

Impression Management and Self-Deception

Running head: IMPRESSION MANAGEMENT AND SELF-DECEPTION

Impression Management and Self-Deception in Problem Gambling

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Abstract

Studies have shown that self-reports of attitudes and behaviour can be biased because of socially desirable responding (Lajunen, Corry, Summala, & Hartley, 1997; Paulhus & Reid, 1991). Recent investigations have supported two distinct types of socially desirable response styles: impression management and self-deception. The present study evaluated the relationship between gambling behaviours and both forms of socially desirable response styles among social gamblers ($n = 33$), problem gamblers ($n = 20$), and non-gamblers ($n = 22$). Three measures were administered: the South Oaks Gambling Screen (Lesieur & Blume, 1987), the Self-Evaluation Survey of Gambling Behaviour (Beaudoin & Cox, 1999) and the Balanced Inventory of Desirable Responding (Paulhus, 1984). A small but significant negative correlation was found between impression management and problem gambling behaviours. Significant negative correlations were found between impression management and numerous specific indices of problem gambling behaviour. Contrary to predictions, no evidence was found to support the hypothesis that self-deception was a factor in problem gambling behaviour. Socially desirable responses tended to be more frequent in the non-gamblers (impression management) and social gamblers (self-deception). Additional analysis revealed sex differences in response patterns.

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Impression Management and Self-Deception in Problem Gambling

Gambling involves the wager of a set amount of money on the outcome of a chance event in the hope of winning a larger monetary sum (Walker & Phil, 1992).

Rogers (1998) defined gambling as an economic exchange where the gambler exchanges a certain loss (bet) in the hope of an uncertain gain (win). Numerous gambling choices exist in contemporary North American society. These include lottery tickets, bingos, slot machines, card games, dice games, roulette, video lottery terminals, pull-tabs, sports betting, and off-track betting.

Gambling has emerged as a popular activity that cuts across race, class, and culture (Griffiths & Delfabbro, 2001). As a form of leisure and entertainment, gambling has become more socially acceptable (Eadington, 2003). With existing forms of gambling becoming more readily available, new forms of gambling being introduced, and the greater accessibility of casinos, there is an increase in the number of persons gambling (Griffiths & Delfabbro, 2001; Maclin, Dixon, & Hayes, 1999; Raylu & Oei, 2002; Schaffer, Hall, & Vander Bilt, 1999). Ladouceur, Paquet, and Dube (1996) reported that over 85% of most Western samples admit to participating in gambling. A prevalence study by Volberg (1994) of five states in the United States (US) with legalized gambling, estimated that between 84%-92% participated in some form of gambling.

Although gambling is a form of recreation for most, it can become problematic for some. The legalization of new forms of gambling has created a trend in which more people could develop serious gambling problems as gambling involvement increases (Abbott, Volberg, & Ronnberg, 2004; Beaudoin & Cox, 1999; Griffiths, 1999; Hollander,

Buchalter, & DeCaria, 2000; Ladouceur, 1996; Ladouceur, 2004; Raylu & Oei, 2002; Ricketts & Macaskill, 2004). Those who gamble excessively and experience serious problems with gambling are known as “problem” or “pathological” gamblers.

Pathological gambling was introduced as a psychiatric disorder of impulse control in the *Diagnostic and Statistical Manual of Mental Disorders*, third edition (*DSM-III*) (American Psychiatric Association (APA), 1980). Since then, research on factors associated with problem gambling behaviour has grown (Sharpe, 2002). The *Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revision (DSM-IV-TR*; APA, 2000) characterizes pathological gambling as a preoccupation with or a loss of control over gambling, deception about the extent of involvement and spending, family and job disruptions, financial problems, illegal acts including theft, and chasing losses. According to this most recent version of the *DSM-IV*, a diagnosis of pathological gambling can be established when an individual meets five or more of ten criteria over the course of their lives. The essential feature is "persistent and maladaptive gambling behaviour ... that disrupts personal, family, or vocational pursuits" (APA, 2000, p. 671).

