	.019
Blackjack	4.26 (2.81)	4.75 (2.66)	4.86 (2.64)	11.57***	1<2,3	.009
Poker-machines	1.27 (2.10)	1.12 (2.07)	0.85 (1.77)	6.04**	1>3; 2>3	.005
Racing (horses, dogs)	3.16 (2.77)	3.57 (2.88)	3.71 (2.79)	8.14***	1<2,3	.006
Sports (not including dog or horse-races)	3.41 (2.85)	3.91 (2.88)	3.93 (2.75)	10.01***	1<2,3	.008
Lottery games	1.42 (2.28)	1.23 (2.19)	0.94 (1.91)	7.20**	1>2,3; 2>3	.006
Roulette	2.13 (2.55)	2.13 (2.58)	1.94 (2.59)	0.87		.001

Note. All post hoc tests significant at .05 level, *** $p < .001$, ** $p < .01$. 1 = Year 8-9 students; 2 = year 10-11 students; 3 = year 12-13 students, η^2: .01-.06 = small effect size; .07-.13 = moderate effect size; .14+ = large effect size.

[2] Roulette might not be a game with which many young people have all that much familiarity, so the erroneous perceptions observed amongst some people might be as much to due to with a lack of knowledge as inaccurate perceptions.

4.2 Perceptions of Odds and Outcomes

4.2.1 Perception of Lottery Odds

Participants were asked to indicate which set of odds was closest to those associated with winning X-Lotto (true odds 1:8.145 million). Overall, only 10.8% of the students surveyed were able to identify the closest response, 1 in 8 million[3]. The most popular response was 1 in 900 (26.2%), closely followed by 1 in 20 million (25.9%). Cross tabulation analyses revealed no significant associations between responses and either gambling status, indigenous status or grade level ($p > .05$). However, a significant association was found with gender. Males were significantly more likely to identify the correct odds (14.0%, compared to 9.2% for females), $\chi^2(1) = 13.52$, $p < .001$.

4.2.2 Perception of randomness

A further question assessed young people's perception of randomness by asking participants to indicate whether there were any numbers on a single die that were harder to roll than others. A total of 436 (16.3%) participants indicated that some numbers were harder to get than others. Of those who indicated that some numbers were harder to get than others, 45.1% indicated that 6's were hardest to get; 24.0% indicated that 1's were hardest to get, whereas 21.7% of respondents indicated that 4's were easiest to get. This was closely followed by 3's (20.4%), 1's (19.9%) and 2's (19.1%). Cross tabulation analyses revealed no significant association between gambler status or gender and beliefs about hard numbers ($p > .05$). However, a significant association was found for indigenous status. Indigenous students were significantly more likely to believe that some numbers were harder to get than others (35.5%, compared to 16.5% for non-indigenous students), $\chi^2(1) = 18.82$, $p < .001$. Year 8-9 students (20.1%) were also significantly more likely to hold the belief about hard numbers than year 10-11 students (14.3%) and also year 12-13 students (13.5%), $\chi^2(2) = 16.24$, $p < .001$.

[3] The authors acknowledge that young people may have difficulties in conceptualizing, or have little experience with, very large numbers or very long odds, so that it possible that any probability smaller than 1 in 100,000 might be treated as being very much the same as options such as 1 in 8 million. In effect, the

4.2.3 Knowledge of factual probabilities

Participants were asked to demonstrate their knowledge of factual probabilities by indicating the chance of getting two tails when two unbiased coins were tossed ($p = .25$). Only 31.7% of those surveyed correctly identified the true probability. In addition, almost half the sample (46.5%) believed that the probability was 0.50. Cross tabulation analysis revealed that problem gamblers were no less accurate than 'at risk' gamblers or those 'not at risk'. In addition, males and females produced a similar level of accuracy on this question, as did indigenous and non-indigenous students (all p's > .05). However, a significant association was obtained for age, $\chi^2(2) = 17.75$, $p < .001$. Year 8-9 students (29.0%) were significantly less likely to identify the correct response than the year 10-11 students (34.8%) and the year 12-13 students (39.9%).

4.2.4 Susceptibility to Representation Bias

A further question informed participants that a coin had been tossed 12 times, and asked them to indicate which sequence of outcomes was most likely. In total, only 58.6% of the students surveyed were able to identify the correct response, that all were equally likely. While 8.7% of participants believed the sequence with 10 alternations was most likely, and 7.6% identified the sequence with 5 alternations, only 3.8% said that the sequence with two alternations was likely. A further 16.9% believed that none of the sequences was likely. A significant association was identified with gambling status and susceptibility to representation bias, $\chi^2(2) = 16.59$, $p < .001$. Problem gamblers (41.7%) were significantly less likely than both 'at risk' gamblers (52.4%) and those 'not at risk' (62.4%) to identify the correct response to this question. As such, the problem gamblers surveyed in the present study can be viewed as more susceptible to representation bias in outcome sequences.

Responses to this question also varied according to gender, $\chi^2(1) = 25.53$, $p < .001$. Females were significantly more likely to identify the correct response (66.2%, compared to 56.4% for males). In addition, indigenous students were significantly less

lack of accuracy in responding may be due to an inability to differentiate between the correct longer odds option (1 in 8 million) and the other options that were available.

likely to identify the correct response (33.3%, compared to 62.6% of non-indigenous students), $\chi^2(1) = 25.29$, $p < .001$. Year 8-9 students (57.3%) were significantly less likely than both year 10-11 (64.5%) and year 12-13 students (65.4%) to correctly identify that each sequence was equally likely, $\chi^2(2) = 14.86$, $p < .001$.

A second question assessed young people's understanding of factual probabilities, this time in the context of roulette. Students were informed that the roulette wheel has 37 numbers (18 red, 18 black, and a green 0) and asked to indicate the odds of spinning up red on two consecutive rounds. As can be seen in Table 4.3, the question was answered poorly by the overall sample with only 14.2% of respondents able to identify the closest answer, 4 chances in 16. Cross tabulation revealed a significant association between problem gambler status and correctly identifying the odds of spinning two red numbers in roulette, $\chi^2(2) = 7.83$, $p < .05$. However, no consistent pattern by gambler status was observed, and the problem gambler group were in fact significantly more likely than the remaining sample to identify the correct odds. This could reflect a greater familiarity with roulette, a form of gambling unfamiliar to many of the respondents. No association was identified in terms of grade level, indigenous status or gender.

Table 4.3 Perceived chance of consecutively spinning up two red numbers in roulette

	Overall Sample (n = 2364) n (%)	Not at risk gamblers (n = 2138) n (%)	At risk gamblers (n = 164) n (%)	Problem gamblers (n = 59) n (%)
4 chances in 16 spins*	379 (14.2)	347 (16.2)	17 (10.4)	15 (25.4)
9 chances in 18 spins	636 (23.8)	561 (26.2)	52 (31.7)	22 (37.3)
1 chance in 37 spins	531 (19.9)	489 (22.9)	34 (20.7)	7 (11.9)
1 chance in 18 spins	278 (10.4)	248 (11.6)	23 (14.0)	6 (10.2)
2 chances in 18 spins	540 (20.2)	493 (23.1)	38 (23.2)	9 (15.3)

* Correct response

4.2.5 Gambler's Fallacy

Respondents were presented with a further question that provided them with information about the series of wins and losses obtained by two fictitious poker-machine

gamblers, Bob and Sue. Bob had been winning initially and then lost continuously. Sue had just started to obtain a few big wins. When asked who was most likely to win in the next game, 67.7% of those surveyed correctly identified that the two gamblers had an equal chance of winning the next game. A total of 16.7% indicated that Bob was more likely to win in the next round and a slightly smaller proportion of respondents (14.3%) indicated believing that Sue had a greater chance of winning.

Cross tabulation analysis revealed that problem gamblers (41.7%) were significantly less likely to identify the correct response as compared to 'at risk' gamblers (54.8%) and those 'not at risk' (69.3%), $\chi^2(2) = 17.75$, $p < .001$. In addition, further analysis revealed that indigenous students were significantly less likely than non-indigenous students to identify the correct response, $\chi^2(1) = 17.99$, $p < .001$ (45.3% and 68.6% respectively).

4.2.6 Perceived risk of gambling

The students surveyed were also administered a 9-item measure of economic perceptions of gambling developed by Delfabbro and Thrupp (2003) to measure their level of gambling related optimism. A high score on this measure corresponds with lower 'risk aversiveness' and a belief that gambling makes good economic sense. Conversely, a higher score indicates a more cautious attitude towards gambling. The mean score for the total sample on this scale was 17.96 ($SD = 5.86$, maximum score = 45). One way ANOVA indicated a significant effect by gamblers status, $F(2, 2632) = 92.21$, $p < .001$. Problem gamblers ($M = 24.66$, $SD = 6.58$) scored significantly higher than 'at risk' gamblers ($M = 21.92$, $SD = 6.00$), who in turn scored significantly higher than those 'not at risk' ($M = 17.51$, $SD = 5.61$). This indicates that problem gamblers held a more optimistic attitude towards the profitability of gambling.

A significant effect was also found for grade level, $F(2, 2633) = 10.60$, $p < .001$. The year 8-9 students ($M = 17.40$, $SD = 5.63$) scored significantly lower on the scale than did both the year 10-11 respondents ($M = 18.52$, $SD = 6.06$) and the year 12-13 respondents ($M = 18.11$, $SD = 5.84$). T-test comparisons also revealed a significant effect

for gender, $t(2642) = 13.48$, $p < .001$. Males ($M = 19.43$, $SD = 6.01$) were found to score significantly higher on the scale than females ($M = 16.46$, $SD = 5.29$), indicating that the female respondents held a more cautious attitude towards gambling.

4.2.7 Presence of Irrational Beliefs

Respondents were asked to rate their agreement with 10 statements assessing the presence of common cognitive biases in gambling. The statements were rated on a scale from 0-10, so that potential scores could range from 0-100. The mean score for the total sample was 41.88 ($SD = 18.12$).

One way ANOVA revealed a significant difference in ratings by gambling status, $F(2,2507) = 8.15$, $p < .001$, where those who were 'not at risk' ($M = 41.41$, $SD = 17.81$) provided significantly lower ratings than those 'at risk' ($M = 46.51$, $SD = 19.56$) and those categorized as problem gamblers ($M = 46.72$, $SD = 22.82$) ($p < .05$). A significant effect was also yielded by grade level, $F(2,2499) = 3.82$, $p < .05$. The year 8-9 students ($M = 40.92$, $SD = 17.98$) provided significantly lower ratings than did the year 10-11 students ($M = 43.05$, $SD = 18.20$) ($p < .01$). The year 12-13 students ($M = 41.43$, $SD = 18.31$) scored lower on average than the year 10-11 students, but this difference was not statistically significant. T-test comparisons also revealed a significant gender difference, $t(2509) = 6.39$, $p < .001$, where males ($M = 39.57$, $SD = 18.71$) provided significantly lower ratings than females ($M = 44.16$, $SD = 17.24$) on the scale. This suggests that the female students surveyed tended to endorse the cognitive biases with greater strength than did the male students. There were no significant differences relating to indigenous status.

4.3 Discussion

The first component of this investigation was to determine how well young people understood the risks and odds associated with common games of chance. On the whole, the findings showed that many young people in South Australian schools have only a limited understanding of the nature of gambling activities and the true odds of winning. For example, when asked to indicate the probability of winning a lottery with a 6 from 45

draw with only one ticket, the majority of respondents grossly underestimated the odds of winning (e.g., many endorsed odds of 1 in 900 when the true odds were 1 in 8.145 million). In addition, approximately 1 in 6 participants indicated that when rolling a 6 sided die, certain numbers were harder to get than others, and less than one third of respondents were able to correctly identify the true odds of getting two tails when two unbiased coins were tossed. Almost half the sample believed the odds was 1 in 2, reflecting an overestimated perception of the true odds (1in 4). Furthermore, when asked a question to assess young people's susceptibility to representation bias in outcome sequences, almost half of the sample demonstrated their susceptibility to this bias by failing to identify that each of the sequences presented as multiple choice options were equally likely when a fair coin was tossed twelve times. Additionally, when asked a question assessing young peoples understanding of factual probabilities in the context of roulette, only 1 in 7 respondents were able to identify the correct probability.

A second component of the research explored the extent to which knowledge about gambling and beliefs differed between young people with gambling problems and others within the sample. Overall, the findings from this study were consistent with the findings of Joukhador et al. (2004) and Jefferson and Nicki (2003) obtained using adults and Delfabbro, Lahn and Grabosky's (2006) findings obtained with adolescents, all of whom found that gamblers were more likely than other adolescents to endorse statements that reflected some misconceptions about randomness and the nature of chance. For example, problem gamblers in the present study rated themselves as being significantly more skillful than other students on each form of gambling, including those where it is not possible to influence the outcomes with skill such as lottery games, poker-machines and roulette. In addition, problem gamblers held a more optimistic attitude towards the likelihood of winning and the profitability of gambling, as measured by Delfabbro and Thrupp's (2003) measure of economic perceptions of gambling and gambling related optimism. Furthermore, problem gamblers in the present study were found to be increasingly susceptible to representation bias in outcome sequences and increasingly susceptible to the gambler's fallacy, as shown by their reduced level of accuracy when asked to identify which sequence of outcomes was most likely when a coin was tossed 12

times (all sequences equally likely) and who of two players was most likely to win the next game on a poker-machine (both equally likely). The only finding that went against this trend related to problem gamblers not being found to be more likely than the other students to hold irrational beliefs about hard numbers when rolling a six-sided die (no significant difference in accuracy).

These findings were also consistent with the students' responses to the ten statements assessing the presence of cognitive biases in gambling. Problem gamblers endorsed the statements measuring the availability heuristic, representation bias and illusion of control with greater strength than did other respondents, reflecting an increased susceptibility to three prominent cognitive biases in gambling.

However, consistent with the findings of Delfabbro et al. (2006) and Benhsain and Ladouceur (2004), young problem gamblers were not found to be any more inaccurate in terms of their knowledge of objective odds and factual probabilities. For example, there was no evidence to suggest that problem gamblers had a poorer perception of the odds of winning a lottery draw. In addition, problem gamblers were no less accurate when it came to correctly identifying the true odds of getting two tails when two unbiased coins were tossed. Furthermore, when asked to indicate the probability of a red number spinning up in two consecutive rounds of roulette, the problem gamblers were in fact significantly more likely to identify the correct odds. One reason for this is that young gamblers may have greater familiarity with roulette, a form of gambling unfamiliar to many of the respondents, but such an argument is more difficult to sustain with other very common and well known activities such as dice and coin throwing.

4.3.1 Individual Differences

Analyses were also conducted to determine whether the results for the attitude and belief questions varied according to a young person's gender, age or ethnicity. For questions relating to factual information, only a relatively small number of individual differences were found. For example, male students were found to be slightly more likely to correctly identify the odds of winning a lottery jackpot, but males were also found to

have gambled on lotteries more often, so that this difference might also be due to differences in knowledge and experience. Similarly, while there was an age difference for the question relating to the odds of getting two tails (Year 8-9 students were poorer), this may also be due to variations in exposure to this sort of knowledge. Such probabilistic concepts are usually not covered in mathematics curricula until at least year 10.

In terms of beliefs about gambling and susceptibility to biases, some individual differences were evident, but not necessarily in a consistent way to make the findings particularly meaningful. For example, indigenous students were found to be more susceptible to the gambler's fallacy and representation bias in outcome sequences. In addition, indigenous students were approximately twice as likely to believe certain numbers were harder to roll than others. However, for the statements measuring the presence of irrational thinking in gambling, no indigenous differences were found for questions relating to representation bias, the availability heuristic or the illusion of control.

There were also some grade level differences associated with the questions relating to the representation bias in outcome sequences and 'hard' numbers in dice throwing with younger students found to be less accurate than older students. However, young people were, at the same time, less likely to endorse statements assessing the presence of irrational cognitions in gambling, although closer examination showed that this difference only held for the statements reflecting the availability heuristic and the illusion of control, but not for statements assessing the representation bias. Year 10-11 students generally had similar attitudes about the profitability of gambling as the year 12-13 students, and both of these groups were significantly more optimistic about gambling as compared with the Year 8-9 students.

Few gender differences were noted, although males were found to be more susceptible to representation bias in outcome sequences and female respondents tended to hold a more cautious attitude towards gambling than did male respondents. In addition, responses for the statements assessing the presence of irrational cognitions in gambling

revealed that female students tended to endorse the cognitive biases with greater strength than did the male students. However, closer inspection of this difference revealed that this difference was only obtained for the availability heuristic and the illusion of control (no gender difference was identified for the representation bias).

A number of individual differences were identified in relation to the perceptions of skill in various gambling activities across the respondents sampled. Male students were significantly more likely than female students to provide higher skill ratings to poker and sports, and female students were significantly more likely to indicate that a greater degree of skill was involved in poker-machines, lottery games and roulette. In turn, indigenous students provided higher skill ratings for poker machines and lottery games, relative to non-indigenous students, who provided higher skill ratings for poker. In addition, progressively more skill was perceived to be involved in poker, blackjack, racing, and sports, with increasing age. These findings tended to align with the reported level of involvement in various forms of gambling among the subgroups. For example, males were more likely than females to be involved in poker and sports, but not poker-machines, Indigenous students were more likely than non-indigenous students to be involved in poker-machines and instant scratch tickets, but not card games such as poker and the younger students were significantly less likely to have been involved in card games and racing than other students.

Chapter 5: Focus Group Findings

5.0 Overview

This chapter summarises the findings from the focus group study of young people conducted in South Australian schools. In each of the sections below, the views of younger students aged 13-14 years are separated from older students (aged 15-17 years) to allow comparisons.

5.1 Understanding of Gambling

The respondents were first asked to describe in broad terms what they understood by the term 'gambling'. Four principal characteristics or themes were identified by the year 8-10 respondents.

(a) Gambling was Understood as Something Involving Risk.

A number of young people correctly identified gambling as a form of risk-taking. As one respondent pointed out: "It takes a lot of risk and people don't mind taking a lot of risks, especially if they are stressed out or something as it takes their mind somewhere else rather than where it actually is."

(b) Gambling Involves Uncertain Outcomes

Many respondents said that gambling was an activity where one could win or lose unpredictably. Comments to this effect included, "You don't always get money out, its just luck", "You don't know what you will get back" or "You don't know from how much you put in that you will get out."

(c) Gambling Can Involve a Loss of Control or Addiction

Gambling was also recognised as something to which one could become addicted or lose control over. This understanding of gambling was held by many respondents as evident in such statements as: "you don't know when to stop sometimes" and "you can get addicted to it after a while." A further respondent commented, **"**When people gamble they really hide what they are feeling. They act like they are happy but they know it is not

a good thing but they can't help themselves, that is why they keep doing it. Even though they might think it is under control it is really a habit for them."

(d) Gambling is Associated with Losing Money

The majority of respondents, however, held a negative view of gambling and associated the activity with losing money. This view was evident in statements such as **"**It's bad because you waste a lot of money on it" and "It's a quick way of losing money." A further respondent commented, **"**One minute your life can be going heaps well and then if you gamble you could lose everything."

The young people interviewed were also asked to describe what gambling was. The majority of respondents found it difficult to define what gambling was, and instead described gambling by giving examples. When asked, 'what is gambling' respondents gave answers such as "card games like poker", and "pokie machines because they're a quick way to win money". Those who did describe gambling tended to define gambling in terms of consequences rather than in terms of the activity itself. Comments to this effect included, "an easy way to lose money", "more loss than profit" and "a way to lose money as people put in money and think they will get more money, but they will actually lose it". Although gambling was defined in terms of the positive consequences in some cases (e.g., "trying to get rich" and "trying to win money") the majority of respondents held a negative view of gambling and saw gambling as an unprofitable activity.