The awareness of the prevalence of pathological gambling has increased (Freidenberg, Blanchard, Wulfert, & Malta, 2002). It has been found that the availability of gambling opportunities has a direct bearing on the prevalence of problem gambling (Abbot et al., 2004; Griffiths, 1999; Volberg, 1994). In areas of the US where legal gambling has been available for less than ten years, under .5% of the adult population are classified as probable pathological gamblers. In areas where legal gambling has been

available for more than 20 years, probable pathological gamblers comprised approximately 1.5 % of adult population (Volberg, 1994). A recent gambling impact study by Gerstein et al. (1999) found that the rate of pathological gambling doubles when a casino is within 50 miles.

Schaffer et al. (1999) conducted a meta-analysis of 119 prevalence studies between 1974 and 1997 and found a significant increase in the prevalence of problem gambling in the US and Canada. There were no significant differences between Canada and the US. Current prevalence rates for gambling pathology range from 1-2% of the adult population in community samples in various countries (Beaudoin & Cox, 1999; Ladouceur, 1996; Schaffer et al., 1999; Toce-Gerstein, Gerstein, & Volberg, 2003; Walker & Dickerson, 1996). Prevalence rates in adolescents were significantly higher at 3.9% (Schaffer et al., 1999).

In a recent study to determine the extent of gambling in Prince Edward Island (PEI), Dorion and Nicki (2001) estimated the current rate of problem gamblers at 3.1% (comprised of 1.1% problem gamblers and 2% pathological gamblers). Although the problem gambling rate was lower than most other provinces (likely due to the absence of casinos), they concluded that problem gambling patterns in PEI resemble most other provinces .

Social Impact of Problem Gambling

Gambling is potentially addictive and can have negative consequences (Parke, Griffiths, & Irwing, 2004). The recent trend in gambling patterns has caused a growing concern about the social costs and negative personal consequences of increased gambling

(Eadington, 2003; Walker, 2003). Research into the social and economic impacts of gambling suggests that the costs of gambling are large for both individuals and society (Griffiths, 2003).

What should be included and excluded from social costs is a controversial issue (Walker, 2003). In a review of social costs studies, Walker and Barnett (1999) defined the economic social costs of pathological gambling and differentiated between “true” social costs and negative consequences that are not social costs. Similar sentiments were expressed by Collins and Lapsley (2003), who recommended classifying social costs into tangible (costs valued in the marketplace) and intangible (private and personal costs). Eadington (2003) suggested that social costs occur when an action results in making some society members worse off, and no one better off. Some of the social costs cited include lost income, decreased productivity, employment absences due to stress-related depression and illness, unpaid debts, strain on public services, and divorces (Eadington, 2003; Walker & Barnett, 1999). Raylu and Oei (2002) also suggest incorporating the cost of crime to support the gambling habit and the treatment costs.

Adverse personal consequences of problem gambling also exist. This can involve financial problems or bankruptcy, legal matters, relationship and family concerns, and health problems, as well as emotional consequences such as depression and anxiety (Friedenberg et al., 2002; Griffiths, 2003; Raylu & Oei, 2002; Ricketts & Macaskill, 2003).

Differentiating Problem Gamblers

Gambling is a losing proposition. The odds of winning are bleak for most forms

of gambling and the losses suffered by gamblers are huge (Gibson & Sanbonmatsu, 2004). Given the persistent losses and the adversities associated with gambling, there is a need to better understand what leads individuals to become pathological gamblers (Toce-Gerstein et al., 2003).

Gambling Motivations

Gambling motivations differ and many variables may contribute to problem gambling, with no single reason considered sufficient (Griffiths & Delfabbro, 2001). Schaffer et al. (1999) suggest that because gambling activities involve excitement, risk-taking and possible monetary gains, every person who gambles has the potential to develop into a problem gambler. Lesieur (1984) proposes that a preoccupation with winning money and chasing losses leads to a progression to problem gambling. Ricketts and Macaskill (2004) identified the perceived likelihood of winning money back and using gambling to manage negative emotional states as two variables that differentiate problem gamblers from normal or social gamblers.

A variety of needs other than winning money may be satisfied by gambling (Delfabbro, 2004; Gibson & Sanbonmatsu, 2004). In addition to the tangible reward of money, Parke et al. (2004) speculated that the intangible rewards are the social aspects of gambling and the acknowledgement of skill or gambling ability. Evidence exists that biological, psychological, and social factors as well as cognitions play a large part in excessive gambling, as do the interaction of these variables (Griffiths, 1999; Parke et al., 2004; Sharpe, 2002).