When asked specifically to demonstrate their understanding of what activities they considered to be gambling, respondents displayed a broad awareness of several forms of gambling, including bingo, horse racing, greyhound racing, poker, poker machines, blackjack, and keno. Lottery games were not identified and neither were instant scratch tickets or sports betting.

When further prompted to describe what makes all of the different activities discussed forms of gambling, the ability to win money, or more specifically, the use of money was most commonly identified.

The older group (years 11-12) had a somewhat different perspective concerning the nature of gambling. For these respondents, gambling was largely understood as something that was addictive, and something involving risk. Typical comments included: "People can spend their whole life savings on it, like $50,000", and "it's something that can be addictive and ruin people's lives". Others highlighted the risks of losing: "you put your money down and there is meant to be a random chance of getting back more than that." In contrast to the younger group, gambling was not automatically viewed as an activity where people lost money by these respondents. In this respect, the older group showed a less pessimistic attitude towards gambling.

When asked to identify activities they considered to be gambling, a similar range of gambling forms was described by the older group. These included pokies, instant scratch tickets, card games such as poker and Blackjack, horse racing, dog racing, casino gambling, keno, Lotto and football tipping. However, these respondents identified activities that the younger group did not (e.g., lottery gambling, instant scratch tickets and football tipping).

When further prompted to describe what makes all of the different activities discussed gambling, the common factor was again identified as being either the ability to win, or more specifically, the use of money. This view was reflected in statements such as "You put money on the line for a chance to win", "There's a risk of losing, but there is also the opportunity of gain", "You're putting your money on something and hoping you get your money back" and "It's all betting, it's the possibility of getting more than what you put down". In addition to this, the presence of risk and chance was also perceived to characterize gambling. Comments to this effect included a view of gambling as, "something where there is risk involved", "a game of chance as you can't always guarantee that you're going to win a game".

Moreover, the older respondents were stricter in their definition of gambling. These respondents believed that gambling always involved either money or items of monetary value. For example when asked whether gambling always involved money, one

respondent commented, “Yes, and the chance to gain money. You should be taking a risk of some sort.” A further respondent commented, “It’s mostly money. But no, it could even be a house. It could be anything really. Anything that you could trade for money.”

5.2 Young People’s Understanding of Risk

When asked what it means when someone says gambling is risky, responses by the year 8-10 students reflected two central themes: the perception that risk is associated with uncertain outcomes and the idea that risk means there may be negative consequences.

Several respondents made reference to ‘risk’ being associated with uncertain outcomes. Comments to this effect included, “you can win or lose”, “you never know what is going to happen”, “you could win stuff but you don’t know” and “you don’t know what will happen.” Other respondents provided similar descriptions, for example, “you don’t know if you are going to win or lose”, “you don’t know if you are going to win or not” and “it’s just luck”.

The other predominant response related to the idea that the term risk implies the presence of adverse consequences, or that something of value was at stake when people gambled. Young people pointed out that “you could lose your family”, “you can go into debt”, “it means you can lose a lot of things out of it, like those you love, your family, and your money” and “you can practically lose everything; your car, your house and stuff like that”.

Discussions around risk also elicited the idea that there were different levels of risk in gambling. Respondents believed that a number of factors made various forms of gambling more or less risky. One of these was being more skilled than your opponent. This was reflected in comments such as, “there’s less risk with card games if you’re good at playing”. In addition, poker was perceived to be less risky than electronic gaming machines as “sometimes in poker you can tell if the other person is lying, but on poker machines the player is computerized.” Other respondents believed that the amount of

money or the time you spent gambling influenced how risky it was. This idea aligns with the theme that risk is understood in terms of consequences and was reflected in the comment, "I don't know how to describe it, but it depends on how bad you are with gambling. If you are really bad then you can lose a lot of stuff, but if you just did it just once it's not that risky." For most respondents, EGM's were perceived to involve the greatest risk relative to other forms of gambling as there was little you could do to influence your chance of winning (i.e., "you just push the buttons").

Responses from the older group revealed a more elaborate understanding of risk. For these respondents, gambling was viewed as risky as you could lose, it was unlikely or hard to win and because you could become addicted. For the majority of respondents, gambling was perceived to be risky as "It is unlikely or hard to win." Comments to this effect that reinforced how difficult it was to win at gambling included, "you're not likely to win", "there's less chance of winning" and "there could be a one in a million chance of winning." Alternatively, several respondents drew attention to how easy it was to lose while gambling. This understanding of risk was evident in statements such as, "if you put it all on the line you can end up losing all your money.", "You might lose more than what you started off with", There could be a chance where you lose a lot, and you think it's 50/50, you might win, but you could lose a lot" and "usually there is more chance of losing."

Gambling was also perceived to be risky by some as it was understood to be something one could get addicted to. This notion was evident in comments such as, "It's risky, you could get addicted to it" and "When you start losing you want to try and win it back so you keep gambling to win it back." A further respondent claimed:

> "So you bet ten dollars and win back ten, and think 'luck has come my way'. Then you keep winning say five more hands of poker, and then you start losing all your money and then someone will start beating you. Your luck's changed and then you start getting addicted to that whole game. Everything changes, your money, your house, your life."

The older group also perceived there to be levels of risk in gambling, this time in terms of how much one could afford to lose. The respondents indicated believing that the level of risk was not the same for everyone "because a really rich person betting $50 wouldn't be a very big deal whereas a poor person betting $50 might be half of their money." This idea was reiterated by other respondents who believed, "It's a greater risk for the poor person because they could lose more of their money." There was still perceived to be a risk for wealthier people, but a smaller risk ("it's a risk of sorts but not a great one"). A further respondent held a similar view, indicating that certain forms of gambling held less risk as the cost per game, and hence the amount one could lose, was smaller. This respondent claimed:

> "I think that risk depends on how much money that you're paying to enter because then you have more of a chance of losing that money. If you buy a $1 scratchie ticket then you haven't really lost much if you don't win anything on it because it's only a dollar, unless you're doing that over a long period of time everyday. If you go out and put a million dollars on a horse then there's more risk of losing that than winning more back. That's a lot of money to lose. It depends on how much you're paying and how much you're spending on the activities and how much risk there is."

Other respondents felt that certain forms of gambling were riskier than others, however, this was attributed to the level of skill that could be used to influence the outcome. For example, one respondent commented, "pokies and video machines are really about chance. And I think things that are more towards skill are choosing horses and stuff."

5.3 Understanding of 'Luck' and 'Chance' Activities

When asked to describe what was meant by luck and chance and how gambling differed from other games that young people might play, most young people had difficulties in providing a clear answer. The most common response from individuals was that they did not know. Moreover, those participants who did respond were only able to demonstrate a vague understanding of the concepts. For example, the understanding of luck was illustrated in comments such as "luck is winning" and "like to make a wish". In a similar vein, chance was understood as "not knowing what is going to happen."

Although one respondent was able to give an example of what chance was, further elaboration again revealed a limited understanding of chance, "When you roll a dice you have 6 chances to get a certain number and in some gambling games that involve a dice, you put in money and you have a 1 in 6 chance to win, but the chance that you wouldn't have got it is different, and so if you lose you might keep going and it can make you gamble even more."

Overall, the majority of respondents felt that gambling was distinct from other games they had played. The reasons for this difference included, "you [gamble] if you want to be rich", and "some games you don't have to bet on like gambling". When asked to provide specific examples, several respondents indicated that video games were different from gambling. The reasons provided for this distinction fell into four central categories: the level of risk, the amount of skill involved, the role of money and the degree of reality. Video-game play was considered less risky and was seen as "just a game". Video games were also seen as involving skill or control, whereas with a poker machine, "you press a button and who knows what happens". Furthermore, the idea that the use of money differentiates these two activities was evident in comments such as "with video games, you wouldn't be losing anything", "with gambling you have to put something on or pay something, but with video games you don't actually put anything in for it", and "in video games you win or lose, but in gambling you lose money". Reality was also perceived to differentiate the activities in that video games were not perceived to be representative of real life. This was reflected in statements such as, "[video games] are not real", and "you can just play video games".

A second example was the game Monopoly. The overriding view was that this game was different from gambling. The use of money was a central reason for this distinction, with several respondents making a point of mentioning that Monopoly involved the use of "fake money". However, respondents also believed that luck was involved in both games. One respondent commented that "one time I played monopoly and beat everyone, and then the next time I lost". When asked what influenced the different performance on the two games the respondent commented, "I sort of thought it

was luck." However, at the same time, respondents also believed that you could be good or bad at Monopoly, despite it being predominantly a game of chance. One respondent indicated that one's chance of winning depended on their opposition, commenting, "It depends on who you are playing. If you play against a really bad player you can buy more, and other times you could play a really good player and not be able to buy as much." A further respondent indicated that adults tended to win more frequently than children as "they know what they are doing with money."

Skill was also perceived to differentiate gambling from activities such as darts. When asked what was required to be a good darts player, one respondent commented "just skill". This same respondent also believed that "only chance" was required to be a good poker player. However, other respondents disagreed with this view and argued that skill was also involved in poker, for example, being able to identify whether your opponents are bluffing. Money was viewed as an additional factor that differentiated gambling from darts. This view was reflected in statements such as, "with darts you just muck around, unless you enter competitions and then you can win money, but you don't really lose money" and "darts you just do it for fun, but you do it for personal gain with gambling."

The year 11-12 respondents showed a more advanced understanding of luck and chance relative to the younger group of respondents. For this group, luck and chance were described quite differently and were not considered to be identical concepts. For some, luck was believed to be something that could be acquired by performing rituals or obtaining objects, which was in turn associated with an improved chance of winning. For others, luck was associated with having no control over outcomes. Conversely, chance was understood as a mathematical concept that indicated the likelihood of either winning or losing.

Some respondents felt that luck was something that could be acquired by performing rituals or obtaining certain objects. Responses reflecting this understanding of luck included, "like wearing the same kind of clothes you wore when you won", "Some

people believe you can create your own luck, like if you walk under a ladder it's bad luck but you can counter it if you do all these good things" and "luck is normally used as a term - lucky dance, lucky hat, something you do or have that will make you improve". However, others directly opposed this stance claiming, "You can't say you can improve your luck in gambling by going out and doing this or by wearing lucky underpants or something like that. You just can't do that because there is no real solid object luck to make it better or worse."

Closely linked to the idea that one can acquire or possess luck was the notion that luck was associated with an improved chance of winning. Certain respondents felt that lucky people won and thus, that possessing luck could increase one's likelihood of winning. Comments to this effect included, "people that are lucky might win", and "you believe that if you're quite lucky, then you believe you have a better chance than if you think you are quite unlucky and believe the chances will be against you."

For others, luck was understood as something that determined the outcomes in gambling, reflecting the belief that both gambling and luck were associated with having no control over outcomes. Responses to this effect included, "luck is just like when you take a gamble and it is luck if you win or not", and "it is just luck whether you win or not". A further respondent expressed the belief that luck was associated with having no control over outcomes in the comment, "you have nothing to do with it- it's luck. If you roll a dice and say it's going to be a six, it's all luck whether it happens, you've got nothing to do with it."

Whereas the majority of respondents in the younger group had little to no understanding of chance, many of the older respondents were able to demonstrate an understanding of chance as the mathematical probability of winning or losing. This understanding was reflected in comments such as, "chance is ratio of winning" and "the ratio of losing". Further comments to this effect included "Chance is a more mathematical term, there is a percentage that you could win or lose" and "chance is more of a statistic, like if you have a 1 in 6 chance of winning this event. But I think chance is

more of a mathematical term than luck." In addition, respondents were able to identify that the chance of winning a jackpot on either lottery gambling or EGM gambling was slim. For example, one respondent commented, "Yeah like a horse might have a good chance of winning, like 1 in 4, but in the pokies or the lotto the chance of winning is like 1 in 50 million."

When older students were asked in what ways gambling was similar to or different from other games that they might play, three central themes emerged; namely that gambling can be addictive, real money is involved in gambling and that the consequences of gambling are different and more detrimental. Video games were given as a good point of contrast. Video games were perceived to involve less risk than gambling. This view was reflected in comments such as, "I guess in video games if you lose you can start again from the next level and it doesn't cost you anything, you can always start again. And it won't really affect your personal life. It might affect your day but it won't affect you personally. The same risk isn't there." Other respondents believed there was more skill involved in video games than in gambling, or that the key difference related to the fact that there was the potential to win or lose money when gambling. As one respondent commented:

> "You think of what you could do with the money if you did win. Like in that instant when you are playing or whatever you are doing, like as you are scratching the ticket you are thinking oh what if I got those numbers on there what if I did get that 10,000 or if I did get that 100, even what if I did get that 5 bucks, what would I go and buy at the canteen? With a video game there is nothing like that, it is just what if I win this level wow that is great to get to the next level but there is no typical reward at the end of it."

The final distinction related to reality. Video games were not perceived to be representative of real life. This stance was reflected in statements such as, "having the ability to lose something real is kind of more exciting than something that is imaginary or virtual. Even losing 5 bucks on the pokie game, it kind of stings more than losing a million dollars on some computer game." However, some in this group believed that video games were becoming so similar to reality that they were becoming increasingly

similar to gambling and might even encourage gambling in later life. Comments to this effect included, "Because they put that much reality in it, kids think it won't affect them in real life, but the moment they become older it will start affecting them" and "With the computer games, some of them put heaps of reality in like gambling and everything. They think computer games are like real life and they don't know the difference at that age until they get older and start losing everything." In addition, a further respondent commented, "all sorts of games are addictive like now they're bringing out gambling games for your playstation. So they could get addicted like a child playing gambling games by themselves." A further respondent still commented:

> "They have Poker games like texas hold'em, no limit poker and like kids play those sorts of games and think yeah I could bet whatever I want on this, no matter how much I lose it's not going to affect me. But then some kids are actually addicted and then when they're older and go to the casino and think back to their childhood they think wait a minute I never lost anything on this, I could do it here and not lose anything. And then there are those people who think it could work in reality."

Although fewer respondents in the older group commented on board games, gambling was again perceived to be distinct from board games by some in this group. Similar reasons were provided including the use of fake money. For example, one respondent commented:

> "There is something about winning paper money that is just a game, it doesn't seem real. It is kind of a childish thing. When you gamble with cash the money is real because it is something from the real world and it is something you can use. Even if it is only two bucks, it is just the fact that it is something that you have earned or someone else has earned it actually has use in the real world. In comparison there is more of a rush to win or lose real money."

In addition, respondents also identified that you have a greater chance of winning a board game than you do with gambling. This view was reflected in comments such as, "At the casino everything is not in your favour. You expect to lose because everything is in their favour. But if you are playing a board game or something you can win it, you probably have more of a chance of winning it." However, other respondents also argued that board games could be similar to gambling in that randomness was involved in both

activities. This view was reflected in comments such as, "I reckon with board games, like monopoly you never know what you are going to roll. The chances are that your two dice are going to roll a seven every time but you don't, you could end up with anything or land on Mayfair." Similar to the younger respondents, these respondents also believed that you could be good or bad at board games like Monopoly despite it being viewed as a predominantly a game of chance. Comments to this effect included:

> "When I am playing Monopoly or something with friends I know how they play so I can beat them easier so I suppose you have got more of a chance of winning games like that. But with casino games and things it's all luck you can't really control it that much."

In line with the responses provided by the younger group, the older group again perceived skill to differentiate darts from gambling. Responses to this effect included, "darts is a game of skill and pokies is game of chance", "it's more of a sport than chance gambling" and "darts definitely has more skill because you can practice at it."

5.4 How Gambling Differs as a Form of Risk-Taking

In order to gain further insight into young people's understanding of gambling and how it differs from other activities, the respondents were informed that some people who gamble say: "Everything's a risk. Some people lose all their money when they start a business which doesn't work out". Those interviewed were then asked to comment on whether running a business was just like gambling. The responses by the year 8-10 students to this question were mixed with slightly less than half of those interviewed agreeing that gambling was like running a business, and a similar proportion arguing that the two activities were distinct. A further group still believed that the question could not be answered in such black and white terms, instead arguing that there were both similarities and differences, and that their answer would depend on factors such as the type of business, its size and how it was run.

Respondents who felt running a business was like gambling justified this by drawing attention to two common themes; that the outcome in both gambling and business was often uncertain and also that both may involve losing money. Those who

identified that the outcomes were uncertain in both gambling and running a business offered comments such as, “I don’t know it’s just good luck sometimes if it’s going to sell”, “You are not sure if you will have luck and if it will go well”, and “You don’t know what is going to happen when you sell things, if they are going to sell”. These respondents believed that the outcomes were largely determined by luck and chance and did not appear to be aware that people typically have greater control over the outcomes in business than they do in gambling. Other respondents argued that both running a business and gambling could involve losing money. Responses to this effect included, “You don’t always get money back” and “In gambling you might never get any money so it is like running a business. You might try and sell you car and house just to keep your business running”. A further respondent commented, “When you run a business sometimes you have to give money to other people and not know whether you are going to get the result you want. I guess you could be gambling your company, because you could lose it all.”

A number of respondents disagreed with the idea that running a business was like gambling. Some respondents justified their stance by acknowledging that business often provided returns. Comments to this effect included, “you might get money back” and “because if you use your money wisely you always get money back.” Other respondents believed that “With a business you have to work hard” and that this was what differentiated business from gambling. Comments to this effect included, “To start a business you kind of have to work hard” and “When you have a business you put in hard work in employment, when it is gambling it is just luck. In poker you need a little skill, but you don’t put hard work into it.” Other respondents cited the ability to influence outcomes in business as the reason why business and gambling were different. This view was evident in statements such as “You can change how [a business] is running”, “you can put more in advertising and get people to go and buy it” and “I think that they kind of have a choice to make the prices a bit lower and stuff”. However, some respondents indicated that there were also things one could do to improve their chances of success when gambling. Suggestions to this effect (in the context of horse racing) included “taking the type of track into consideration” and “the other horses that are racing”. A

further respondent indicated, “You can study who has won more and you have got a better chance of winning.”

Others still were unsure of what to make of this question, believing that there were both similarities and differences and that it depended on factors such as the type of business, its size and how it was run, although it was not clear how these factors influenced their response. One respondent commented, “I think that half of the time it is a gamble and then half of the time it is not really. Because when you use money you may not get the result you want but you may still get a result. So you still get something when you get it back. But I think in other ways you might not get the result you want.” A further respondent claimed, “It kind of depends on what form of business it is. Where it is small it might be more like gambling, whereas if it is a big business it is different.” An additional respondent provided a similar response, namely, “And I think a lot of it is about the size of your business, like if you’re opening a tiny little dress shop or whatever, it’s less of a gamble than opening a big one. With a department store, you get more back. So it’s not a bigger gamble to have a small one except for the fact that you can get a lot more back.”

When asked to comment on whether running a business was just like gambling, the majority of year 11-12 respondents perceived these two activities to be quite different. Although this differs from the view of the younger groups who were more open to considering the similarities between starting a business and gambling, the reasons provided for viewing the activities as being different were quite similar. The responses appear to reflect the same four themes identified by the younger respondents. Some respondents felt that gambling and running a business were dissimilar as a business often provided returns. For example, one client claimed, “you have more chance of making money from a business”. For other respondents, gambling was perceived to be less of a conscious choice. This view was reflected in statements such as, “you have got more choice and more control over what is going on.” Other respondents still cited that in a business one had to work hard and that this was why gambling and running business were considered to be different. For example, one respondent commented, “with a business it

is something you are trying to set up and working for. That's the main thing with pokies, you are not working for anything, whereas in business you are working for your product." A further respondent stated:

> "Business involves hard work and perseverance, and things you have to personally do. But gambling is just like, if you go and gamble and you win 10,000 dollars, its not, you will be happy because you got the money, but you didn't put hard work into it. I think you would be more satisfied if at the end of the day you started running a business and you kept earning money off of it because you put a lot of hard work into it."