Physiological arousal is associated with gambling activities and may be a useful indicator of problem gambling behaviour (Carroll & Huxley, 1994; Freidenberg et al., 2002; Ricketts & Macaskill, 2004; Sharpe, 2004). Although arousal related experiences have been reported for both normal (social) and problem gamblers, Sharpe (2004) found pathological gamblers have different gambling-related arousal associations. Social gamblers became more aroused in reaction to winning than losing; problem gamblers were equally physiologically aroused to both. Familial factors and genetics have been found to have an important influence on the development of problem gambling behaviour (Eisen et al., 1998; Sharpe, 2002).

There is evidence to suggest a connection between problem gambling and certain personality characteristics and attentional disorders (Raylu & Oei, 2002). Excessive gambling has been associated with the inability to control impulses (Griffiths & Delfabbro, 2001). Self-presentation and identity implications also exist (Holtgraves, 1988). Ricketts and Macaskill (2003) suggest that there are emotional benefits of gambling which include managing negative or unpleasant emotions, a sense of achievement linked to winning, and being perceived as an expert. Other reasons for maintaining gambling behaviour are for entertainment or for a source of distraction from life circumstances (Blaszczynski, 2000; Gibson & Sanbonmatsu, 2004).

It has been suggested that cognitive factors or more specifically, cognitive distortions may have a role in encouraging gambling and gambling problems (Behnsain, Taillefer, & Ladouceur, 2004; Griffiths, 1990; Joukhador, Blaszczynski, & Maccallum,

2004; Sharpe, 2002; Toneatto, Blitz-Miller, Calderwood, Dragonette, & Tsanos, 1997).

Numerous studies have found that erroneous perceptions and irrational beliefs can contribute to problem gambling behaviours (Baboushkin, Haroon, Deverensky, & Gupta, 2001; Gaboury & Ladouceur, 1989; Griffiths & Delfabbro, 2001; Joukhador et al., 2004; Toneatto et al., 1997). Baboushkin et al. (2001) found that cognitive distortion frequency related to gambling frequency. Toneatto (1999) found that problem gamblers use cognitive distortions in gambling to overrate their ability to win which contrasts to the losses usually sustained. Steenbergh, Meyers, May, and Whelan (2002) indicated that problem gamblers reported higher levels of cognitive distortions. Some of the more common distortions include illusions of control, the availability heuristic, misunderstanding probabilities, near wins, confirmation biases, and over-reporting wins.

An illusion of control in gambling exists when players perceive an association between their actions and a chance outcome (Hill & Williamson, 1998; Rogers, 1998). Griffiths and Delfabbro (2001) concluded that people misjudge how much money they have won or lost and overestimate the extent they can influence gambling outcomes.

The availability heuristic involves the tendency to remember more salient events (i.e., wins) than less salient events (i.e., losses) when accessing memory, so winning probability is overestimated (Hill & Williamson, 1998). Benhsain et al. (2004) identified misunderstanding probabilities regarding the randomness of wins as a key factor in developing and maintaining gambling habits.

Griffiths (1990) and Delfabbro and Winefield (1999) proposed that a near win may cause physiological arousal with the associated excitement increasing the winning

expectancy and reinforcing the play. Near-wins were defined by Cote, Caron, Aubert, Desrochers, and Ladouceur (2003) as failures that are close to being successful.

Confirmation bias involves a selective memory search or selective recall for confirming evidence rather than disconfirming information. People can become biased by their expectations (Hawley, Johnston, & Farnham, 1994), thus avoiding perceptions of the unexpected when it does not fit their prevailing thinking (Bruner and Postman, 1949). Mele (1997) asserts that wanting something to be true may bias our beliefs even when a review of available information would indicate these beliefs to be false. This bias can consist of a tendency to recall wins and ignore losses or overestimate wins and underestimate losses (Toneatto et al., 1997).

The phenomenon of over-reporting gambling wins and under-reporting losses has been reported in the literature (Baboushkin et al., 2001; Carol & Huxley, 1994; Toneatto et al., 1997). In a study by Carroll and Huxley (1994), gamblers' estimates of success on a slot machines differed significantly from their actual winnings. Gilovich (1983) found subjects over-reported their wins and discounted their losses when betting on sports. Findings by Toneatto et al. (1997) revealed that approximately one-third of the heavy gamblers recalled wins and ignored losses. This tendency of over-reporting could be due to memory bias, impression management, or self-deception. Jamieson, Mushquash, and Mazmanian (2003) explored the role of social factors in gamblers' over-report of wins but their findings did not clearly support social reasons for over-reporting wins. The possibility that gamblers' over-reports of winning may reflect a socially desirable response style has received little attention in the literature.