The final most popular reason for why gambling was different from running a business related to the ability to influence outcomes in business. This view was evident in statements such as, "You're looking ahead, planning. You've got a business, you can see where you're heading but gambling you can see where you want to be but it's not like it's going to happen", and "You're looking at the factors in business and also the trends, the things that people are currently doing a lot of, if they have enough money then they're aware of it and if they're aware of it then they'll probably go to it". It was further pointed out that:

> "…you would probably invest and try and work out what the climate is in the economy, and try and work out if there is a market for your product. Business is kind of more entrepreneurial. You have to sell your things to people and you may not have a particularly good product but if you can convince people that they need it and you can use your charm, it can actually affect how well your business goes. Even though there is some luck involved you are in control. You should know if there is need for the product, you should know how much it will cost and you should know everything ahead of time. There is still a way of getting out of it, and cutting your losses. But gambling is all in with that $10,000, and if it's not going your way you lose it straight up."

The older respondents also pointed out that running a business involved skill. Responses to this effect included, "I don't think so because running a business involves a lot of skill and hard work and forward planning and there are so many different aspects to it. It is not like when you just go to the casino and place ten grand on ten. There are so many different concepts and it is not just easy money." In addition, a further respondent

commented, “there is a lot of risk involved with setting up a business as you don’t know whether the products will sell or what will happen if you invest in the company of other people. You don’t know what will happen but it requires a lot of skill to do so whereas gambling is just luck of the draw, there is no skill involved most of the time.”

Those respondents who were able to identify similarities between gambling and business again justified this stance by drawing on two central themes: (a) That the outcome in both gambling and business was often uncertain and (b) That both may involve losing money. Those who argued that the outcomes were uncertain in both gambling and running a business provided responses such as, “in a way starting a business is gambling because you don’t know what you will get and whether it will continue on or not” and “I agree with that, I reckon everything is a gamble. Like it could always go either way.” Other respondents pointed out that both running a business and gambling could involve losing money. Responses to this effect included, “I think it is a bit of a risk if it starts dropping and you put money on a business and before you know it you could be bankrupt and you have lost all of your money. I think it is a bit like gambling if there is a risk, and there is a chance you might get some of it back or nothing at all”, “With a business you could lose everything, if something went wrong or you got robbed, if the sales were down and you couldn’t run it anymore” and “I think it is kind of a risk, when you start a business you don’t know if it going to be successful, like it might be busy when you start and then no one might come, like no profit or anything.”

5.5 Perception of Skill in Gambling

The majority of younger respondents indicated believing that there was not any skill involved in gambling beyond cheating. Rather, many respondents believed “it’s all luck”. This view was reflected in statements such as, “I don’t think you need skill to gamble. It just depends on chance and probability. There is some skill to play a card game but you don’t really need a skill to win or lose. The best player might lose and the person who just started might win so you don’t need skill.” However, despite believing that gambling does not involve skill, a significant proportion of respondents reported that you could become good at gambling. Several respondents claimed that you could get

good at gambling without indicating the type of gambling involved, whereas related skill to only particular forms of gambling such as poker, blackjack, sports betting, and horseracing.

Respondents believed you could get good at betting on horses by "watching the horses" and by "looking at the board of things about the horse." However, respondents were also able to acknowledge that "It's still chance." A similar finding emerged in relation to football betting. Several respondents believed one could become good at football tipping, but they were also able to identify the significant role of chance. This was reflected in comments such as, "You can't tell unless they lose all the time- it's really chance again" and "It's chance, but if you watch a lot of footy and look at who has the most chances when they play against each other. But you never know, it is still chance."

However, respondents were generally adamant that one could become good at card games. The underlying reasons for this opinion varied across the respondents; however, some clear themes emerged. Respondents felt that a number of factors helped one to become good at card games, namely knowledge of the game, bluffing, being able to read people, cheating or counting cards, or a general sense of skill or improvement over time. One could become good at card games because they involved bluffing, or being able to "read" other people. Other respondents indicated that you could become good at card games if you were able to count cards.

Simiarly, the majority of the respondents in the older group identified certain forms of gambling as containing some elements of skill (e.g., poker, horse-racing, football tipping), whereas others were seen to be completely random or chance determined (e.g., keno, bingo or poker machines). Once again, the most common response was that one could be skilled at card games. The older respondents also believed that knowledge of the game, bluffing, being able to read people, cheating or counting cards or a general sense of skill or improvement over time were the factors that enabled one to become skilled at card games.

(a) Knowledge of the Game

Several respondents believed that skill was involved in card games as one could improve their chances of winning as they increased their knowledge of the game. Comments to this effect included, "you have to be able to make decisions when to fold, when to place your bet" and "in poker you need to know when to place your bets, you need to how much the bets can get up to as well until you win the hand."

(b) Bluffing

Others identified that one could become good at gambling on card games like poker because they involved bluffing. Comments reflecting this view included, "if you have a good poker face", "Well bluffing that's a skill if you can keep a straight face" and "in poker you can make your opponents fold if they think you have a better hand than they do." However, some respondents commented that although bluffing is involved in poker, the outcomes are still largely chance determined. For example, one respondent commented, "the problem is no matter how skilled you are, a better hand will always win. So if they have a royal flush or full house or something they will be very confident in their ability and think I think he is bluffing or I don't think he has a decent hand. So no matter how convincing you are you may get everyone else to fold and the other person will look at their hand and go well I obviously had a better hand than this guy and they will match you and you will lose all of your money. Because even though bluffing is a skill it doesn't actually affect the hands you get, and the hand you get is more important than the ability to bluff." Other comments to this effect included, "but no matter how much skill you have you can still lose" and "there are things like poker where it is completely on what hand you are given but then there is also some skill involved with the bluff and the bet."

(c) Reading people

Being able to read one's opponents was viewed as an additional skill involved in card games. Responses reflecting this view included, "with cards it's also a matter of reading other people's body language, it is a skill", "the expressions on your face and

stuff", "If they are not a very good player but have a fairly good hand then you can control them or whatever" and "Usually you can see if they have only just started playing that they are not sure."

(d) Cheating/ counting cards

Other respondents pointed out that one could improve at card games via cheating or counting cards, and thus skill was perceived to be involved in these types of gambling. Comments to this effect included, "If you are playing at home or something and someone knows how to read a card deck then it could be classed as a skill. And if you cheat and get away with it that could be classed as a skill", "your knowledge of the cards and how likely the odds are and the combination of what is coming through" and "you go by what is in your hand and what is left."

Gambling on horse racing was another form of gambling perceived to involve skill. The respondents indicated that knowledge about the horses, jockeys, previous history and conditions could be used to exert influence over the outcomes. Comments to this effect included, "you could start off with research on a horse, or just have a natural way of picking", "you might know that horse and start watching how it is doing", "you look at how many wins, who the jockey is, what kind of track he usually competes on", and "In horse racing you hope that the horse is fast and that the jockey who is riding it is quick and knows how to ride the horse." In addition, a further respondent commented, "It's based on how they perform in different conditions. Like the trainer of one might be really good when it is not raining, and other times people bet on it and it starts raining. So you have to know all of the different variables about what is going to happen."

Several respondents also indicated skill was involved in football tipping. Comments reflecting this belief that one could improve at football tipping included, "I suppose if you know the game really well and know all the players and how well they perform and the conditions as well" and "well if you start out not knowing much about footy and then you continue on to learn all the teams and stuff you could get better at predicting what would happen."

Other forms of gambling were perceived to involve no skill at all. These included, "roulette", "bingo", "keno", and "pokies". For example, one respondent commented, "with the pokies and keno it's all putting money into a machine and picking a number, but everyone has that skill. I mean it is putting money into a hole and pushing a lever down or going up to keno and picking a whole bunch of numbers. And in keno, it is a random chance where you hope the machine has picked the right numbers for you. In pokies, you put money in and hope it comes up with want you want." While most respondents agreed on this point, a few respondents held a differing view. For example, one respondent disagreed that roulette involved no skill claiming, "I guess in roulette if there has been 50 black ones you could say there is going to be a red one very soon", reflecting a common cognitive distortion in gambling. In addition, a further respondent when discussing poker machine gambling commented, "You can read when there is going to be a good payout. You see someone putting money in all day and then they don't get a single thing and leave and you go 'why don't I put a little in there, it's due for a payout'. And other people think the same thing." A further respondent commented:

> "I was going to say can you get good at playing pokies. This goes against what I think entirely but both of my grandparents are quite heavy gamblers and my grandma picks the same numbers every time, like she can feel when it is going to pay out and she has won at least about three grand at different times at keno. And she will just think I will get these numbers now and there has been a few situations where she just had an impulse to go and get them and then completely out of no where. One day she said she was going to go and get lunch and then go and get the numbers and then she was lining up for lunch and the game was about to start and she quickly thought, no I am going to go and get it. And I think she won $1700 on those numbers. I think she has kind of got good at being able to tell you when they are going to come up even though that sounds completely ridiculous, but it has worked."

5.6 Involvement with Gambling

Respondents were asked to say whether they had gambled themselves, whether their friends and family gambled, and if they had ever gambled with the assistance of older people. Of the younger respondents interviewed, only two indicated that they had never before tried gambling. One respondent commented, "I think everyone would have gambled because like when you bet your best friend, that is gambling." Along similar

lines, several respondents discussed engaging in pseudo gambling activities or engaging in gambling but not for money. Respondents who reported gambling without money commented, “Me and my friend and my brother play poker with Jatz biscuits”, “I’ve played poker for like matchsticks and stuff like that but not really money”, “We play word bingo a lot at school for chocolate”, and “I play blackjack but with monopoly money”. Respondents who identified pseudo gambling activities described, “I only do bets with dad, if I can do something or not. Like bet I can do a 360 in the air on my kneeboard”, and “If you’re watching something on T.V. and you’re like I bet this is gonna happen and then someone challenges you.” A further respondent commented, “You know like monopoly is kind of gambling. When you buy a house and you hope you’ll be able to land on it and get your money back and not land on the tax thing.”

Those respondents who indicated that they had tried gambling with money said that they had tried scratch tickets, Bingo, horse and dog racing, keno, football tipping, and card games such as Blackjack and poker. In addition, one respondent indicated that they had tried poker machine gambling. This respondent commented, “I think I have done it once or twice at a hotel. Once with my dad because he knew the person that owned it and I just played around but I wouldn’t actually use my money, I would use someone else’s.” However, some individuals felt that gambling amongst youth their age was minimal. One respondent commented, “When they say gambling is directed at youth, or people under 18 have gambled I think they just do scratchies and everything.” A further respondent claimed, “and it is not like everyday, it is not once a week where they go to the pokies and pour their money in there.”

Of those who had tried gambling, the vast majority indicated doing so with family. Several respondents indicated trying gambling with their mothers. Comments to this effect included, “I have played instant scratchies- my mum buys them for me”, “I went [to bingo] with mum and we won a few bucks”, “my mum has taken myself and my sister to Bingo and this one time I played and at the end I won $50” and “I have played bingo with my mum, and scratchies with my aunty on Thursdays. Not every Thursday. They normally get money and then we go out for tea”. A further respondent commented,

"You know Bingo in hotels, they use to have that but it's illegal now. My mum would go there and I would cross off the numbers, and on Keno. But I would never go up to get the money, and I would never go over two dollars."

Many respondents also indicated that they gambled with their father. These respondents described, "I bet with my dad", "I haven't like thought about it but I've gone to like races that were like a dollar or something like my dad bet it for me" and "I've never played with money like every year for the Melbourne Cup my dad will say pick a horse or something- Go to the Guernseys and see which one you like best and you choose from random things and then you put in a dollar or five dollars or something." A further respondent commented, "A couple of footy seasons ago my dad did do the footy tipping and so he would put in $2 for me. A couple of times I got 8 out of 8 but I never won. But I only did it for half a season."

Others described gambling as a family activity. Respondents in this category indicated, "Between my family we have played Texas hold em for $5" and "when I do gambling things it's normally that one of the parents will put the money in. None of the kids actually put the money in and when they win they don't actually get the money." An additional respondent commented, "When I play at home with my family I play the proper game because dad went out and bought the whole set but we don't always bet money like when we have friends over." A further respondent still commented, "I learnt by watching my family. So then we sort of got together with 5-cent pieces. It was pretty fun."

From these responses, it appears that young people often engage in Instant scratch ticket, bingo, and keno gambling with their mothers, while betting on horses and sports betting tends to be done with their fathers. On the other hand, card games such as poker appear to have become a popular family activity and a vehicle through which young people learn the rules of the game.

Although most respondents indicated trying gambling with various family members, some reported having gambled with friends. Comments to this effect included, "A couple of my friends, we use 5-cent pieces to gamble with poker", "I have just betted on a few football games with my friends" and "I played poker at home with my friend, but that's nothing, just mucking around." A further respondent reported, "I remember one time I went to a birthday party in the hills and they had poker."

Among the older respondents, few indicated that they had never gambled. In addition many respondents revealed that they had not only tried gambling, but that they also engaged in a variety of pseudogambling activities that did not require them to enter formal gambling venues. Comments demonstrating involvement in pseudogambling activities included, "sometimes I bet with friends at school, for favours. Like my friend said she would pass her maths test and I said if you don't she has to pack up all my gear for the rest of the week from after lesson". Further comments included, "sometimes me and my brothers do it for food and what not. Like play card games for chocolate", and "At my grandparents occasionally there will be one slice of cake left and we will get out the cards and go nuts. And my brothers and I when we play Monopoly, we bet on who is going to win Mayfair." Other comments to this effect included, "I played poker a couple of times with chips but not with real money", "I have gambled with fake money but I've never tried it with real money" and "yeah I have only really done it with fake money. Like you said, a few friends get together every now and then and put five bucks in and the winner goes home with it, and that is basically it." Although many of these examples do not describe the exchange of money, the underlying concept of wagering still applies.

Those respondents who indicated that they had tried gambling with money specified that they had tried instant scratch tickets, bingo, horse and dog racing, keno, football tipping, pokies, and card games such as blackjack and poker. Those who indicated gambling on horse races often gambled on major racing events such as Melbourne Cup or Oakbank racing carnival. For example, one respondent commented, "I usually get put in a sweep for Melbourne Cup, I don't pay for it my parents put me in, $10 or something, and sometimes I win." In addition, a further respondent commented, "I

have done it for horse racing. I think it was Oakbank or something, 50 cents each way. I won about $2 and they gave me the $2 and that was the best thing ever for a ten year old." Other respondents commented, "once a year I put a dollar on the Easter races", "I have picked race horses and they have won", "I have picked horses", "I sat down with the TAB guide and said I am going to pick some winners today, when I was 7, just as a joke and I won 4 in a row" and "In grade six I picked a couple of horses with dad, and I won and he spent the money." These responses indicate that this type of gambling is quite common and acceptable among young people, and also, that it is something that is often done with family, particularly with fathers. In addition, when some respondents were asked how they had gambled on horse racing, comments included, "I got my mate's dad to do it", "you can just walk in, but if you want to have a bet you have to be 18" and "I go with my dad."

Similar responses were evident in relation to greyhound racing. For example, one respondent commented, "just with my family we went out to the dog races about a month ago and we did some gambling there. I really haven't done much else other than that." Several respondents also acknowledged gambling with instant scratch tickets. While some respondents indicated engaging in this form of gambling with family, others seemed to be buying instant scratch tickets on their own. In addition, although this form of gambling has been legalized for the majority of respondents in this group, several indicated that they had been doing so while underage with the help of their parents. This reinforces how this form of gambling is often considered to be socially acceptable for young people. Comments demonstrating gambling with instant scratch tickets included, "I play scratchies, a lot of people will get them for a birthday or something, just something small like that. I got one the other year from my uncle", "Scratchies are good like that you win and go back and buy another one", "yeah I have been doing scratchie tickets since I was about five. And I have been doing X-lotto with my mum and dad since I was that age as well. And then I have just been doing it with them like they will help me get a ticket. And now since I have been 14 I have been doing it with my own money. About once a month, I don't do it that often" and "yeah I play scratchies." In addition, a further respondent when describing her first experiences with gambling commented, "I

think I was just at home with my mum one day and she said she was getting X-lotto and I said can I have one of those. And so I played I think one or two and the first one I lost, and the second one I won twenty dollars and then bought another one with that and won twenty dollars. And that hooked me pretty much and I have never won anything more than four dollars since, but it is still fun to do it."

Unlike the younger group, several of the older respondents indicated that they had gambled on electronic gaming machines. Responses to this effect included, "I've played pokies and poker", "I've bet on pokies and scratchies" and "I have played pokie machines and I have played cards. But not at the casino." In addition, a further respondent commented, "When you get older you have some money here, and you have a drink with your friends as well. So it's all part of the whole thing. But when you play on the pokies as well in a bar and you have a few beers there, and you have a couple of bucks and you could buy a pint or you could just play the pokies." A further respondent commented, "yeah it didn't turn out that well, I didn't bet much but I still lost on the pokies."

Gambling on card games was the most popular response among the respondents interviewed. The majority of these respondents indicated playing poker in particular. When asked how they began playing card games, responses included, "a few of us just got together, we all know how to play, we have all played before. We just thought it would be a bit of fun to get together and play. Some of my older friends from work will do it. So we just got the idea to get together", "well I have played card games since I was reasonably young. I'm not great at it but it has always been fun", "it was with my grandpa and with my parents as well. When on holidays and it was raining we would always play poker with chips or lollies or matchsticks. And you always had good fun and you could win a stack of lollies" and "I just think it is a bit of fun and we did it between only friends and family so we don't really lose money to the TAB or anything so we just have a bit of fun."

While few respondents discussed football tipping, it is possible that this was not perceived as a legitimate form of gambling by the young people. Nonetheless, one respondent commented, "yeah footy tipping. Just at home with a dollar per game, 22 in total. The odds are that you will get money back in return for it."

5.7 Access to Commercial Gambling Under the age of 18

The majority of younger respondents indicated that they did not know anyone who had played the pokies or got into the Casino when they were not yet 18. Only two respondents indicated that they had personally. Of these respondents one indicated, "I was able to just walk straight through the pokies, but I got told off when I got in there." The second respondent described gaining access with his great grandad. When asked if he was asked to provide proof of age he commented, "No, I just said I was going with him and they watched me the whole time. I just held the coins."

The respondents interviewed tended to believe that the enforcement of age restrictions were strict enough at present. The majority of respondents believed under aged gamblers would be identified and reprimanded. This was reflected in comments such as, "I reckon you would get caught red handed" and "yeah, you'd get caught and you would have to hand in all of the money". A further respondent also commented, "I don't know anyone [who has gambled while underage], but I think the age restrictions are strict enough." However, some respondents also acknowledged that checking proof of age at over age venues was not always systematic and that youth who appeared to be over 18 often were not asked to produce identification. This view was reflected in comments such as, "you could have a 16 year old that looked like a 20 year old and they don't ask for ID" and, "if you look really old you can get in if they don't ask you for ID." This implies that young people are aware that they could gain access to gambling venues if they looked over 18, and reinforces the need for the consistent and systematic enforcement of age restrictions.

Several of the year 11 and 12 respondents indicated knowing someone who had played the pokies or got into the casino before they were 18. One respondent commented,

"Yeah I know heaps of people". Those who did know people identified a variety of means by which underage gambling occurred. Some respondents indicated that "fake IDs" were used to gain access. This was illustrated in comments such as, "yeah he had a fake ID, one of my best friends. I think it was in Melbourne he just walked into the Crown casino. But he has used it to get into other things", "I know someone that I work with about the same age as me but he had his brother's ID and they look heap similar and he got in and put about $20 on and then he got bored and left" and "I don't know whether all people get the same thing where they just go into a bar and just try it just for fun to see if you can. And when they do and they are underage it is just because they look 18 or they have another ID like a friends ID that looks like them."

However, other respondents indicated that there were able to just walk in without being required to demonstrate proof of age. Comments to this effect included, "I know people that just get in but don't need ID", "They just walked in" and "with me I got into the casino because of my height without ID or anything. I just walked in there, it is my height that helps me get in."

When asked whether they perceived the enforcement of age restrictions to be strict enough, several respondents indicated that there were ways to make gaining access relatively easy. Some respondents believed that "if you have a fake ID it would be pretty easy." Others indicated that knowing someone would make it easier to gain access to gambling venues. Comments to this effect included "if your parents own it or you know people that work there" and "if you keep going there you might strike up relationships with people that work there." In addition, several respondents believed that one could gain access if they made themselves look older. Comments to this effect included, "I guess if you were a guy you could just not shave for a bit, and for a girl you could dress yourself up a bit more", "I know 16 and 17 year olds especially girls and they can make themselves look 18 or 19 and tend to persuade the guards then they can get in" and "a lot of people might look much older and get in through that." In addition, one respondent indicated that making yourself sound older enabled you to access telephone gambling, claiming, "you just say the race number and the horse number and they have a number

and you just say what the account number is. They don't really ask you if you sound old enough." Closely linked to this idea was the notion that one could gain access to gambling venues by going with older people. Comments expressing this view included, "often if you were with older people then it would be easier", "if you had an older cousin or something" and "if you were with a bunch of older people and were our age you could get in."

5.8 Why Young People Gamble

When asked why they thought young people gambled, the most popular response made by the year 8-10 students related to money. This view was evident in responses such as, "they want to get richer", "to pay back the money they owe their parents", "you get money out of it" and, "they want to have money". Other comments to this effect included, "because they need money" and "they think they can win money if they play it and it might be something they might enjoy."

The second most frequent reason as to why young people gambled was "for fun". This notion was expressed in comments such as, "they gamble for fun, like scratchies and stuff, it's all sort of very entertaining." A further respondent described, "one time I went to a grand final party and everyone was betting money and my dad asked me if I wanted to put money in and I said no but I just did it for fun." A further respondent still claimed, "Most of the time when you bet on the horses or something at the pub it's kind of fun if people are there and you can see how they go and watch them."

Peer pressure was also mentioned several times as a reason why young people gambled. Comments to this effect included, "I think sometimes they try because everyone else is trying it around them- it's peer pressure." One respondent also indicated that "[peer pressure] was probably there to start off, and then maybe they start doing it on their own." Similarly, pressure was also perceived to come from one's family. One respondent reported, "I think it is sometimes because they see their brothers and sisters and family doing it so they get interested in doing it. And if they see them winning money then they will want to try it because they want to win money."

One respondent also believed that young people gambled “for attention”.

The older individuals provided a range of reasons regarding why they believed young people gambled including for the chance to win, the adrenaline, because you’re not meant to, because it’s cool or fun, peer pressure, family influence, and out of boredom.

Many respondents believed that young people gambled for the chance to win. This view was reflected in statements such as, “the chance you could actually win”, “a bit of pocket money” and “you see people who have won fifty dollars on the horse”. A further respondent commented, “some people get sucked into it, and if you think you will get something out of it, you think why not. You could get something free out of it and some money.”

Other respondents indicated that it was the adrenaline that drew young people to gamble. Comments to this effect included, “the adrenaline”, “Bit of a risk and bit of adrenaline” and “the adrenaline because you are taking a risk.” Closely linked to this idea was the notion that young people gambled because they knew they were not meant to. Comments reflecting this view included “it is being rebellious against your parents” and:

> “I think it is trying a new thing to be part of it. Same like why do you drink before you are 18? You aren’t supposed to get the stuff but you are not supposed to be doing this so it is kind of cool. So it is not just the rush or adrenaline of winning or losing it is also because you are not meant to be doing it. You try it out and you want to see what it is like.”

Other respondents felt young people gambled because it was cool. This view was reflected in comments such as, “it’s cool”, “just for the experience”, and “it has been highly advertised and glorified, and more glamorous.” In addition, a further respondent commented, “you think it will be cool. Like poker is a bit James Bond, so they probably

get into it for that. I suppose the casinos have a social scene, like you go to the casino and put on your dress and everything and go." For them, gambling was viewed as being fun.

Peer pressure was a popular response as to why young people gambled. Comments reflecting this belief included, "because of peer pressure and if you do it then everyone will like you", "just to be like someone older than you, who is 18", and "to fit in.", "some people have older friends and so they think yep I will do it to fit in" and "maybe peer pressure as well. If you get into a bar and all your friends go you will probably just try it even if you didn't want to."

Families were also seen to have a strong influence on young people's gambling behaviour. Responses suggesting that one's family influenced young people to gamble included, "it could be influences from parents" and "probably the parents and family members are the people that influence you" and "some people might see their parents go say to the casino once a week. They go there and win money and they want to live like that. They think it might work for me." In addition, a further respondent commented, "From my experience if you see other family members with luck then you think maybe I could try it. Maybe I could be like them as well."

Several respondents also indicated that young people gambled "out of boredom". Comments to this effect included, "because you're bored", "something to do", and "There is not much to do in Pirie, it's a small town. So you pretty much just go to the pub."

5.9 How Problem Gambling Develops

The younger people interviewed had little understanding of how some people developed problems with gambling. Those who did offer suggestions perceived that chasing losses was what made social gamblers progress to developing a gambling problem. This notion was reflected in statements such as "they make money, but they lose it, and then they try it all over again", "You think 'I haven't won, I will just keep going, and I have to win sometime', so they keep just putting more money in pokie

machines and stuff" and "I guess they think they have to win, so they keep going until they have nothing left and have to sell the house."

Despite some difficulties in being able to understand how problem gambling developed, the respondents interviewed were able to identify a number of factors which they believed differentiated problem gamblers from social gamblers. For the majority of respondents, problem gamblers were perceived to have a greater desire to win money. This view was reflected in comments such as, "They hope that they are going to win each time but then probably don't and they get their hopes up." A further respondent commented, "Well a social gambler they probably understand it a bit more but a problem gambler they've probably got something like maybe they don't have a good house or something. And they think I need the money quickly. And they gamble to get the money quickly." An additional respondent also commented on the idea that problem gamblers have a greater need to gamble, claiming:

> "A social gambler does it every now and again, yeah like a poker night and sometimes a person puts money in and then everyone divvies it up, they even it out. Sometimes you'll play for not money but something stupid like lollies. Whereas if you had a gambling problem you put in your money and you take it really seriously and if you lost it would be a big sort of set back, a big shock."

Problem gamblers were also perceived to spend a significant amount of time at gambling venues by numerous respondents. Comments to this effect included, "They would be in the pub", "They would be there constantly and never really go", "they gamble more than social gamblers", and "they just start doing it in their spare time." A further respondent claimed, "I think my parents have a gambling problem because they go out at night and I have to look after my brother and sister while they go out to a community club near our house."

Being low on cash or having to borrow money was also considered to be a feature of problem gambling. This idea was evident in responses such as, "They might be running out of money and ask you to borrow some", "If they lost they have trouble with

paying bills", and "When your power goes off". One respondent commented, "Sometimes my mum is at work and we call her, and when the phone bill comes she says she will have trouble paying it and we need to stop calling her at work." A further respondent said, "Whenever we went to mum's house there wouldn't be the money there that she is supposed to get for the childcare. We wouldn't be able to do the things we wanted to do because the money wouldn't be there."

For some respondents, problem gamblers were perceived to think differently to social gamblers. For example, one respondent commented, "they think of what their reward could be not what they could lose." An additional respondent pointed out: "You kind of fool yourself into believing that you could win, thinking, 'oh yeah I'm gonna win this one, I'll put my house in' or something like that. They are so sure of themselves that commonsense completely goes out of the window."

For others, problem gamblers were perceived to have less control over their gambling than social gamblers. This view was evident in statements such as "A social gambler would probably limit themselves, I can only spend ten dollars or whatever", "they just go back and think I will only put a couple of dollars in" and "You might bet money and then lose more than you expected to, and then go and try again."

Other responses from individuals included being able to identify a problem gambler by their physical appearance, as "their eyes would be all bloodshot from staying up all night and all the beer" and also that "they would get into fights with their loved ones". One respondent commented, "When they say they are going to be there, they are playing the pokies, and then she comes home and they have a big fight."

The older group suggested a number of pathways by which people may develop problems with gambling. For some, the increased availability was perceived to contribute to people developing problems with gambling. This view was reflected in statements such as, "I think it could be the fact that pokies are in a lot of bars and restaurants and

things now. You see it and have $2 in your pocket and think I will give that a go. And if they have a win first up they will keep going."

For others, problem gambling was perceived to develop out of boredom, or the absence of other social avenues. This view was reflected in statements such as, "boredom when going in there. There is always people in the casino like those advertisements, and go there because they are sad or something."

Others believed that problem gambling developed out of a need or desire to win. Comments to this effect included, "It could be greed as well as trying to win more money", "an easy way to get money", "because of the people next to them they might lose but see everyone else and think they are doing it and they think the more money I put in the more money I will get out" and "they keep thinking they are going to win."

Early big wins were also perceived to contribute to the development of problem gambling. Comments reflecting this view included, "I think once you get that rush from a big win, you just keep trying to get that same feeling again." In addition, a further respondent commented:

> "I definitely think it comes from having a big win because you think well I have done it once I can do it again. My uncle, grandmother and grandfather all have gambling problems and I have seen that they have won something. And also it comes from when you don't have much money, my uncle is pretty broke though from gambling, and he will be like I don't have very much money so I will go and try and win some more because it is a quick fix. So rather than just putting that money into a bank and getting interest and working, he'll go out to the local pub and put it all on pokies and races and that sort of stuff."

However, the predominant way by which problem gambling was perceived to develop was via chasing losses. Comments reflecting this view of problem gambling included, "if they win they start again, if they lose they will just keep trying". A further respondent commented, "You go in ten bucks, and then think I have already lost seven, I might as well keep going, what is another ten bucks, and you think you want to win it all

back. And then you think hang on a second why am I doing this? There is only so much you could be doing, but a lot of people wouldn't realize that and invest a lot more into it." Other responses included, "I think you get hooked on it. You put money on it and then more money on it and say I haven't won in a while I have got to win big pretty soon and just keep putting money in until they just lose everything. You just get hooked on it like that, with the pokies", "our friend's dad would win like 5 or 6,000 in card games and he had the money and would lose, then win, and lose and win, and then he bet their cars and stuff" and "a friend of ours had a small business and started doing trades with other businesses and eventually he couldn't pay the person back and he went to the keno and pokies and tried to win and couldn't so he eventually sold his business to the other person."

When asked what differentiated a social gambler from a problem gambler, a number of responses were provided. For some the defining feature was the frequency with which one gambled, with problem gamblers perceived to always be at gambling venues. Comments reflecting this view included, "the person with a gambling problem would probably do it every night, a lot more than a social gambler" and "if they are there everyday at the pokies." Others described problem gamblers as having a preoccupation with gambling. This understanding of problem gambling was evident in comments such as, "I reckon a social gambler would be there more with friends and a social gambler would not be on the pokies but play other games likes cards where they can play with friends, not like pokies where they focus their attention on a machine and block everything else out", "a social gambler wouldn't have the attachment to the machine, thinking I have to go on it. Its all about the attachment, where they will go out to play the pokies and that would be their sense of fun. It is a problem if they go out because of the pokies", "a problem gambler has like an obsession and it's kind of a big part of their life" and "I think social is more like family or work, like footy tipping. It is not that your life depends on it. Whereas a problem gambler will always be interested in winning it."

Chasing losses was not only perceived to influence the development of problem gambling, but this behaviour was also perceived to differentiate problem gamblers from

social gamblers. Comments representing this perspective included, “a problem gambler keeps thinking they are going to win and they keep borrowing money and getting into more debt. They think they are going to win soon. But a social gambler kind of knows the odds are against them but they still do it for a bit of fun. So they go weekly and say with 20 bucks and put it on a horse or something. They don’t really expect to get it back, they know by now and they don’t get hooked on it and they could stop” and “A social gambler maybe goes every couple of weekends with some mates or gets a card table out and plays a few hands. But for a problem gambler it will become part of their life where they will look to be able to play again, and they won’t know when to stop and cut their losses and give up, they will keep doing it and keep going for the big win and the rush of a really big win. And the feeling that it will all work out if I get this big win.”

In addition, problem gamblers were perceived to lose large sums of money or even need to borrow money. Comments reflecting this view included, “They get their pension out and just go and put it all on the pokies and always whine they don’t have enough. And try and borrow off everyone to go back and gamble more”, “people might ask you for money”, and “the person we know lost their house and was homeless for a while.”

Other respondents still recognized that it was often difficult to tell a problem gambler from other gamblers, reflecting the understanding that problem gambling often goes unnoticed by the people around them until the late stages. Comments to this effect included “you can’t really tell”, and “someone playing pokies at 4 a.m. by themselves but apart from that you can’t really tell. Same with people with a drinking problem. A lot of us still live at home, and we are not on the streets so you can’t really tell until it becomes really apparent.”

5.10 Would Young People Seek Help for a Gambling Problem?

The younger respondents indicated that they would seek help if they had a gambling problem. However, those interviewed had a limited awareness of how to go about seeking help. The majority of respondents indicated that they would go to a friend

for help. This has implications for social marketing campaigns such as Friends4Friends which encourage young people to look out for signs their friends have a problem and offer advice as to where they can seek help.

Several respondents also indicated that they were aware of the Gambler's Helpline. However, while several respondents knew there was a telephone help service available, many were unable to name the service correctly, making reference to "the gambling line", "the help line" and "the quit line number". One respondent also commented, "I kind of know because it is on the TV but not as much anymore I don't think. But they used to have if you had drinking or gambling problems they would have like a quit line number and stuff and you could get packs."

Some respondents also indicated that they would seek help from family or parents. However, some directly opposed this notion claiming, "but if you told an adult that you didn't really know that well they could get really angry at you" or "if you told their parents first you might lose a really good friend over it". However, this latter respondent also commented, "but then you might realise later on in life that you did the right thing for him or her. Then they will come back."

When asked what they would do personally if they believed a friend had a gambling problem, mixed responses were provided. Some respondents indicated that they would try to distract their friend. This idea was reflected in comments such as, "I would talk to them and try and get them away from gambling, show them, distract them from gambling, distract them with something else", and "I'd show them there's more to life than gambling". Other comments to this effect included, "I'd take them to places where there isn't gambling- if you're older you wouldn't take them to a pub where there are pokies everywhere" and "You would go to a park or a sports game where there is no chance for you to gamble. And you make them feel good and say if you went to the pokies last week you could have lost this and now you wouldn't have this new dress or necklace or new shoes."

Other respondents believed a more proactive approach was needed and that it would be important to get them outside help. This view was evident in comments such as "I'd tell them about the gambling hot line" and "if my friend had a gambling problem I would probably try and get them help. I know it would be wrong to tell but I would probably tell their parents. So they could get them help if they needed help and it was a major problem for them."

Others still believed that a priority would be to help them recover from their financial losses. Comments to this effect included, "I'd try and win the money back" and "I'd try and help them rebuild their lives from all of the money they had lost."

In addition, there were several respondents who did not comment on this question and others who were only able to provide a vague description of what they would do. For example, one respondent claimed, "you would try and help them out, like about gambling".

The year 11 and 12 respondents also indicated being willing to seek help for a gambling problem. The respondents in this group were again aware that a telephone help service was available, but there was still some confusion over the name, with the gamblers helpline referred to as "the gambling hotline". They provided a greater awareness of the various help services available and were more inclined to draw upon professional help services such as counsellors, rather than trying to solve the problem themselves. This implies a greater understanding of the severity of gambling addiction. However, some respondents felt a combination of both formal and informal help would be appropriate. For example, one respondent commented, "You may have to be subtle about it and intervene, and say 'what are you doing, look how much money you have lost already'. Maybe try and help him yourself then try and send him to a counsellor or something like that."

Respondents in this group also perceived that it was important that a young person's parents be told if they had a gambling problem. However, they also showed a

greater maturity in how they would go about this process. For example, one respondent commented, “I would ask them if they had told their parents. If they didn’t have a good relationship with their parents, I’d suggest I could help them or be there when they told their parents.”

The year 11 and 12 respondents also indicated being aware of how to inform themselves. For example, one respondent claimed, “I work at Glenelg in a pub and they have brochures and cards about gambling, in the toilets as well. If you wanted to quit you could pick up one of them and no one would know.”

5.11 Exposure to TV shows Involving Gambling

The year 8-10 respondents interviewed indicated that they had watched a number of TV shows that involved gambling. Some of the programs listed included, “celebrity poker”, “joker poker”, “World blackjack tour”, and “world poker tour”. In addition to the gambling TV shows, respondents were also able to identify a number of other programs that featured gambling. These included “Deal or no deal”, “The Simpson’s”, and “Quiz mania”. One respondent indicated, “you see gambling in cartoons even”. This suggests that youth are not only watching gambling TV shows, but also that they are alert to gambling appearing in other more main stream TV programs.

The response to such TV shows was quite mixed. While some described them as “alright”, the majority described the shows as being “pretty boring”. However, despite perceiving the shows to be boring, the majority of respondents indicated believing that they encouraged people to gamble. One respondent commented, “Yeah, they’re like, look at what these people have just won so you think ‘I want to win money’.” A further respondent believed that the programs “probably but not intentionally” encouraged people to gamble. Others, however, did not believe that gambling TV programs encouraged them to gamble. This perspective was apparent in statements such as, “Sometimes there’s celebrity poker but like it doesn’t encourage me but I’ll sit there and watch the comedians or whatever you like.” A further respondent commented, “It’s like

you don't exactly walk away from watching a T.V show and go 'oh I want to go gamble, oh I want to play poker'."

Those respondents who did believe that the TV programs encouraged real life gambling were able to provide some insight into how this occurred. For some it was because the TV programs visually presented the winnings. For others, it was because the shows only showed the wins and not the associated costs. One respondent commented, "It might not look like they ran out of money." A further respondent believed the programs "make it look easy". Others elaborated on this point, indicating that the shows educated young people about the rules of the games and gave them a greater understanding of, not only how to play, but also how to play well. Several respondents indicated that having watched such shows, they felt they had an improved understanding of games like poker and felt they were skilled enough to play when they became legally old enough.

Only one of the older respondents indicated that they had not watched any TV shows involving gambling. Of those who had watched a TV gambling show, the majority indicated that they had seen celebrity poker. Comments to this effect included, "celebrity poker, it is entertaining", "the celebrity one because what they say is funny, I don't watch it for the game I watch it for the entertainment value" and "I know there is a series with celebrities." Other responses included, "joker poker", "World tournament poker", "world poker tour", "Joker poker with comedians", "late night poker on SBS" and "world poker tournament." In addition, when asked if they had watched any TV shows involving gambling, two respondents answered with the TV game show, Deal or No Deal.

Although most of the respondents had watched the shows, they tended to perceive them in a negative way. Comments reflecting a negative impression of TV gambling shows included, "I don't mind watching but they are a bit boring. I am not winning money though" and "I got a bit of a negative feeling because they made it look like glitz and glamour". A further respondent indicated that the shows themselves were uninteresting, but that gambling in real life was likely to be more exciting. This

respondent commented, “I find that poker on TV bores me, I don’t find it interesting at all. But I suppose playing it is more interesting than watching it. I find that with all sport.”