Social Desirability

Self-reports of attitudes and behaviour can be biased because of socially desirable responding (Lajunen et al., 1997; Paulhus & Reid, 1991). Social desirability has been defined as "the tendency of subjects to attribute to themselves in self-description, personality statements with socially desirable scale values and to reject those with socially undesirable scale values" (Edwards, 1957, p. vi). It involves the individual's desire to present him or her self more positively, denial about the extent of his or her behaviour, and concern about the consequences of disclosing accurate and truthful information (Holtgraves, 2004; Weinstock, Whelan, & Meyers, 2004). It has also been linked to many psychological traits over the years (Helmes & Holden, 2003). In an examination of self-report items, Holtgraves (2004) found evidence that social desirability functions as an editing program where individuals retrieve the information and evaluate it before responding.

Two complementary yet independent measures of social desirability have been proposed. The two measures involve a self deception factor and an impression management factor (Paulhus, 1984).

Self-deception refers to a non-deliberate and overly positive self-presentation that might be consciously believed. It involves a denial of negative thoughts and feelings (Ashley & Holtgraves, 2003), or it may act as a "defense mechanism" to prevent unpleasant or threatening thoughts from influencing present thinking (Helmes & Holden, 2003). Peterson et al. (2003) state that self-deception involves discounting evidence that conflicts with current beliefs. Self-deception may also be used to cope with threatening

information or negative life events (Paulhus, 1984; Paulhus & Reid, 1991).

Mele (1997) suggests that self-deception exists when an individual holds a false belief, distorts evidence because of a desire for the false belief to be true, maintains the false belief by manipulating the evidence, and possesses evidence that warrants another conclusion (i.e., not accepting these beliefs). Self-deceptors hold onto prior beliefs by engaging in “protective avoidance” and ignore or fail to consider corrective evidence that their current expectations and beliefs may be incorrect (Peterson, Driver-Linn, & DeYoung, 2002). This evidence, if accepted would prompt a change in their plans or beliefs and modulate their responses (Peterson et al., 2003).

Impression management involves a conscious tailoring of responses to create a more positive social image to impress others (Paulhus & John, 1998). It is a deliberate tendency to give a favourable self-description to others (Paulhus & Reid, 1991) by overstating desirable performance or behaviours and understating undesirable performance or behaviours (Ashley & Holtgraves, 2003). It can also be defined as a conscious and purposeful deception of others (Paulhus, 1986). Behaviours may include lying to feel good, shame or secrecy about certain conduct, and the desire to project a more conservative image. Impression management responses can vary depending on the situation (Paulhus, 1984).

In summary, social desirability involves the individual's tendency to present him or her self in a more positive manner and it may consist of two factors: self-deception and impression management. Self-deception refers to a non-deliberate disregard of conflicting information resulting in an overly positive self-presentation. Impression management

involves a deliberate attempt to report erroneous information to others to create a more favourable impression. It seems reasonable to suppose that self-deception and impression management could play an important role in the context of gambling.

In 1988, Holtgraves entertained the idea of a self-presentation component in gamblers that involved conscious and unconscious attempts to control the images projected. He suggested that the opportunity to present oneself in a desired image plays a prominent role in the motivation to gamble. Even though gambling outcomes are random and determined by chance, when gamblers report wins, they present themselves as competent, which allows them to be evaluated by the self and others more positively. Therefore, a positive evaluation both of oneself and by others can come about as a consequence of reports of winning. This positive evaluation and desire to project a favourable image can be characterized as an attempt at impression management. Although Toneatto et al. (1997) attributed the discrepancy in reporting wins and losses to cognitive distortions or a memory bias which could be interpreted as self-deception, they overlook the possibility that these distortions could involve intentional and deliberate efforts at impression management.

Jamieson et al. (2003) addressed this issue more directly by examining whether the reporting of wins was influenced by social factors in a sample of individuals recruited over the internet. A discrepancy between the gamblers' view of themselves and others was found in both individuals who described themselves as winning more than losing, and individuals who claimed to be losing more than they won. Although the study participants acknowledged that most gamblers lose, the majority of respondents reported

that they were not among the losers and denied misleading other people. They were also skeptical about other gamblers' reports of gambling outcomes, viewing other gamblers as deceptive about their wins and losses in order to make a more favourable impression on others. Based on their findings, Jamieson et al. (2003) proposed that this discrepancy could reflect self-deception or that it “may well reflect a general self-presentation bias, not specific to gamblers. People tend to see positive things about themselves, more than about others” (p. 9). This could be an intentional and explicit process, or as suggested by Cross, Morris, and Gore (2002), it may occur through implicit processes outside of awareness.

Present Study

Jamieson et al. (2003) identified self-deception and a self-presentation bias (i.e., impression management) as two possible reasons for the discrepancy in how gamblers view themselves and other gamblers. Mushquash (2004) found only a weak relationship between gambling behaviours and impression management ($r = .16$). Therefore, it is possible that self-deception plays an important part in gamblers' attitudes and behaviours. The role of self-deception in gambling has not been investigated in the literature.

The present study builds on prior research by evaluating the relationship between gambling behaviour and both forms of socially desirable response styles: self-deception and impression management. This study examined the association of self-deception and impression management to two self-report measures of problem gambling behaviour, the South Oaks Gambling Screen (Lesieur & Blume, 1987) and the Self-Evaluation Survey

of Gambling Behaviour (Beaudoin & Cox, 1999). It was hypothesized that a significant correlation would exist between self-deception and both problem gambling measures.

In addition, both response styles were compared to indices of problem gambling behaviour which included chasing losses, unsuccessful efforts at stopping gambling, and out of control gambling behaviours. It was predicted that self-deception primarily would be associated with indices of problem gambling behaviours and that significant correlations would exist.

The role of self-deception and impression management was investigated further by comparing response styles among three groups: problem gamblers, social gamblers, and non-gamblers. It was predicted that there would be a significant difference in self-deception between the groups, with problem gamblers having the highest mean scores.

Method

Participants

Seventy-six adults participated in the study. Participants were recruited from the community through advertisements in the local newspaper, posters, brochures and word-of-mouth. The advertisement sought individuals 18 years of age or older either with gambling experience or who had never gambled. Students enrolled in psychology classes at Lakehead University were also invited to participate.

Participants were assigned to one of three gambling groups based on the scores obtained on the South Oaks Gambling Screen (SOGS) as is common practice in the research in this area: (1) social or non-problem gamblers comprised of individuals with a

SOGS score of less than five ($n = 34$); (2) problem gamblers with a SOGS score of five or more ($n = 20$) and (3) non-gamblers as the control group ($n = 22$). One social gambler was excluded from the analysis because of recording errors on their questionnaires.

Participants ranged in age from 18-69 years ($M = 36.8$, $SD = 15.78$) with educational levels varying from nine years to twenty years ($M = 14.29$, $SD = 2.6$). Approximately 47% were employed and 31% were university students. Self-reported income ranged from “less than \$10,000” to “\$81,000-\$90,000”. Approximately 58.7 % had never married. It was noted that 40% of the problem gamblers reported an income of less than \$10,000 and 70% were single. The majority of the participants self-identified as Caucasian (73.3%), followed by First Nations (10.7%), Asian (4%), African (2.7%), and other (9.3%). This is somewhat similar to the province of Ontario where Caucasians comprise approximately 79% of the population and the median age is 37.2 (2001 Census).

Measures

Demographic Sheet. The Demographic Sheet gathered information on participant demographics (Appendix A). Participants were asked to provide details regarding sex, age, marital status, years of education, occupation, income, ethnicity, height, and weight.

Self-Evaluation Survey of Gambling Behaviour (SSGB). The SSGB is a DSM-IV-based questionnaire consisting of 32-items that were developed by Beaudoin and Cox (1999) in response to revisions to the *DSM-III* (APA, 1980) (Appendix B). The first of two sections measures the frequency of diagnostic criteria for pathological gambling. It is comprised of ten items, each rated on a 4-point scale ranging from 0 (never) to 3 (yes, in

the past month). The presence of five or more symptoms is necessary to establish a diagnosis. The second section is designed to assess features associated with pathological gambling. It is comprised of 22 self-evaluation statements, each requiring yes or no responses. Beaudoin and Cox (1999) reported a significant correlation between the SSGB symptom ratings and SOGS scores ($r = .59$).