Despite having predominantly negative views about the shows, many respondents felt that the shows encouraged them to gamble. Comments to this effect included, “You can probably watch and think I can do a lot better than them and I could win that” and “it does encourage you to play poker but I am too young to try it and get into casinos. So me and a few mates will play a bit of poker every now and then. I have never really lost that much money. I have won once or twice. I usually just spend it anyway, it’s not much when I do lose.” Other respondents agreed that the shows encouraged them to experiment with gambling, even if not in formal gambling venues or for real money. Comments to this effect included, “I have watched the world poker with my dad and brother but it hasn’t really ever encouraged me to go out and gamble, but we have played cards with no stakes. But it hasn’t really encouraged me to wager any money.”

In addition, several respondents drew attention to how the shows taught people how to gamble, thus making them more likely to try gambling themselves. Comments to this effect included, “you’ll do better because you’ll know more about the game” and “I learnt how to play Texas hold em.” In addition, one respondent commented, “they play professionally so you can see how the game is meant to be played. It is good to watch, like any other sport almost to see how to play. It can actually make you think, you want to go or maybe we will have a game next weekend because you see how they play and it looks like fun.”

5.12 Gambling on the Internet

The vast majority of year 8-10 respondents reported having little experience with Internet gambling and only a couple of respondents indicated that they were aware of someone that had tried gambling on the Internet. One respondent indicated being aware of a couple of gambling sites (“I know a couple, Party poker.com and WPT online”).

However this respondent also indicated that they were unaware of what the site offered commenting, “I don’t know, you have to be 18 to sign up to play it”.

Although most of the individuals had little experience with Internet gambling, several acknowledged being aware of gambling advertising on the Internet. Many respondents indicated that they had previously encountered pop-ups advertising links to gambling sites. However, the respondents also felt that these pop-ups did not encourage them to gamble, and rather, felt that it put them off as they found the pop-ups to be annoying.

Despite having little experience with Internet gambling, the respondents raised the idea that there were several “kid” equivalent sites that they likened to gambling, for example, Ebay, (“as you end up going higher and higher with your bids”). An additional game in this category was Tazo. One respondent described, “I have payed to play this game, I had to buy credit to play, but it wasn’t a gambling game. It was so you could buy furniture and stuff in this game.” This respondent indicated that his father set him up an Internet account to allow him to play. Other respondents familiar with this game commented, “It was advertised everywhere and you could get free credits, but you don’t really have to pay. You don’t really have to buy it.” A similar game identified was Neo Pets- a game where you earn points that can be used to buy your pet a better life. However, when asked if such programs encouraged kids to learn about gambling, the respondent commented, “I don’t know if the kids that are playing are too worried about what they are doing. But sometimes I think it can affect them.”

The majority of respondents in the older group were aware of Internet gambling sites, but had not personally tried this form of gambling. Responses indicating awareness of Internet gambling sites included, “yeah but they are dodgy”, and “I’ve seen this one site with these two teenagers and they were just filthy rich with computers and cars and stuff that was purely from online gambling. My mate showed it to me, and all the possessions they had was just crazy purely through the net. And some guy just won $5000 like that.” Other comments indicating awareness without personal involvement

included, “I haven’t personally, I wasn’t even aware that you could. I suppose it’s possible if you go to the TAB on the internet or something” and “I know there’s like footy tipping and competitions on the Internet, but I’ve never done it personally.” In addition, several respondents indicated knowing someone who had participated in Internet gambling, for example, one respondent commented, “I never have but I know someone.” A further respondent commented, “You hear stories all the time. I mean you aren’t losing money but you have to give them your credit card and they don’t ask for ID or anything. One of my friends reckons he has played strip poker tour.”

Several respondents indicated that pop ups had alerted them to the existence of Internet gambling sites and incentives for playing. For example, one respondent commented, “A lot of the Internet ones will entice you. You will be on a page and a pop up will come and will be like, play this game and get a free ring tone with you phone or something. So you play the game and get the ring tone.” A further respondent commented, “Basically, a thing will pop up on the screen and say play poker and you can win a trip to Hawaii, or answer these questions and get a ring tone. It is just random games and random prizes. But if you win once, obviously if you win once people are going to try again for more, because people are naturally greedy.”

Incentives appeared to be a reason as to why young people engaged in Internet gambling. For example, one respondent commented, “once you get to a certain amount of things you can cash them in for stuff.” A further respondent commented, “There are things like join now and get 10 free bucks or 10 cents extra on what you buy. And you go wow that would be quite a bit wouldn’t it.” However, boredom appeared to be the most popular reason as to why young people engaged in Internet gambling. Comments to this effect included, “it is just when there is nothing on TV or whatever or we are bored and waiting for the weekend, that sort of thing” and “we play on weekends, just whenever we are bored.” Others drew attention to the addictive nature of Internet gambling. For example, one respondent stated, “it is even worse than card games because you can play on three tables at once. And some people must play three tables at once and pour their cash in. Sometimes you get really big returns but it’s just crazy and you couldn’t do that

in a real card game. You don't even have to wait between shuffles and deals." A further respondent who was not playing with real money commented, "you can stay up until three o'clock in the morning and play it. And you get onto the computer and say I am going to play poker, like it's a real game. It shows how addictive it can be."

Several other respondents reported gambling on the Internet without real money. Comments to this effect included, "I gamble with the games that I have got on the computer", " but on the Internet it is not real money, it is like fake", "yeah but not with real money", " Like a poker game where you place fake bets and stuff" and "yeah but not with real money though. You can play with play money." In addition, a further respondent commented, "It's just a poker site and there's also blackjack but I don't play that. And there's like a play money section but you are meant to be 18. But you disregard that because you know you are not going to play with real money, and you are not supposed to have a credit card before you are 18 anyway." This demonstrates how many young people are experimenting with gambling in a way that could easily progress to legitimate gambling with money.

In addition, some respondents indicated that they had already tried Internet gambling despite being underage. For example, one respondent explained, "yeah I used to put bets over the Internet but you only give them the number from your credit card and your details." This same respondent indicated using his parent's credit card to do so commenting, "you just get it if your parents go outside." However, this same respondent indicated that, "they would probably find out." A further respondent described playing party poker with a virtual table commenting, "Me and my friend got his dad's credit card because his dad had an account on the thing. And you win the money on the Internet and get credit on your credit card and you either cash it in or leave it on there." This same respondent then described replacing the money taken from his friend's father's account so he wouldn't notice and continuing play with the remaining credits ("then you can put 50 back"). This respondent also described, "I won some and lost some. Got down to about 20 and then got up to 200. And back down to 150, got a couple of games. So even if you get down to a 100 you have still got more". However, it is unclear what they would

do if they did not regain the original fifty dollars and it highlights how easy it would be to lose a significant amount of money via chasing losses.

5.13 Nature and Effectiveness of Responsible Gambling Messages

The younger respondents interviewed were aware of a number of responsible gambling messages. The respondents described various responsible gambling commercials such "Those ones about the gambling helpline where the man lost his family and stuff", "That ad with the lady at the checkout and she's like 'I can't believe you went gambling' and gets angry at him", and "The one where the guy comes home from the TAB and the wife is leaving him. And he looks like crap because he's heaps tired from gambling. Then he calls that gambling hotline and they help." Others indicated having seen responsible gambling TV commercials, but were only able to provide a vague description of them. For example, "The one where they can't face their problems". A further respondent described, "I saw an ad on TV about how gambling affects kids lives." When asked if they could describe what happened in this commercial, the respondent commented, "Not really, but I just remember seeing it."

The respondents appeared to be less familiar with responsible gambling messages in print media. When asked if anyone had seen any posters or signs, the respondents commented, "You might see them around but not that often", "You see other kinds of advertising more than gambling" and "There are a few little posters around that have the gambling hotline on it." One respondent commented, "Sometimes there are posters up in restaurants, saying think before you gamble." A further respondent identified being aware of "ads for gambling help line."

When asked to comment on whether the responsible gambling messages were perceived to be effective, the responses were largely pessimistic. This view was reflected in statements such as, "I don't think they work", "you know they don't even listen to the ads", "Most people don't pay attention to them" and "you could be really bad and keep going but they might think it doesn't mean it is going to happen to me." One respondent commented, "Something like stop gambling doesn't really draw any attention. But if you

see that sad story you can realise what is happening more and what you can lose." This respondent indicated that using "real life people" made them more easy to relate to; however, others believed, "I think just because it has real life people in it, it won't stop people from gambling." An additional respondent stated, "I don't think it would work for gamblers anyway, because they don't think about that sort of stuff." However, others held differing opinions. For example, one respondent believed, "Some might if they really did have a problem. But for people like us, it doesn't really affect us because we don't. But if they do they might pay attention to it."

Although the majority of respondents queried the effectiveness of current responsible gambling messages, some were more optimistic. This view was evident in statements such as, "When you look at them you sort of think about it and go 'thank god that has never happened to me' or 'I hope that never happens to me'", "I think it really works for people that don't have a gambling problem" and "You sort of go 'oh wow I hope that never happens to me'". From these statements, it appears that those interviewed perceived the ads to be effective for those who had not yet developed gambling problems, but questioned how effective they were for problem gamblers.

In light of how poorly the existing messages had been perceived, respondents were asked to describe how they believed the messages could be made more effective. The majority of respondents indicated perceiving TV advertising to be more effective than other forms such as radio or print media. However, other suggestions included, "You could have a lot of stuff on the computer like pop ups", "gambling pop ups against gambling" and "I was thinking maybe during a football game or something you could put up a sign to say stop gambling". A further respondent commented, "Yeah or they could get people's attention at cricket games".

Other suggestions included alerting people's attention to the consequences of gambling. This idea was expressed in statements such as, "they should show the bad stuff", "all the stuff that happens when you don't win, and you keep gambling. Or else you have to gamble the house and everything" and "showing that yeah down the track

you go bankrupt". Others felt that a better approach would be one that informed people of the true odds of winning. For example, one respondent commented, "You want to know a bit more about how poker machines or whatever work." Others still suggested that the responsible gambling message should apply learnings from similar campaigns such as those relating to smoking. Comments to this effect included, "I think they should have, like what they do with smoking packets, something that says, 'You are going to lose'" and "I guess with the smoking ads they are disgusting and you don't really want to see it because it makes you sick." A further respondent elaborated on this point claiming, "you remember it, what it's about."

A strong opinion expressed by respondents was that they would respond well to messages featuring real world people that they could relate to. This perspective was reflected in comments such as "reality ones do work better than the ones that say you could lose it all", "Some people won't think that it could happen to them so the reality ones work better" and "you could make a true story". One respondent in particular commented, "What works for me is if it had a family picture and they were all happy. Then they showed them starting gambling and back in the picture there was a person missing, because the family broke up." However, while some felt they would respond to everyday images, others still indicated that using a famous person would have a bigger impact. One respondent in particular commented, "yeah I play netball so someone that played netball would work well."

The year 11 and 12 respondents were aware that responsible gambling messages existed. Examples provided included, "I think at the end of gambling ads it says gamble responsibly, I don't know", "Um, 'Gamble Responsibly'", "I know they have one- think of what you are really gambling with", and "The government, they put the ads out. They have this big ad on gambling and at the end of it 'Gamble Responsibly'." In addition to TV advertisements, young people were also aware of responsible gambling messages in print media. For example, "you see on a lotto ticket in Australia in small print to gamble responsibly", "Well a lot of TAB's have messages like 'gamble responsibly' and they make people quite aware of the possibilities", "that one with a guy gambling and it has

like 10 different languages underneath up in the walls of pubs" and "there is always the stickers in the pubs."

However, while some respondents were able to identify the particular catch phrase used in the various forms of advertising, they did not appear to understand the underlying message. Rather, only surface level descriptions were provided. For example, one respondent commented, "A lot of those ads, like the government try to warn people, such as the one where the women goes shopping and her credit card is not working and she realizes her husband has a gambling problem." In addition, a further respondent commented, "yeah there is always commercials on like the one where that woman goes to pay for her groceries and her credit card is declined. That is on a fair bit." For these respondents, the primary aspect of the advertisement they recalled was the lady's credit card being declined, not that gambling can have a negative impact on your life and that you are not just gambling with money, you are gambling with your life and your family.

Others had only a vague awareness that responsible gambling messages existed. Comments to this effect included, "the gambling ad", "Yeah just the gambling hotline telling you to be responsible" and "we have the gambling help line but I don't think you pay much attention to it. But I don't know anyone with that kind of a problem I don't think. I hadn't seen anything other than that really."

This view aligns with the responses provided that drew attention to the questionable impact these messages had on young people. Comments suggesting that young people did not perceive the messages to be effective included, "some of them are out there, it's just whether they have any impact", "as we said, it is said really quickly after the gambling ads and in really small print", "obviously it is just a cop out and they have it in tiny writing and some guy saying, like, it is not even the main part of it. Yeah gamble, but do it responsibly" and "it's normal, you don't think about it because you hear it so much. You don't even realize what they are saying".

However, the older students were able to provide a number of suggestions as to how to make these messages more effective. One suggestion was that they would like to be presented with more factual information about the likelihood of winning and the prevalence of problem gambling. Comments to this effect included, "The possibilities and statistics, saying yeah, that's a whole load of mumbo jumbo", "It would be interesting to know how many people actually have gambling problems. Like out of 10 how many have gambling problems" and "if I heard that, randomly like 8 out of 10 people in a certain age group that I was in had a gambling problem then it would probably stray me away from doing it. Like I might do it once or twice but I wouldn't do it too often because I'd be afraid of getting the same thing, and I wouldn't want that to happen to me." A further respondent commented, "you can have, like in X-lotto, the odds of winning, which is in really fine print at the bottom. If that was more prominent when you read 'this scratchie cost $2, there is a 1 in 200,000 chance of winning over $5' then you would think is that really worth doing? But that isn't very good for business."
In addition, a further respondent felt that the real odds of winning had to be emphasized in a more obvious way. This respondent commented, "it actually does say the odds, it's 1 in 142,000 down the bottom of the screen but they need to do it bigger."

Other suggestions included, "a cool ad. An ad that grabs your attention" and "something about not gambling, not gamble responsibly." A further respondent commented, "I think the message should be that it does have a rush. You can be enjoying it while you are winning but when you lose look at the effect, it's terrible. It is an addictive thing. You can play it safely but once you have too much and then you just can't stop." A further suggestion along these lines included, "Like the drinking ad as well. It says drink in moderation or real Australians drink in moderation."

Others still felt that no matter what the message was, it may still not impact on people's behaviour. For example, one respondent commented, "You can try as hard as you want to try and tell someone that gambling is a risk and that you can't always win but the message doesn't get across and they have to figure it out for themselves." A further respondent commented, "the individual should pay attention, the government would need

to do the advertising and the parents of the person would need to tell them about it, but sometimes they just wont take it in. So there's always going to be one person who blocks it out."

5.14 Discussion

5.14.1 Understanding of Gambling

Many of the younger students correctly identified gambling as a risk-taking activity where one often lost money, and where there was the potential to lose control or even develop an addiction. However, when asked to describe what gambling was, many of the younger students struggled to identify conceptually what made something gambling. Instead, they tended to define gambling only by giving examples of different gambling activities. For the older respondents, gambling was largely understood as an activity that was potentially addictive and something involving risk. These respondents were able to name a wider range of gambling activities than the younger group, but also only displayed a superficial knowledge of what gambling was. Although they appeared to understand gambling as something with the potential for negative consequences, students did not generally draw attention to the important role of chance, or the uncertainty of outcomes.

5.14.2 Young People's Understanding of Risk

Nevertheless, when asked more broadly what it means when someone says gambling is "risky", students appeared to understand the importance of this concept. The responses provided by the year 8-10 students reflected two central themes: (1) The perception that risk is associated with uncertain outcomes and, (2) The idea that risk means there may be negative consequences. Discussions around risk also elicited the idea that there were different levels of risk in gambling. Younger students believed that a number of factors made various forms of gambling more or less risky, for example, being more skilled than your opponent. On the other hand, responses from the older group revealed a more elaborate understanding of risk. For these respondents, gambling was

viewed as risky because one could lose, because it was difficult to win, and because of the risk of becoming addicted.

5.14.3 Understanding of 'luck' and 'chance' Activities

Most respondents in the younger group had difficulty providing a clear understanding of the terms 'luck' and 'chance'. The most popular response from individuals was in fact that they did not know. Moreover, those participants who did respond were only able to demonstrate a vague understanding of the concepts. Similar confusions were revealed when several respondents indicated that luck and chance were essentially the same thing. In contrast, the year 11-12 respondents showed a more advanced understanding of luck and chance as compared with the younger group of respondents. For this group, luck and chance were described quite differently and were not considered to be identical concepts. For some, luck was believed to be something that could be acquired by performing rituals or obtaining objects, and that this could influence one's chance of winning. For others, luck was associated with having no control over outcomes. In turn, chance was correctly understood as a mathematical concept that indicated the likelihood of either winning or losing.

In other words, among younger students aged 13-14 years, luck and skill are seen as synonymous concepts, whereas a greater differentiation of the concepts begins to occur by the end of 16 and 17. These differences may possibly be due to greater sophistication in mathematical knowledge (concepts such as chance are usually taught from Year 10 onwards in many mathematics curricula) in older students, but may also reflect a growing sense of personal mastery over outcomes and events. Older students may come to see luck as a meaningful force that can be influenced by taking the right cause of action, engaging in certain rituals, or through alignment with higher forces (e.g., as people do when they engage in prayer, when they do things to avoid bad luck).

The respondents were asked to indicate whether gambling was different from other games they played and if so, how. The majority of the younger students felt that gambling was distinct from other games they played such as video games, monopoly and

darts. However, they had difficulty explaining exactly why this was so beyond the obvious reason; namely, the use of real money. Accordingly, in order to gain further insights into young people's understanding of gambling and how it differs from other activities, the respondents interviewed were asked to comment on whether running a business was just like gambling. The responses by the year 8-10 students to this question were mixed with slightly less than half of those interviewed agreeing that gambling was like running a business, and a similar proportion arguing that the two activities were distinct. A further group still believed that the question could not be answered in such black and white terms, instead arguing that there were both similarities and differences. Respondents who felt running a business was like gambling justified this by drawing attention to two common themes; that the outcome in both gambling and business was often uncertain and also that both may involve losing money. Respondents who disagreed with the idea that running a business was like gambling justified their stance by acknowledging that business often provided returns, running a business involved hard work, and because running a business was seen as more of a conscious, thought out choice of activity than gambling.

In contrast most of the year 11-12 respondents perceived these two activities to be quite different. Although this differs from the view of the younger groups who were more open to considering the similarities between starting a business and gambling, the reasons why the activities differed were quite similar. The only difference was that older respondents also argued that a business involved skill, whereas younger students made no mention of this factor. Although a smaller proportion of the older respondents were able to identify similarities between gambling and business, those who did again justified this stance by drawing on two central themes: (a) That the outcome in both gambling and business was often uncertain and (b) That both may involve losing money. Once again, both groups did not quite capture the fundamental factors; namely, that gambling is designed to have an inevitable element of chance, the outcomes are designed to prevent players from making a long-term profit, and that one usually cannot improve one's performance using practice.

5.14.4 Perception of Skill in Gambling

Although the majority of younger respondents indicated believing that there was no skill involved in gambling apart from cheating, a significant proportion of respondents still reported that you could become good at gambling. In addition, many did so without further clarification that you could only get good at certain forms of gambling, implying the belief that one can become good at all types of gambling. However, some respondents were able to qualify that one could get better at only certain forms of gambling, in particular, card games such as poker and blackjack. However, other responses included sports betting, horseracing and football tipping.

The majority of the respondents in the older group identified certain forms of gambling as containing some elements of skill (e.g., poker, horse-racing, football tipping), whereas others were seen to be completely random or chance determined (e.g., keno, bingo or poker machines). Once again, the most common response was that one could be skilled at card games. The older respondents also believed that knowledge of the game, bluffing, being able to read people, cheating or counting cards or a general sense of skill or improvement over time were the factors that enabled one to become skilled at card games.

In other words, while many students had a reasonable understanding of the potential role of genuine skill in gambling, and that not all types of gambling were the same.

5.14.5 Involvement with Gambling

Across both groups, only a handful of students reported that they had never before tried gambling. The students indicated having tried a similar range of activities. However, the older students were more likely to have tried poker machine gambling than their younger counterparts, although this form of gambling was not likely to occur at a casino. Among the younger respondents, the vast majority who had tried gambling indicated having done so with their families. Young people reported gambling on instant scratch tickets, bingo, and keno with the help of their mothers, while betting on horses and sports betting had tended to be undertaken with their fathers. Card games such as poker had often been popular family activities and a vehicle through which young people had learned the rules of the game. Among the older respondents, those who indicated gambling on horse races often gambled on major racing events such as Melbourne Cup or Oakbank racing carnival. The responses indicated that this type of gambling is quite common and acceptable among young people, and also, that it is something that is often down with family, particularly with fathers. While some of the older respondents had engaged in instant scratch ticket gambling with family, others seemed to be buying instant scratch tickets on their own. In addition, although this form of gambling has been legalized for the majority of respondents in this group, several indicated that they had been gambling while underage with the help of their parents. Gambling on card games was the most popular response among the older respondents interviewed. The majority of these respondents indicated playing poker in particular, which was usually played with friends for enjoyment

These findings taken as a whole reinforce how gambling is often considered to be socially acceptable for young people, and that parents often play an important role in exposing young people to gambling. The findings highlight the need to engage parents, in addition to young people, in public awareness campaigns and educational initiatives that aim to reduce gambling among adolescents.

5.14.6 Access to Commercial Gambling Under the age of 18

The majority of younger respondents indicated that they did not know anyone who had played the pokies or got into the Casino when they were not yet 18. In addition the younger respondents tended to believe that the enforcement of age restrictions were strict enough at present. However, several of the year 11 and 12 respondents indicated knowing someone who had played the pokies or got into the casino before they were 18. These respondents acknowledged that checking proof of age at over age venues was not always systematic and that youth who appeared to be over 18 often were not asked to produce identification. In addition, some respondents indicated that "fake IDs" were sometimes used to gain access to gambling in venues.

5.14.7 Why Young People Gamble

When asked why they thought young people gambled, the most popular response made by the year 8-10 students related to money. This view was evident on responses such as, "they want to get richer". The second most frequent reason for why young people gambled was "for fun". Peer pressure was also mentioned several times as a reason why young people gambled. The older individuals provided a range of reasons regarding why they believed young people gambled including for the chance to win, the adrenaline, because you're not meant to, because it's cool or fun, peer pressure, family influence, and out of boredom. On the whole, these motivations do not appear to differ from those commonly observed in adult populations.

5.14.8 How Problem Gambling Develops

The younger people interviewed had little understanding of how some people developed problems with gambling. However, despite possessing a limited understanding of how social gambling could progress to problem gambling, the respondents interviewed were able to identify a number of factors which they believed differentiated problem gamblers from social gamblers. These included having a greater desire to win money, spending a significant amount of time at gambling venues, being low on cash or having to borrow money, thinking differently about gambling and having less control over their gambling. This suggests that young people are aware of the consequences of problem

gambling, but hold little understanding of the potential for social gambling to escalate into problematic behaviour.

The older group suggested a number of pathways by which people may develop problems with gambling. For some, the increased availability was perceived to contribute to people developing problems with gambling. For others, problem gambling was perceived to develop out of boredom, or the absence of other social avenues. Others still perceived an addictive personality caused gambling problems. Other factors included a need or desire to win, the influence of early big wins and the predominant means by which problem gambling was perceived to develop, via chasing losses. Similar factors were perceived by the older group to distinguish social and problem gamblers; however, some of the older respondents were also able to recognise that it was often difficult to tell a problem gambler from other gamblers, reflecting the understanding that problem gambling often goes unnoticed by the people around them until the late stages.

5.14.9 Would Young People Seek Help for a Gambling Problem?

The younger respondents indicated that they would seek help if they had a gambling problem. However, those interviewed had a limited awareness of how to go about seeking help. The majority of respondents indicated that they would go to a friend for help. Several respondents also indicated that they were aware of the Gambler's Helpline. However, while several respondents knew there was a telephone help service available, many were unable to name the service correctly. Furthermore, when asked what they would do if they believed a friend had a gambling problem, a popular response related to finding ways to distract their friend, rather than acknowledging the need for outside help. In addition, there were several respondents who did not comment on this question and others who were only able to provide a vague description of what they would do. This reinforces the need for increasing young people's awareness of the various avenues of help available to them.

The year 11 and 12 respondents also indicated being willing to seek help for a gambling problem. The respondents in this group were again aware that a telephone help

service was available, but there was still some confusion over the name, with the gamblers helpline referred to as “the gambling hotline”. Compared to the younger respondents, they also provided a greater awareness of the various help services available, and were more inclined to draw upon professional help services such as counsellors, rather than trying to solve the problem themselves. This implies a greater understanding of the severity of gambling addiction.

5.14.10 Exposure to TV shows Involving Gambling

The year 8-10 respondents interviewed indicated that they had watched a number of TV shows that involved gambling. The respondents also reported being alert to gambling appearing in other more mainstream TV programs such as cartoons like the Simpson’s. The response to such TV shows was quite mixed. While some described them as “alright”, the majority described the shows as being “pretty boring”. However, despite perceiving the shows to be boring, the majority of respondents indicated that they encouraged young people to gamble. The reasons for this view related primarily to the way in which the shows visually presented the winnings, and how they highlighted only the wins and did not show the associated costs. The shows also educated young people in the rules of the games and gave them a greater understanding of, not only how to play, but also how to play well. Several respondents indicated that having watched such shows, they felt they had an improved understanding of games like poker and felt they were skilled enough to play when they became legally old enough.

Only one of the older respondents indicated that they had not watched any TV shows involving gambling. Although most of the respondents had watched the shows, they tended to perceive them in a negative way, for example, describing the shows as uninteresting or boring. However, for several respondents, the shows were seen as boring or uninteresting relative to gambling in real life. Despite having predominantly negative views about the shows, many of the older respondents also felt that the shows encouraged them to gamble. Similar reasons were provided as the younger group, in particular that the shows taught you how to gamble.

These results suggest that such shows should include a more balanced emphasis on the risks of gambling, and that parental involvement in some young people's viewing may be useful to place the material within perspective.

5.14.11 Gambling on the Internet

The vast majority of year 8-10 respondents reported having little experience with Internet gambling and only a couple of respondents indicated that they were aware of someone that had tried gambling on the Internet. Although most of the individuals had little experience with Internet gambling, several acknowledged being aware of gambling advertising on the Internet. Many respondents indicated that they had previously encountered pop-ups advertising links to gambling sites. However, the respondents also felt that these pop-ups did not encourage them to gamble, and rather, felt that it put them off as they found the pop-ups to be annoying. Despite having little experience with Internet gambling, the respondents raised the idea that there were several "kid" equivalent sites that they likened to gambling, for example, Ebay, Tazo (you compete to buy furniture and physical possessions for the character in the game) and Neo Pets (a game where you earn points which you can use to buy your pet a better life). Neither of these sites were, however, genuine gambling sites where one could lose money, so that it is unclear whether these sites should create significant concerns for parents and policy makers.

The majority of respondents in the older group were aware of Internet gambling sites, but had not personally tried this form of gambling. Several respondents, however, indicated knowing someone who had participated in Internet gambling. Several respondents indicated that pop-ups had alerted them to the existence of Internet gambling sites and incentives for playing. Such incentives were viewed as a popular reason as to why young people engaged in Internet gambling. However, boredom appeared to be the most popular reason. Others still drew attention to the addictive nature of Internet gambling. Several other respondents reported gambling on the Internet without real money, thereby demonstrating how young people could experiment with gambling in a way that could easily progress to legitimate gambling with money. In addition, some

respondents indicated that they had already tried Internet gambling despite being underage. As individuals under the age of 18 are not able to apply for their own credit card, Internet gambling tended to involve illegally obtaining a family member's credit card or access to their account. This created a need to at least win back the money spent to elude detection, increasing the risk of losing a significant amount of money via the need to chase losses.

5.14.12 Nature and Effectiveness of Responsible Gambling Messages

The younger respondents interviewed were aware of a number of responsible gambling commercials; however, they did not identify the key intended messages (i.e., think of what you're really gambling with). The respondents were also largely unfamiliar with responsible gambling messages in print media. When asked to comment on whether the responsible gambling messages were perceived to be effective, the responses were largely pessimistic, although some of the respondents suggested that the ads may be effective for those who had not yet developed gambling problems.

In light of how poorly the existing messages had been perceived, respondents were asked to describe how they believed the messages could be made more effective. The majority of respondents indicated perceiving TV advertising to be more effective than other forms such as radio or print media. However, other suggestions included, using pop-ups on computer screens and using major sporting events to advertise. The respondents also perceived the hard hitting approaches to be more beneficial. This was reinforced by view that they should follow the lead of the recent smoking campaigns by making use of vivid images and the harsh negative consequences of gambling. Others felt that a better approach would be one that informed people of the true odds of winning. It was also considered important to include messages featuring real world people. However, while some felt they would respond to everyday images, others still indicated that using a famous person would have a bigger impact.

The year 11 and 12 respondents were aware that responsible gambling commercials existed and were also aware of responsible gambling messages in print

media. However, while some respondents were able to identify the particular catch phrase used in the various forms of advertising, they did not appear to understand the underlying message. Instead, only surface level descriptions were provided. For example, the primary aspect of the advertisement they recalled was more likely to be the lady's credit card being declined, rather than the idea that you are not just gambling with money, you are gambling with your life and your family. Others had only a vague awareness that responsible gambling messages existed.

This view aligns with the responses provided that drew attention to the questionable impact these messages had on young people. From the comments provided, it appeared that young people questioned how much impact a quick slogan telling people to gamble responsibly had. However, the respondents were able to provide some suggestions as to how to make these messages more effective. The respondents indicated that they would like to be presented with more factual information about the likelihood of winning and the prevalence of problem gambling. In addition, some respondent felt that the real odds of winning had to be emphasized in a more obvious way, rather than via small print.

Chapter 6: Summary and Conclusions

6.1 Overview

This study had two principal aims. The first aim was to obtain up-to-date indicative information concerning the prevalence and social context of gambling and problem gambling in South Australian adolescents. The second was to gain further insights into young people's understanding and experience of gambling; this included their understanding of odds, probabilities, their perceptions of gambling and how activities are promoted. Although this study only included a small number of schools and was not based on a random sample from the community, the very good response rates, the large sample size, as well as the inclusion of schools from different areas of South Australia provide some assurances that the findings provide an accurate view of adolescent gambling in South Australia. As with previous studies of this nature, the study provides very valid opportunities to compare the behaviours, perceptions and experiences of young people with varying degrees of gambling experience.

In interpreting the results of this study, it should be emphasized that adolescent prevalence research is challenging because it is well established from the international literature that adolescent results tend to be less stable and consistent than similar data collected from adults (Shaffer & Hall, 2001). To some extent, this may be a reflection of the different research methodologies or sampling strategies used to study gambling in adolescents (e.g., school studies vs. telephone surveys). However, adolescents may also be more likely to misinterpret questions, interpret questions in different ways, exaggerate in order to appear more adult-like, or try to give the responses which they think are expected (i.e., socially desirable responding). Nevertheless, even after taking into account these methodological difficulties and considerations, the results from this study allow some reasonable conclusions to be drawn about the nature of gambling in South Australian adolescents.

6.2 Prevalence and Changes Over Time

- Around 50-60% of adolescents (aged 13-17 years) gamble at least once per year. This rate is very similar to the rate obtained in 2001 and in other Australian surveys, but lower than the rate obtained by the Department of Families and Communities in a telephone survey in 2005.

- Around 60% of this gambling by adolescents is undertaken with their own money, whereas the rest is undertaken with the assistance of adults (usually parents). These results suggest that parents play a very important role in the uptake of gambling activities, but also suggest that the overall prevalence of independent gambling in adolescents is lower than the prevalence rate of 50-60% described above (i.e., only around 40% of young people in the population actually gamble and do so with their own money).

- Only around 5% of young people gamble on a weekly basis. This figure is similar to the figure obtained by the Department of Families and Communities in 2005 and significantly lower than the figure of 15% obtained in a similar school study in 2001. Taken together, these results suggest that relatively few young people in South Australia have a very strong interest in gambling. One possible reason for the significant decline in regular gambling is the growth in competing activities during the last 7 years; namely, the enormous growth in mobile phone expenditure (SMS texting, ring-tone downloads, mobile calls). Although no comparative data is available to confirm whether this explains the declining interest in regular gambling, it is likely that young people now have less disposable income to spend on gambling, and that mobile phone features are now a more attractive and accessible activity.

- There has been some modest increase in the number of young people gambling on card games (around a 30% increase), and that TV poker shows appear to have enhanced the popularity of this form of gambling. However, there has also been

since 2001 significant decreases in the percentage of young people gambling on lottery products (lottery, scratch tickets or keno).

6.3 Demographic Differences

- Boys are much more likely to gamble than girls and to experience problems with their gambling. Boys gamble on a wider range of products and also gamble for longer.

- Indigenous students are significantly more likely to be at risk of gambling-related problems than non-indigenous students.

6.4 Regulatory Issues

- Regulatory controls appear to be working well. Very few young people are gaining access to the Casino, or clubs or hotels to play gaming machines. Nevertheless, around 4% of the total sample reported having found some way to gamble at the Casino (this included 45 young people or 1.7% of the 13-17 year olds who had got in unnoticed or by using fake IDs). Around 6% appear to have used similar methods to gain access to clubs or hotels.

- Very few young people reported that they had gambled on the Internet.

6.5 Problem Gambling

- Around 2-4% of adolescent gamblers experience problems with their gambling, a rate which is over double the adult rate. However, based on the estimated amount being spent per session (usually only $10-20), it is likely that most of these problem gamblers are not experiencing significant financial hardship as a result of their gambling. The concern is only that these young people appear to have developed a pattern of gambling behaviour that may place them at serious risk of future harm, and the development of more serious gambling problems as adults.

6.6 Effects of Advertising

- There was some evidence that young people are attracted by the new range of TV poker shows and that some have been encouraged to gamble as a result of exposure to these programs. However, the influence of these shows appeared to be confined to only a small percentage of boys within the sample.

6.7 Links with Video-Game Playing

- There was very little evidence to support the view that video-game playing is an avenue by which young people come to be involved with gambling. In fact, the link between video games and gambling appears to be spurious. Boys are more likely to play video games and to gamble, so that when takes the effects of gender into account, no significant relationship between video game play and gambling will be found.

6.8 Young People's Understanding of Gambling

- Young people appear to have only a limited understanding of gambling odds, the concept of randomness, and probabilities. Although some of this lack of knowledge may be due to limitations in mathematical understanding or the students' current level of study (they may not have studied this area of mathematics), it is also clear that many young people do not know how difficult it is to win on lotteries and other similar activities.

- Young problem gamblers appeared to have a similar knowledge of gambling odds as other young people, but were more likely to hold various erroneous beliefs, including the view that one can use skill to improve one's chances of winning on poker machines and other chance-determined activities, and that certain outcomes, numbers of sequences of events on gaming machines can be used to predict when one is more likely to win.

- The focus group investigation showed that young people's understanding of gambling, risk and randomness was reasonably good, although, as might be

expected, older students (15-17 year olds) were able to comprehend and articulate these concepts better than younger students (13-14 years). One of the principal differences was that older students were better able to explain the difference between skill, luck and chance, and to illustrate how gambling differed from other risk-taking activities.

6.9 Conclusions and Implications

The principal policy implication of this research is that adolescent gambling remains relatively well controlled by existing regulatory frameworks. Relative few young people have a significant involvement in gambling, and very few experience any significant difficulties as a result of their gambling. However, the results provide clear evidence that problem gambling is a disorder that can develop during adolescence for a minority of young people (around 3-4%), and that interventions and services, as well as an ongoing research focus on adolescent gambling, remain important. Not only can this work lead to early intervention and prevention, but it may also prepare other young people who have not yet gambled to be more alert to the potential dangers of gambling when they become adults.

In terms of the services and interventions that might assist young people, the results provide support for the further inclusion of material relating to gambling in professional development programs for teachers, as well as the further use of educational materials that highlight the odds of gambling, and the risks associated with excessive gambling. The results, in particular, highlight the importance of showing how gambling differs from other forms of risk-taking, and the nature of the industry and how it makes money. Moreover, the results in this study confirm that the provision of cold factual information concerning the odds of gambling needs to be combined with additional instruction concerning the nature of various erroneous beliefs that young people hold about gambling, e.g., the possible role of skill in chance-determined activities, the lack of independence of gambling outcomes. Such material could be presented in a variety of forms, for example, through role-playing exercises, testimonials and videos involving

former problem gamblers, or interactive exercises and discussions that allow students to identify and analyse problematic logic or false beliefs.

The results also have implications for identifying young people who are most likely to be at risk of gambling problems during adolescence. Consistent with almost all previous studies, it was found that boys were significantly more likely to experience problems than girls, and that indigenous students were at greater risk than non-indigenous students. Previous studies by Delfabbro, Lahn and Grabosky (2005) as well as an extensive international literature have discussed the reasons why gender differences might exist. One reason is that boys have a preference for risk-taking activities because these are more socially acceptable amongst their peers. Another is that they tend to prefer gambling activities which are potentially more available during adolescence, including card games, sports-betting, and placing bets of races with the assistance of adults. Young women, by contrast, tend (on average) to commence gambling at a later age, usually only after they have turned 18, and their first experience with gambling during adulthood is often with EGMs rather than with more traditional betting activities (see Delfabbro & LeCouteur, 2006 for a review).

Presently, there is little information available to explain why indigenous students should have greater problems with their gambling during adolescence than other students. Further research is therefore needed to understand the extent to which this difference can be explained using a larger and more extensive sample of young indigenous students, where there is also an opportunity to obtain qualitative feedback from young people themselves to obtain their views concerning the role or function of gambling in their lives, and those of their community.

In South Australia, these findings will be used to inform the ongoing DECS Responsible Gambling Education Strategy 2007-2010. This strategy will examine the factors that contribute to gambling amongst young people as well as the role of gambling and problem gambling in close family members. Included in this strategy, will be a focus on the factors that contribute to particularly high levels of gambling and problem

gambling in indigenous students and young male students. The DECS strategy is based on the findings of the current report, but also the recent discussion paper produced by the Australian Gaming Council in conjunction with the University of Melbourne (*New Directions: Financial Literacy and Gambling Education for Young People*, 2007)). Both reports emphasise the importance of providing young people with basic information that assists them in making accurate decisions in relation to gambling, but which also enhances their ability to budget, set spending priorities, and avoid getting into debt.