South Oaks Gambling Screen (SOGS). The SOGS is a reliable 20-item questionnaire used to evaluate gambling behaviour in the last year (Appendix C) (Lesieur & Blume, 1987, 1993). It is based on the DSM-III (APA, 1980) criteria for pathological gambling and has been tested in a variety of clinical settings. Scores can range from 0 to 20 with a score of five or more used to indicate probable pathological gambling (Lesieur & Blume, 1993). The SOGS has shown to be highly correlated with the DSM-III-R (APA, 1987) items indicating probable pathological gambling ($r = .94$; Lesieur & Blume, 1987, 1993). The scale demonstrates high internal consistency (Cronbach's alpha = .97) in clinical samples and adequate test-retest reliability over a 30 day period ($r = .71$; Lesieur & Blume, 1987). While it has received some criticism, it is the most commonly used assessment instrument to assess gambling behaviour (Beaudoin & Cox, 1999).

Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984). The BIDR is a 40-item scale that measures two dimensions of social desirability: self-deception and impression management (Appendix D). Each item is rated on a seven-point Likert-type scale ranging from 1 (not true) to 7 (very true). Only the extreme responses are included as socially desirable responses. Scores are yielded on both components. Principal component analysis on the items support the scoring keys (Holden, Starzyk, McLeod, &

Edwards, 2000). The total scale demonstrates a high internal consistency ($\alpha = .83$). Alpha values for individual scales range from .75 to .86 for Impression Management and from .68 to .80 for Self-Deception. Test-retest reliability over a five week period was .65 for the Impression Management Scale and .69 for the Self-Deception Scale (Paulhus, 1991).

Participants completed two additional questionnaires as part of the larger study: the Internal-External Control Scale (Appendix E) and the Beck Depression Inventory (Appendix F).

Procedures

All subjects were initially screened by phone or in the presence of the researcher. They were advised of the purpose of the research and administered two screening questionnaires: the South Oaks Gambling Screen (Lesieur & Blume, 1987, 1993) and the Self-Evaluation Survey of Gambling Behaviour (Beaudoin & Cox, 1999). Scores from these measures were used to determine group membership.

Study participants were invited to the gambling laboratory at Lakehead University and tested individually. (The gambling laboratory is within a five minute drive to the local casino.) Written informed consent was obtained from each subject prior to the administration of the tests. Participants completed the following questionnaires: the Demographic Sheet, SSGB, SOGS, the BIDR (Version 6) and the two additional measures. Three other tasks were administered: a gambling word list to investigate automatic memory biases, a computerized slot machine simulation to investigate memory effects in gambling, betting information, ratings of confidence in winning, and a dice

game to assess skill and confidence in winning. The additional measures and tasks were not analyzed in this research.

Participants were given \$20 for their participation. A debriefing form was also provided that contained contact information for psychological services for gambling-related problems or for other concerns. Subjects were contacted briefly by phone one week later to obtain follow-up information regarding aspects of the slot machine simulation task.

Statistical Analysis

Descriptive statistics were calculated and examined for statistical outliers employing one of the procedures suggested by Tabachnick and Fidell (2001). Outliers were defined as scores greater than three standard deviations above or below the mean.

Chi-square analysis for categorical and frequency variables, and one-way analyses of variance (ANOVA) for quantitative variables were used to analyze differences in demographics, gambling behaviour and impression management and self-deception scores among the three gambling groups. Pearson product-moment correlation coefficient were calculated to examine various relationships among the measures, and associations between specific measures and problem gambling behaviours. All statistical analyses were conducted at the .05 level.

Results

Table 1 reports the descriptive statistics for the variables used in this study. Three subjects neglected to report on one demographic variable. No individual values were determined to be statistical outliers.

Two significant differences between groups were found in the demographic variables. Although the participants overall were fairly evenly split (46.7% male and 53.3% female), the analysis indicated a significant difference in the proportion of males and females in the groups ($\chi^2(2) = 9.49, p < .01$). Women comprised 77% of the non-gamblers while men comprised 70% of the problem gamblers. The DSM-IV-TR (APA, 2000) reports a similar sex prevalence of pathological gamblers. Analysis revealed a significant difference in ethnicity between groups ($\chi^2(8) = 20.32, p < .01$). Caucasians comprised 77.3% of the non-gamblers, 87.9% of the social gamblers and 45% of the problem gamblers. First Nations (10.7% of the participants) comprised 4.5% of the non-gamblers, 0% of the social gamblers, and 35% of the problem gamblers.