Such an approach is also consistent with the DECS focus on "health literacy" in young people as well as the views of 2007 Adelaide Thinker in Residence, Professor Ilona Kickbusch in her recent book *Health Literacy: Towards an active health citizenship* (2006), who defines health literacy as the ability "to make sound health decisions in the context of everyday life- at home, in the community, at the work place, in the health care system, the market place and the political arena." (pp. 7-8) Such skills allow people to seek out appropriate information and to take responsibility for their actions.

To achieve the goal of enhancing young people's ability to achieve greater health literacy, DECS proposes the development of culturally appropriate curricula and teaching materials that enable young people to gamble responsibly and within their means. There will be ongoing professional training for educators to keep them informed of the emerging issues relating to gambling that may have an impact on each specific school community. It is envisioned that the development of this awareness, capacity or "social capital" within the school communities will occur through the development of activities or actions that are designed in context of the specific needs of each school community; for example, as might be influenced by its ethnic profile, teaching profile and structure, geography, or socio-economic status.

References

Abbott, M., McKenna, B. & Giles, L. (2000). *Gambling and problem gambling among recently sentenced males in four New Zealand prisons.* Wellington: Department of Internal Affairs.

Allcock, C.C., & Grace, D.M. (1988). Pathological gamblers are neither impulsive nor sensation-seekers. Australian and New Zealand Journal of Psychiatry, 22, 307-311.

Anderson, G., & Brown, R.I. (1984). Real and laboratory gambling, sensation-seeking and arousal. *British Journal of Psychology,* 75, 401-410.

Arcuri, A., Lester, D., & Smith, F. (1985). Shaping and adolescent behavior. *Adolescence*, 20, 935-938.

Babad, E., & Katz, Y. (1991). Wishful thinking-against all odds. *Journal of Applied Social Psychology*, 21, 1921-1938

Barnes, B.L., & Parwani, S. (1987). Personality assessment of compulsive gamblers. *Indian Journal of Clinical Psychology*, 14, 98-99.

Baron, E., Dickerson, M., & Blaszczynski, A. (1995). The scale of gambling choices: Preliminary development of an instrument to measure impaired-control of gambling behaviour. In: O'Connor, J. (Ed.) *High stakes in the nineties*, Proceedings of the Sixth Conference of the National Association for Gambling Studies, Fremantle.

Bartussek, D., Diedrich, O., Naumann, E. and Collet, W., 1993. Introversion extraversion and event-related potential (ERP): a test of J.A. Gray's theory. *Personality and Individual Differences,* **14**, 565–574.

Benhsain, K., & Ladouceur, R. (2004). Knowledge in statistics and erroneous perceptions in gambling. *The Journal of Psychology.*

Black, D.W. & Moyer, T. (1998). Clinical features and psychiatric co-morbidity of subjects with pathological gambling behavior. *Psychiatric Services,* 49, 1434-1439.

Blaszczynski, A. (1998). *Overcoming compulsive gambling.* London: Robinson Publishing.

Blaszczynski, A., & McConaghy, N. (1989). Anxiety and/or depression in the pathogenesis of addictive gambling. *International Journal of Addictions,* 24, 337-350.

Blaszczynski, A., & Nower, L. (2002). A pathways model of pathological gambling. *Addiction,* 97, 487-500.

Blaszczynski, A.P., & Steel, Z. (1998). Personality disorders among pathological gamblers. *Journal of Gambling Studies*, 14, 51-71.

Blaszczynski, A., Walker, M., Sagris, A., & Dickerson, M. (1997). *Psychological aspects of gambling paper*. Position paper prepared for the Directorate of Social Issues, Australian Psychological Society.

Blaszczynski, A.P., Wilson, A.C., & McConaghy, N. (1986). Sensation seeking and pathological gambling. *British Journal of Addiction,* 81, 113-117.

Brown, R.I. (1986). Arousal and sensation seeking components in the general explanation of gambling and gambling addictions. *International Journal of the Addictions*, 21, 1001-1016.

Browne, R. I. (1989). Going on tilt: Frequent poker players and control. *Journal of Gambling Behaviour*, 5, 3-21.

Burnett, J., Ong, B., & Fuller, A. (1999). "Correlates of gambling by adolescents". In J. McMillen & L. Laker (Eds.) *Developing strategic alliances: Proceedings of the 9th annual conference of the National Association for Gambling Studies* (pp. 84–92), Gold Coast, Queensland.

Carroll, D., & Huxley, J. (1994). Cognitive, dispositional and psychophysiological correlates of dependent slot machine gambling in young people. *Journal of Applied Social Psychology*, 24, 1070-1083.

Carlton, P.L. & Monowitz, P., McBride, H., Nora, R., Swartzburg, M., & Goldstein, L. (1987). Attention deficit disorder and pathological gambling. *Journal of Clinical Psychiatry*, 48, 487-488.

Chapman, L.J., & Chapman, J.P. (1967). Genesis of popular but erroneous psychodiagnostic categories. *Journal of Abnormal Psychology,* 72, 193-204.

Ciarocchi, J., & Richardson, R. (1989). Profile of compulsive gamblers in treatment: Update and comparisons. *Journal of Gambling Behaviour*, 5, 53-65.

Clarke, D., & Rossen, F. (2000). Adolescent gambling and problem gambling: A New Zealand study. *New Zealand Journal of Psychology*, 29, 10-16.

Corless, T., & Dickerson, M. (1989). Gamblers' self-perceptions of the determinants of impaired control. *British Journal of Addiction*, 84, 1527-1537.

Coulombe, A., Ladouceur, R., Desharnais, R., & Jobin, J. (1992). Erroneous perceptions and arousal among regular and occasional video poker players. *Journal of Gambling Studies,* 8, 235-244.

Corney, W.J., & Cummings, W.T. (1985). Gambling behaviour and information processing biases. *Journal of Gambling Behaviour,* 1, 111-118.

Coventry, K. & Norman, A. (1998). Arousal, sensation seeking and frequency of gambling in off-course horse racing bettors. *British Journal of Psychology*, 88, 671-681.

Custer, R.L., & Custer, L.F. (1978). *Characteristics of the recovering compulsive gambling. A survey of 150 members of Gambler's Anonymous*. Paper presented at the Fourth Annual Conference on Gambling, Reno, Nevada (December),

Delfabbro, P.H. (1998). A psychological investigation of gambling in South Australia: with particular reference to the demographic, behavioural, and cognitive factors underlying poker/slot machine gambling. PhD Thesis, University of Adelaide, South Australia.

Delfabbro, P.H. (2004). The stubborn logic of regular gamblers: obstacles and dilemmas in cognitive gambling research. *Journal of Gambling Studies,* 20, 1-21.

Delfabbro, P.H., Grabosky, P., & Lahn, J. (2005). *Adolescent gambling: A report on recent ACT research*. Canberra, ACT Gambling and Racing Commission.

Delfabbro, P.H., Lahn, J., Grabosky, P. (2005). It's not what you know, but how you use it: Statistical knowledge and adolescent problem gambling. *Journal of Gambling Studies.*

Delfabbro, P.H., & Le Couteur, A. (2003). *A decade of gambling research in Australia and New Zealand (1992-2002): Implications for policy, regulation and harm minimization*. Independent Gambling Authority of South Australia.

Delfabbro, P.H., & Thrupp, L. (2003). The social determinants of gambling in South Australian adolescents. *Journal of Adolescence*, *26*, 313–330.

Delfabbro, P.H., & Winefield, A.H. (1996). Community gambling patterns and the prevalence of gambling-related problems in South Australia: with particular reference to gaming machines. Adelaide: Department of Family and Community Services.

Delfabbro, P.H., & Winefield, A.H. (1999). Poker machine gambling: An analysis of within session characteristics. *British Journal of Psychology*, 90, 425-439.

Department of families and Community Services (2007). *Gambling patterns in South Australia.* Adelaide.

Derevensky, J. L., & Gupta, R. (1998). Adolescent gambling behavior: A prevalence study and examination of the correlates associated with problem gambling. *Journal of Gambling Studies*, *14,* 319–345.

Derevensky, J.L., & Gupta, R. (2000). Prevalence estimates of adolescent gambling: a comparison of the SOGS-RA, DSM-IV-J, and the GA 20 questions. *Journal of Gambling Studies*, 16, 227-251.

Derevensky, J., Gupta, R., & Winters, K. (2003). Prevalence rates of youth gambling problems: are the current rates inflated? Journal of Gambling Studies, 19, 405-425.

Dickerson, M.G., Allcock, C., Blaszczynski, A., Nicholls, B., Williams, J., & Maddern, R. (1996). *Study 2: An examination of the socio-economic effects of gambling on individuals, families and the community, including research into the costs of problem gambling in New South Wales*, Report to the Casino Community Benefit Fund Trustees, NSW Government.

Dickerson, M.G., Baron, E., & O'Connor, J. (1994). *Measuring the extent and degree of gambling-related problems in Western Australia*. Report to Treasury, Tasmanian Government.

Dickerson, M., Baxter, P., Boreham, P., Harley, B., & Williams, J. (1995). *Report of the first year of the study into the social and economic impact of the introduction of gaming machines to Queensland clubs and hotels*. Brisbane: Department of Family Services and Aboriginal and Islander Affairs.

Dickerson, M., Boreham, P., & Harley, W. (1995). *The extent, nature and predictors of problems associated with machine gambling in Queensland- a survey-based analysis and assessment*. Report to the Department of Family and Community Services, Queensland Government.

Dickerson, M.G., Hinchy, J., Legg England, S.L., Fabre, J., & Cunningham, R. (1992). On the determinants of persistent gambling behaviour. *British Journal of Psychology,* 83, 237-248.

Dickerson, M., & Maddern, R. (1997). *The extent and impact of gambling in Tasmania with particular reference to problem gambling: A follow up to the Baseline study conducted in 1994.* Australian Institute for Gambling Research.

Dickerson, M.G., Walker, M., & Baron, E. (1994). *Measuring the extent and degree of gambling-related problems in Western Australia.* Report to the Department of Racing and Gaming, Western Australia.

Dickson, L., Derevensky, J., & Gupta, R. (1999). The prevention of gambling problems in youth: a conceptual framework. *Journal of Gambling Studies*, 18, 97-159.

DiClemente, C., Story, M., & Murray, K. (2000). “On a roll”: the process of initiation and cessation of problem gambling among adolescents. *Journal of Gambling Studies*, 16, 289-313.

Dixon, M., Hayes, L., & Aban, I. (2000). Examining the roles of rule following, reinforcement and pre-experimental histories in risk-taking behaviour. *The Psychological Record*, 50, 687-704.

Dixon, M., Hayes, L.J., Rehfeldt, R.A., & Ebbs, R.E. (1998). A possible adjusting procedure for studying outcomes of risk-taking. *Psychological Reports*, 82, 1047-1050.

Dowling, N., Smith, D., & Thomas, T. (2005). Electronic gaming machines: Are they the 'crack-cocaine' of gambling? *Journal of Addiction,* 100, 33-45.

Evans, R. (2003). Some theoretical models and constructs generic to substance abuse prevention programs for adolescents: possible relevance and limitations for problem gambling. *Journal of Gambling Studies*, 19, 287-302.

Ferster, C.B., & Skinner, B.F. (1957). *Schedules of reinforcement*, New York: Appleton-century Crofts.

Fisher, S.E. (1992). Measuring pathological gambling in children: The case of fruit machines in the UK. *Journal of Gambling Studies, 8,* 263–285.

Fisher, S.E. (1993). Gambling and pathological gambling in adolescents. *Journal of Gambling Studies, 9*, 277–287.

Fisher, S. (1995). Adolescent Slot Machine Dependency and Delinquency: questions on a question of methodology. *Journal of Gambling Studies*, 11, 303-10.

Fisher, S.E. (1999). A prevalence study of gambling and problem gambling in British adolescents. *Addiction Research, 7*, 509–538.

Gaboury, A., & Ladouceur, R. (1988). Irrational thinking and gambling. In W. Eadington (Ed.), *Gambling Research: proceedings of the seventh international conference on gambling and risk taking,* Reno: University of Nevada.

Gaboury, A., & Ladouceur, R. (1993). Evaluation of a prevention program for pathological gambling among adolescents. *Journal of Primary Prevention,* 14, 21-28.

Gambino, B. (2007). A test of the false positive bias hypothesis. *Journal of Gambling Studies, 23*, 55-62.

Gilovich, T. (1983). Biased evaluations and persistence in gambling. *Journal of Personality and Social Psychology,* 44, 1100-1126.

Gilovich, T., & Douglas, C. (1986). Biased evaluations of randomly determined gambling outcomes. *Journal of Experimental Social Psychology,* 22, 228-241.

Griffiths, M. (1990). The cognitive psychology of gambling. *Journal of Gambling Studies*, 6, 31-42.

Griffiths, M.D. (1994). The role of cognitive bias and skill in fruit machine gambling. *British Journal of Psychology,* 85, 351-369.

Griffiths, M.D. (1995). *Adolescent Gambling.* London and New York: Routledge.

Griffiths, M. (1998). *Why adolescents don't turn up for treatment*. Paper presented at the 3rd Conference of the European Association for Gambling Studies, Munich, Germany.

Griffiths, M.D. (1995). *Adolescent gambling*. London: Routledge.

Griffiths, M.D., & Delfabbro, P.H. (2001). The biopsychosocial approach to the study of gambling. *eGambling: The Electronic Journal of Gambling Issues (Feature article),* 5, 1-33, www.camh.net/egambling.

Griffiths, M.D., & Delfabbro, P.H. (2002). The biopsychosocial approach to the study of gambling. Gambling: *The Electronic Journal of Gambling Issues,* 5, 1-33.

Griffiths, M., & Sutherland, I. (1998). Adolescent gambling and drug use. *Journal of Community and Applied Social Psychology*, 8, 423-427.

Gupta, R., & Derevensky, J.L. (1998). Adolescent gambling behavior: A prevalence study and examination of the correlates associated with problem gambling. *Journal of Gambling Studies, 16*, 227–251.

Gupta, R. & Derevensky, J. (2000). Prevalence estimates of adolescent gambling: A comparison of the SOGS-RA, DSM-IV, and the GA 20 Questions. *Journal of Gambling Studies, 16*, 227–251.

Gupta, R., Derevensky, J., & Marget, N. (2004). Coping strategies employed by adolescents with gambling problems. *Child and Adolescent Mental Health,* 9, 115-123.

Hardoon, K., & Derevensky, J. (2002). Social influences involved in children's gambling behaviour. *Journal of Gambling Studies,* 17, 191-215.

Hardoon, K., Gupta, R., & Derevensky, J. (2004). Psychosocial variables associated with adolescent gambling. *Psychology of Addictive Behaviours*, 18, 170-179.

Henslin, J.M. (1967). Craps and magic. *American Journal of Sociology*, 73, 316-330.

Herman, J., Gupta, R., & Derevensky, J.L. (1998). Children's cognitive perceptions of 6/49 lottery tickets. *Journal of Gambling Studies*, 14, 227-244.

Jackson, A. (1999). *The impacts of gambling on adolescents and children*. Report prepared for the Department of Human Services, Victoria.Jacobs 1989

Jacobs, D.F. (1986). A general theory of addictions: A new theoretical model. *Journal of Gambling Behavior*, 2, 15-31.

Jacobs, D.F. (1987). *Effects on children of parental excess in gambling*. Paper presented at the Seventh International Conference on Gambling and Risk Taking, Reno, NV.

Jefferson, S., Doiron, J., Nicki, R., MacLean, A. (2004). Further psychometric development of the informational biases scale: An instrument designed to assess gambling cognitive distortions in video lottery terminal players. *Gambling Research*, 16, 28-39.

Jefferson, S., & Nicki, R. (2003). A new instrument to measure cognitive distortions in video lottery terminal users: the Informational Biases Scale (IBS). *Journal of Gambling Studies*, 20, 171-180.

Joukhador, J., Blaszczynski, A.P., & Maccallum, F. (2003). Superstitious beliefs in gambling among problem and non-problem gamblers: Preliminary data. *Journal of Gambling Studies,* 20, 171-180.

Knapp, T.J. (1976). The Premack Principle in human experimental and applied settings. *Behavior Research and Therapy*, 14, 133-147.

Ladouceur, R. (2004a). Gambling: The hidden addiction. *The Canadian Journal of Psychiatry,* 49, 501- 503.

Ladouceur, R., Dubé, D., & Bujold, A. (1994). Gambling among primary school students. *Journal of Gambling Studies*, *10,* 363–370.

Ladouceur, R. & Gaboury, A. (1988). Effects of limited and unlimited stakes on gambling behavior. *Journal of Gambling Behavior*, 4, 119-126.

Ladouceur, R., Gaboury, A., Bujold, A., Lachance, N. & Tremblay, S. (1991). Ecological validity of laboratory studies of videopoker gaming. *Journal of Gambling Studies*, 7, 109-116.

Ladouceur, R., Gaboury, A., Dumont, D, & Rochette, P. (1988). Gambling :relationship between the frequency of wins and irrational thinking. *Journal of Psychology, 122*, 409–414.

Ladouceur, R. & Mayrand, M. (1987). Depressive behaviors and gambling. *Psychological Reports,* 60, 1019-1022.

Ladouceur, R., & Mireault, C. (1988). Gambling behaviour among high school students in the Quebec area. *Journal of Gambling Behaviour*, 4, 3-12.

Ladouceur, R., & Walker, M. (1998). The cognitive approach to understanding and treating pathological gambling. In A. S. Bellack & M. Hersen (Eds.), *Comprehensive Clinical Psychology* (pp.588–601). New York: Pergamon.

Langer, E.J. (1975). The illusion of control. *Journal of Personality and Social Psychology,* 32, 311-328.

Langer, E.J., & Roth, J. (1975). Heads I win, tails it's chance: the illusion of control as a function of the sequence of outcomes in a purely chance task. *Journal of Personality and Social Psychology,* 32, 951-955.

Lerner, M.J., & Simmons, C.H. (1966). Observers' reactions to the "Innocent Victim": Comparison or rejection? *Journal of Personality and Social Psychology,* 4, 203-210.

Lesieur, H.R. (1988). Report on pathological gambling in New Jersey. In *Report and recommendations of the governor's advisory commission on gambling*. Pp. 103-165. Trenton, NJ: Governor's Advisory Commission on Gambling.

Lesieur, H.R. (1989). *Current research into pathological gambling and gaps in the literature*. England: Lexington Books.

Lesieur, H.R., & Blume, S. (1987). The South Oaks Gambling Screen (the SOGS): a new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144, 1184–1188.

Lesieur, H.R., Blume, S.B., & Zoppa, R.M. (1986). Alcoholism, drug abuse, and gambling. *Alcoholism: Clinical and Experimental Research*, 10, 33-38.

Lesieur, H.R., & Heineman, M. (1988). Pathological gambling among youthful multiple substance abusers in a therapeutic community. *British Journal of Addiction*, 83, 765-771.

Lesieur, H., & Klein, R. (1987). Pathological gambling among high school students. *Addictive Behaviours*, 12, 129-135.

Lesieur, H.R. & Rosenthal, R.J. (1991). Pathological gambling: a review of the literature Prepared for the American Psychiatric Association Task Force on DSM-IV Committee on Disorders of Impulse Control Not Elsewhere Classified. *Journal of Gambling Studies*, 7, 5–37.

Lesieur, H.R., Cross, J., Frank, M., Welch, M., White, C., Rubenstein, G., Moseley, K., & Mark, M. (1991). Gambling and pathological gambling among university students. *Addictive Behaviors*, 16, 517-527.

Linden, R.D., Pope, H.G., & Jonas, J.M. (1986). Pathological gambling and major affective disorder: Preliminary findings. *Journal of Clinical Psychiatry*, 47, 201-203.

Lopes, L., & Oden, G. (1987). Distinguishing between random and non-random events. *Journal of Experimental Psychology: Learning, Memory and Cognition,* 13, 392-400.

Lopez Viets, V.C., 1998. Treating pathological gambling. In: Miller, W.R. and Heather, N., Editors, 1998. *Treating addictive behaviors* (2nd ed.), Plenum, New York

McCormick, R.A. (1994). The importance of coping skill enhancement in the treatment of the pathological gambler. *Journal of Gambling Studies,* 10, 77-86.

McCormick, R.A., & Taber, J.I. (1987). The pathological gambler: Salient personality variables. In T. Galski (ed.) *Handbook on pathological gambling*. (Pp. 9-40). Springfield, IL: Charles C. Thomas Publishers.

McGurrin, M.(1992). *Pathological gambling: Conceptual, diagnostic and treatment issues*. Sarasota, FL. Professional Resources Press.

Maccallum, F., & Blaszczynski, A. (2003). Pathological gambling and suicidality: An analysis of severity and lethality. *Suicide and Life-Threatening Behavior*, 33, 88-98.

Malkin, D., & Syme, J. (1986). Personality and problem gambling. *International Journal of the Addictions*, 21, 267-272.

Moore, S., & Ohtsuka, K. (1997). Gambling activities of young Australians: Developing a model of behavior. *Journal of Gambling Studies, 13*, 207–236.

Moore, S., & Ohtsuka, K. (2001). Youth gambling in Melbourne's West: Changes between 1996 and 1998 for Anglo-European background and Asian background school based youth. *International Gambling Studies, 1*, 87–102.

National Gambling Impact Study Commission. (1999). *National Gambling Impact Study Commission Report*. Washington, DC: National Gambling Impact Study Commission.

National Research Council (1999). Committee on the Social and Economic Impact of Pathological Gambling, Committee on Law and Justice, Behavioral, and Social Sciences and Education. National Academy Press, Washington, D.C.

Neal, P., Delfabbro, P.H., & O'Neil, M. (2005). *Problem gambling and harm: Towards a National Definition*. Centre for Economic Studies, Adelaide.

Nower, L., & Blaszczynski, A. (2004). The Pathways Model as harm minimization for youth gamblers in educational settings. *Child and Adolescent Social Work Journal*, 21, 25-45.

O'Connor, J., & Dickerson, M. (2003). Definition and measure of chasing in off-course betting and gaming machine play. *Journal of Gambling Studies*, 19, 359-86.

O'Connor, J., & Dickerson, M. (2003). Impaired control over gambling in gaming machine and off-course gamblers. *Addiction*, 98. 53-60.

Oldman, D. (1974). Chance and skill: A study of roulette. *Sociology*, 8, 407-426.

Petry, N. 2005. *Pathological gambling*. New York: American Psychological Association.

Presson, P.K., & Benassi, V.A. (1996). Illusion of control: A meta-analytic review. *Journal of Social Behaviour and Personality, 11, 493-511.*

Productivity Commission (1999). *Australia's Gambling Industries.* Canberra: Productivity Commission.

Rachlin, H., Raineri, A., & Cross, D. (1991). Subjective probability and delay. *Journal of the Experimental Analysis of Behavior*, 55, 233-244.

Ramirez, L.F., McCormick, R.A., Russo, A.M., & Taber, J.I. (1984). Patterns of substance abuse in pathological gamblers undergoing treatment. *Addiction Behaviors*, 8, 425-428.

Rayylu, N., & Oei, T. (2004). The Gambling Related Cognitions Scale (GRCS): development, confirmatory factor validation and psychometric properties. *Addiction*, 99, 1-12.

Reid, R.L. (1986). The psychology of the near miss. *Journal of Gambling Behavior*, 2, 32-39.

Rogers, P. (1998). The cognitive psychology of lottery gambling: a theoretical review. *Journal of Gambling Studies,* 14, 111-134.

Rosenthal, R.J. (1986). The pathological gambler's system of self-deception. *Journal of Gambling Behavior*, 2, 108-120.

Roston, R. (1961). *Some personality characteristics of male compulsive gamblers*. PhD. Dissertation, University of California-Los Angeles.

Rothbaum, F., Weisz, J.R., & Snyder, S.S. (1982). Changing the world and changing the self: a two-process model of perceived control. *Journal of Personality and Social Psychology,* 42, 5-37.

S.A. Department of Human Services (2001). *Gambling patterns of South Australian and associated health indicators*. Adelaide: Centre for Population Studies in Epidemiology.

Sevigny, S., & Ladouceur, R. (2004). Gamblers' irrational thinking about chance events: The "double switching" concept. *International Gambling Studies,* 3, 163-170.

Shaffer, H., & Hall, M. (2001). Updating and refining prevalence estimates of disordered gambling behaviour in the United States and Canada. *Canadian Journal of Public Health*, 92, 168-172.

Shaffer, H.J., & Hall, M.N. (1996). Estimating the prevalence of adolescent gambling disorders: A quantitative synthesis and guide toward standard gambling nomenclature. *Journal of Gambling Studies*, 12, 193-214.

Shaffer, H., & Korn, D. (2002). Gambling and related mental disorders: A public health analysis. *Annual Review of Public Health*, 23, 171-212.

Shaffer, H.J., LaBrie, R., Scanlan, K.M., & Cummings, T.N. (1994). Pathological gambling among adolescents: Massachusetts gambling screen (MAGS). *Journal of Gambling Studies*, 10, 339-362.

Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling: A biopsychosocial perspective. *Clinical Psychology Review*, 22, 1-25.

Sharpe, L. & Tarrier, N. (1993). Towards a cognitive-behavioural theory of problem gambling.

Specker, S.M., Carlson, G.A., Edmonson, K.M., Johnson, P.E., & Marcotte, P.E. (1996). Psychopathology in pathological gamblers seeking treatment. *Journal of Gambling Studies*, 12, 67-81.

Steel, Z., & Blaszczynski, A. (1996). The factorial structure of pathological gambling. *Journal of Gambling Studies*, 12, 3-20.

Steinberg, M.A. (1988). Unpublished research report. Connecticut Council on Compulsive Gambling, Hamden, CT.

Stinchfield, R. (2000). Gambling and correlates of gambling among Minnesota public school students. *Journal of Gambling Studies*, 16, 153-173.

Strickland, L.H., Lewicki, R.J., & Katz, A.M. (1966). Temporal orientation and perceived control as determinants of risk-taking. *Journal of Experimental and Social Psychology*, 2, 143-151.

Sullivan, S. (2001). "Gambling amongst New Zealand high school students". In A. Blaszczynski (Ed.) Culture and the Gambling Phenomenon: Proceedings of the 11th annual conference of the National Association for Gambling Studies (pp. 345–349), Sydney.

Taber, J.I. (1982). Group psychotherapy with pathological gamblers. In W.R.. Eadington (ed.) *The gambling papers: Procedures of the fifth national conference on gambling and risk taking*. Reno, Nevada: Bureau of Business and Economic Research, University of Nevada.

Thompson, S., Thomas, C., & Armstrong, W. (1998). Illusions of control, underestimations, and accuracy: A control heuristic explanation. *Psychological Bulletin,* 123, 143-161.

Toneatto, T., Blitz-Miller, T., Calderwood, K., Dragonetti, R., & Tsannos, A. (1997). Cognitive distortions in heavy gambling. *Journal of Gambling Studies,* 13, 253-266.

Treisman, M., & Faulkner, A. (1987). Generation of random sequences by human subjects: cognitive operations or psychophysical process? *Journal of Experimental Psychology: General,* 116, 337-355.

Tversky, A., & Kahneman, D. (1971). Belief in the law of small numbers. *Psychological Bulletin,* 76, 105-110.

Tversky, A., & Kahneman, D. (1973). Availability: a heuristic for judging frequency and probability. *Cognitive Psychology,* 5, 207-233.

Volberg, R. & Moore, W. (1999). *Gambling and problem gambling among adolescents in Washington State: a six-year replication study 1993 to 1999*. Olympia: Washington State Lottery.

Wagenaar, W.A. (1988). *Paradoxes of gambling behaviour*. England: Erlbaum.

Walker, M.B., 1989. Some problems with the concept of "gambling addiction". *Journal of Gambling Studies*, 12, 233–249.

Walker, M.B. (1992a). Irrational thinking among slot machine players. *Journal of Gambling Studies,* 8, 245-288.

Walker, M.B. (1992b). *The psychology of gambling*. Sydney: Pergamon Press.

Ward, W.C., & Jenkins, H.M. (1965). The display of information and the judgment of contingency. *Canadian Journal of Psychology,* 19, 231-241.

Winters, K.C., Stichfield, R.D., & Kim, L.G. (1995). Monitoring adolescent gambling in Minnesota. *Journal of Gambling Studies, 11*, 165–183.

Wood, R.T.A. & Griffiths, M.D. (1998). The acquisition, development and maintenance of lottery and scratchcard gambling in adolescence. *Journal of Adolescence, 21*, 265–273.

Wynne, H. J., Smith, G. J., & Jacobs, D. F. (1996). *Adolescent gambling and problem gambling in Alberta*. Edmonton, Canada: Alberta Alcohol and Drug Abuse.

Yeoman, T., & Griffiths, M.D. (1996). Adolescent machine gambling and crime. *Journal of Adolescence, 19*, 99–104.

Zenker, S.I., & Wolfgang, A.K. (1982). Relationship of Machiavellianism and locus of control to preferences for leisure activity by college men and women. *Psychological Reports,* 50, 583-586.

Zuckerman, M. (1979). *Sensation seeking: beyond the optimal level of arousal*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Appendix 1: Survey Instrument

In this study, we are interested in the views and experiences of a wide variety of young people from different cultural, social and family backgrounds. To make sure that we have been successful in selecting a wide range of people, we need to ask you a few questions about you and your family.
You do NOT need to gamble to participate in this survey.

Please accept our assurance that all this information will be kept strictly confidential and will not be identified by name. Once you have completed your survey, you can seal it in the envelope provided.

Please answer every question as truthfully and honestly as you can. Try to avoid comparing your answers with your friends, or those sitting close to you. Many of the responses only require a tick (✓). The survey will take 15 to 20 minutes to complete.

A DEMOGRAPHICS (Some questions about you)

1. a. What is the name of your school? ……..

   b What year are you in? ……

   c. Is your school: Co-ed ? □ or Single sex ?□

   d. **At the present time are you intending to finish school at the end of Year 12/13?**

   Yes □ No □

2. a. Are you: Male ?□ Female ?□

   b. What is your age in years ?…….

3. a. Did your father study at university? Yes □ No □

   b. Did your mother study at university? Yes □ No □

4. a. How many adults (people aged 18 or older) usually live with you at home? ……..

b. Do both your mother and father usually live with you? Yes ☐ No ☐

5. Do you identify yourself as Aboriginal or of Torres Strait Islander descent? Yes ☐ No ☐

6. a. Is a language other than English spoken in your home? Yes ☐ No ☐

b. If your answer above is *Yes*, what language is it? ……

c. What is your mother's nationality eg, Australian, English, Chinese?……

d. What is your father's nationality? ……..

B GAMBLING BEHAVIOUR

Your personal opinions about, or experiences with, gambling whether or not

7. **How often have you** gambled on **any of the following during the last 12 months?**

Please tick (✓)

	Never	**1—2 times per year**	**3 times per year up to once per month**	**2—3 times per month**	**Weekly or more often**
Card games, eg., poker, blackjack for money					
Poker-machines					
Racing (horses, dogs)					
Sports (not including dog or horse-races)					
Crosslotto, Powerball or SoccerPools					
Keno					
Scratch tickets					
Bingo					
Internet gambling					

If you have never gambled go to Question 11.

8. **For each of the activities on which you gambled above, please tick if you** USUALLY **used your** OWN **money to gamble? How much do you usually spend (in dollars)?**

	Used your own money? Please tick (✓)	**How many dollars did you usually spend each time?**
Card games, eg, poker, blackjack		
Poker-machines		
Racing (horses, dogs)		
Sports (not including dog or horse-races)		
Crosslotto, Powerball or SoccerPools		
Keno		
Scratch tickets		
Bingo		
Internet gambling		

9. Have you ever done any of the following? If so, how did you do it?
For each type of gambling, it is OK to tick more than one way (eg, some people might play scratchies alone AND with friends, so they can tick (✓) both of these).

	Ways you gambled				
	By yourself (no-one noticed you go in)	By yourself using an ID card	With the help of other adults	With other friends?	Other (specify)
Gambled at the Casino before you turned 18					
Gambled on TAB racing before you turned 18					
Played the lotteries or keno before 16					
Played poker machines at a hotel or club					

10. At what age did you first gamble on any of the above activities with your own money? ……..

11. Is there anyone close to you whom you think might have a gambling problem?

Yes □ (Go to Question12) No □ (Go to Question13)

12. If *Yes*, what is this person's relationship to you? .....

13. Did you have a big win when you first tried gambling? Yes □ No □

C ATTITUDES TO GAMBLING

14. To what extent do you agree or disagree with the following statements.

	I strongly agree	I agree	I neither agree nor disagree	I disagree	I strongly disagree
Most of my friends gamble					
Most of my friends approve of gambling					
Most people in my family gamble					
My family approves of gambling					
I can't wait to turn 18 so I can go to adult gambling venues					
When I turn 18, I will gamble a lot more than I do now					
In the future, I will definitely like to gamble regularly					

15 To what extent do you agree or disagree with the following statements.

	I strongly agree	I agree	I neither agree nor disagree	I disagree	I strongly disagree
Gambling is a risky activity.					
You can lose all your money gambling.					
Gambling is a waste of money.					
Gamblers usually lose in the long-run.					
To gamble is to throw away money.					
You can make a living from gambling.					
Gambling is a good way to get rich quickly.					
Gambling is a better way to make money than working.					
Gambling can give high returns.					

D RISK AWARENESS (What are your chances of winning?)

16 How much skill [rating out of 10] do you think is potentially involved in the activities listed below? (That is, do you think that knowledge, skill and practice can increase people's chance of winning?)

	No skill at all ↓				**Equal skill and chance ↓**						**It's all skill ↓**
	0	1	2	3	4	5	6	7	8	9	10
Poker											
Blackjack											
Poker-machines											
Racing (horses, dogs)											
Sports (not including dog or horse-races)											
Lottery games (e.g., Keno, Crosslotto, Powerball, Soccer Pools)											
Roulette											

17. In Cross-lotto on TV, there are 45 numbers and you must choose 6. Which of the following gives the **closest** odds of all 6 of your numbers being drawn so that you win the jackpot? (Assuming that you've only got one ticket or set of 6 numbers).

Tick (✓) one only.

1 chance in 900 tickets	
1 chance in 9000 tickets	
1 chance in 90,000 tickets	
1 chance in 1 million tickets	
1 chance in 5 million tickets	
1 chance in 8 million tickets	
1 chance in 20 million tickets	

18. When you throw a 6-sided die, are any numbers harder to get than others? Yes □ No □

19. a. If you answered *Yes,* which numbers are harder? .....

b. Are there any numbers that are easier to get? Which ones? .....

20. a. If two unbiased coins with tail (T) on one side and head (H) on the other) are tossed, what is the c hance of getting two tails? **Tick (✓) one answer only**

1 chance in 3 or 33%	
1 chance in 4 or 25%	
1 chance in 2 or 50%	
1 chance in 5 or 20%	

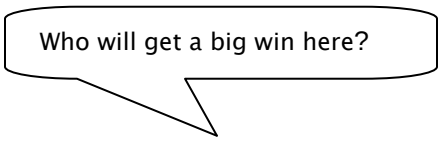
b. A person tosses a coin, 12 times in a row. Which of the following series of outcomes do you think is most likely? Tick **(✓)** one answer only

HTHTTHTHTHTH	
HHHTTTTTTHHH	
THTTHHTTTHHH	
None of them are likely if the coin is fair	
All of them are equally likely if the coin is fair	

21. In a game of roulette, there are 37 numbers on the wheel. Eighteen numbers are red, and 18 are black, and there is a green zero. If you bet on red in two consecutive rounds which answer is closest to the actual chance of winning in both rounds? **Tick (✓) one answer only**

4 chance in 16 spins	
9 chances in 18 spins	
1 chance in 37 spins	
1 chance in 18 spins	
2 chances in 18 spins	

22. Imagine that two gamblers Bob and Sue are playing poker machines. If you look at the table below you can see how much they won each game. Who is most likely to get a big win on the next game?



Bob	45	0	0	2	0	2	0	0	0	0	0	0	2	5	0	2	0	0	
Sue	0	0	0	0	2	0	7	0	0	0	0	0	6	0	0	15	25	50	

Tick (✓) one answer only

Bob is more likely to win next game	
Sue is more likely to win next game	
They have the same chance of winning the next game	

23. In a normal deck there are 52 playing cards. If the first 4 dealt are red, what are the chances that the 5th one will also be red?

Tick (✓) one answer only:

About 50% (or 1 in 2)	
Less than 50%	
More than 50%	

24. A leather bag contains 3 white, 6 red, 9 blue and 18 black discs of identical size and shape. If you pulled out one disc without looking in the bag, what are your chances of getting:

a. A red one ?……..**b.** A blue one ? ……

E. RESPONSIBLE GAMBLING

25. The following questions refer to the ways people gamble and how people feel while gambling. Thinking about the last 12 months, please tick (✓) those statements which apply to your own gambling during the last 12 months. If you have NOT gambled in the last 12 months go to Question 26.

Statement	Tick (✓) if true during the last 12 months.
Do you often find yourself thinking about gambling activities at odd times of the day and/ or planning the next time you will play?	
Do you lie to your family or friends or hide how much you gamble?	
After spending money on gambling activities do you play again another day to try and win your money back (more than half the time)?	
In the past year, have you spent your school lunch money or money for bus fares, on gambling activities?	
In the past year, have you taken money from some-one you live with, without their knowing, to gamble?	
Do you ever gamble as a way of escaping problems?	
Do you find you need to spend more and more money on gambling activities?	
In the past year, have you stolen money from outside the family, or shoplifted, to gamble?	
Do you become restless, tense, fed up, or bad tempered when trying to cut down or stop gambling?	
In the past year, have you gone to someone for help with a serious money worry caused by participation in gambling?	
Have you fallen out with members of your family, or close friends, because of your gambling behaviour?	
In the past year, have you missed school to participate in gambling experiences? (5 times or more)	

F CARD GAMES

26. **a.** Have you watched TV-poker games? Yes □ No □

b. Did you enjoy these programs? Yes □ No □

c. Did watching these games encourage you and your friends to play card games for money?

Yes □ No □

d. Do you play poker or other card games for money like on TV? Yes □ No □

27. **a.** If you answered *Yes* to 28d., how many friends typically play at one time? [ ]

b. What is the most anyone has won on one day and taken home? $ [ ]

c. What is the most anyone has lost? $ [ ]

d. What is the maximum limit on the amount players can bet in your games? $ [ ]

e. Give one word that describes why you play? ……..

G OTHER GAMES

28 a. How often do you play video/ computer or arcade games?

	Never	**Once per week**	**2-6 times per week**	**Daily**	**How many hours do you usually play?**
TV games (X-box, Game Cube, Play-station, and others).					
Phone games.					
Hand-held games (e.g., Gameboy).					
PC games.					
Arcade games (eg, at Greater Union, etc)					
Which arcade games do you play and how often? **List them below**:					

b. If you play **daily**, how many hours would you typically play? _____ hours

H SCHOOL ACTIVITIES

29. Did you personally take part in any responsible gambling school activities last year (eg, Dicey Dealings, Don't Bet on it, the floor mat game, or any other class exercise?) Yes ☐ No ☐