The analyses did not reveal a significant difference between age, occupation, income, education or marital status between the groups.

Relationship between SSGB and SOGS

The total SOGS scores were compared to the symptom scores from the SSGB for their degree of relationship to each other. The correlation between SSGB and SOGS was strong and significant ($r = .93, p < .01$) and considerably higher than the .59 correlation reported by Beaudoin and Cox (1999).

Impression Management and Self-Deception Scale Correlates

Correlations were computed for the relationship between Impression Management and Self-Deception scores. The correlation of .39 ($p < .01$) is slightly higher than the range of .20 to .35 reported by Paulhus (1998).

Impression Management and Self-Deception Correlates to Problem Gambling

Pearson correlations were used to investigate the association between response styles (impression management and self-deception) and the total scores on the two primary measures: the South Oaks Gambling Screen, and the Self-Evaluation Survey of Gambling Behaviour. There was a significant negative correlation between impression management and both the SOGS and the SSGB ($r = -.28, p < .05$ and $r = -.29, p < .05$, respectively). The pattern of associations between problem gambling and self-deception were not consistent with predictions. There was no significant correlation between self-deception and either measure of problem gambling behaviour.

Specific indices of problem gambling behaviour taken from both the SSGB and the SOGS were examined to determine whether a relationship existed between individual behaviours and impression management or self-deception. The correlations between the indices and both components can be found on Tables 2 and 3. The analysis revealed negative correlations between impression management and most individual problem gambling behaviours on both measures. These negative correlations reached significance in more than 50% of the SSGB behaviours and more than 40% of the SOGS behaviours. On the SSGB, these relate to chasing losses, increased spending, committing crime to finance gambling, irritability with attempts at stopping, pre-occupation with gambling, and lying about gambling. On the SOGS, these relate to chasing losses, identifying gambling as a problem, gambling more than intended, arguments over money, and lost time from work or school. There were significant correlations with self-deception and three indices of problem gambling behaviours from the SSGB: taking risks, concern with

the approval of others, and feeling easily bored. There was one significant correlation with the SOGS behaviour that relates to arguments over money.

Social Desirability Response Styles of the Three Groups

An analysis of the impression management and self-deception scores revealed a significant difference in impression management between the groups ($F(2, 72) = 3.43, p < .05$) with non-gamblers scoring the highest ($M = 7.59, SD = 4.07$), followed by social gamblers ($M = 6.67, SD = 3.98$) and problem gamblers ($M = 4.60, SD = 3.05$). Although the social gamblers scored highest on self-deception, the three groups did not differ significantly.

Supplementary Analyses

Correlational Analysis by Group

The correlational analysis to investigate the association between impression management and self-deception and the two primary measures was repeated separately for each of the groups to determine if a different pattern would emerge. None of the correlations were found to be significant.

Sex Differences in Social Desirability

An investigation of sex differences in patterns of socially desirable responses was also undertaken. The results indicated that women ($M = 7.45, SD = 4.13$) scored higher than men ($M = 5.17, SD = 3.29$) on impression management and this difference was statistically significant, $F(1, 73) = 6.85, p < .05$. The differences in self-deception scores were not significant.

Further investigation revealed a significant difference in impression management between groups for women, $F(2, 37) = 4.23, p < .05$, with the non-gamblers scoring highest ($M = 8.53, SD = 3.83$), followed by social gamblers ($M = 7.82, SD = 4.20$) and problem gamblers ($M = 3.33, SD = 2.25$). The group differences in self-deception for women were not significant. There were no significant differences between groups for men on either measure.

Additional analyses were undertaken to assess whether sex differences in social desirability existed within groups through a series of one-way ANOVAs. A significant difference was found within the non-gamblers, $F(1, 20) = 4.68, p < .05$, with females ($M = 8.53, S.D. = 3.83$) scoring higher than males ($M = 4.40, S.D. = 3.44$) in impression management. The analyses also indicated a significant difference in social gamblers, $F(1, 31) = 4.33, p < .05$, with women ($M = 7.71, SD = 3.87$) scoring higher than men ($M = 5.13, SD = 3.20$) in self-deception. The scores for problem gamblers were not significantly different.

Sex Differences in Social Desirability and Specific Gambling Behaviours

Social desirability and indices of problem behaviour taken from the SSGB and SOGS were examined further to determine if sex differences would emerge. For women, the analyses revealed a number of significant negative correlations between impression management and problem gambling behaviours. On the SSGB (see Table 4), these relate to irritability with attempts at stopping gambling, increased spending, chasing losses, lying about gambling activities, feeling detached from surroundings, easily bored and attempts at suicide. On the SOGS (see Table 5), these relate to chasing losses and

identifying gambling as a problem. Correlations with self-deception were not significant on either measure. For men, the analyses indicated significant positive and significant negative correlations with both impression management and self-deception. On the SSGB (see Table 6), positive correlations were found between impression management and (1) psychological problems and (2) attempted suicides. Negative correlations were found between impression management and (1) feelings of boredom and (2) thoughts of death. Positive correlations were identified between self-deception and (1) being a regular gambler and (2) pre-determined acceptable losses. Negative correlations were computed between self-deception and (1) feelings of boredom and (2) risk taking behaviour. On the SOGS, one significant negative correlation was found between impression management and lost time from work or school, $r = -.44, p < .01$. No significant correlations with self-deception were found.

Social Desirability and Depression (BDI Scores)

Correlational analyses were used to investigate the relationship between both measures of social desirability and depression. There were no significant correlations between depression and impression management. However, the results revealed a significant negative correlation between depression and self-deception, $r = -.35, p < .01$. This analyses was repeated separately for each of the groups. The correlations in impression management were not significant. A significant negative correlation between BDI scores and self-deception was found in non-gamblers, $r = -.59, p < .01$ with negative and non-significant correlations between depression and self-deception in social and problem gamblers.

Sex Differences in Social Desirability and Depression

Further analyses revealed correlations with impression management for both men and women were negative and not significant. A significant negative correlation was found in men between self-deception and BDI scores, $r = -.41, p < .05$. The negative correlation in women between self-deception and BDI scores approached significance, $r = -.31, p = .051$.

Gambling and Depression (BDI Scores)

As increased urges to gamble and increased gambling activity have been reported during periods of depression (DSM-IV-TR; APA 2000), the depression levels (as measured by the BDI) for each group were also investigated. The analyses reflect a significant difference in depression scores between groups, $F(2, 72) = 12.06, p < .001$ with problem gamblers reporting a mean of 16 ($S.D. = 9.64$), compared to social gamblers and non-gamblers with means of 6.67 ($S.D. = 6.77$) and 6.86 ($S.D. = 4.97$) respectively.

Sex Patterns in Gambling and Depression (BDI Scores)

As depression is more frequently present in female problem gamblers, sex patterns in depression were also investigated. Women reported a significant difference in BDI scores between groups, $F(2, 37) = 8.19, p < .01$, with means of 20.5 ($S.D. = 8.73$), 7.88 ($S.D. = 8.62$), and 6.71 ($S.D. = 5.39$) for problem gamblers, social gamblers, and non-gamblers respectively. The men also reported a significant difference between groups in BDI scores, $F(2, 32) = 6.26, p < .01$ with the means of 14.07 ($S.D. = 9.65$), 5.38 ($S.D. = 3.9$), and 7.40 ($S.D. = 3.58$) for problem gamblers, social gamblers and non-gamblers respectively. None of the sex differences within each group were significant.

Discussion

This study yielded some interesting findings that were contrary to what was expected. No evidence was found to support the hypothesis that self-deception would be a prominent factor in problem gambling behaviour. Instead, the results of the analysis suggest a significant negative correlation exists between impression management and both measures of problem gambling behaviour, the South Oaks Gambling Screen and the Self-Evaluation Survey of Gambling Behaviour. This is not consistent with the findings by Mushquash (2004) who found a weak yet positive correlation between gambling and impression management.

As well, significant negative correlations were found to exist between impression management and numerous specific indices of problem gambling behaviour. Increased scores on impression management were associated with decreased scores in chasing losses, a pre-occupation with gambling, irritability when attempting to cut down gambling, requiring increased amounts of money to obtain the desired level of excitement, risk-taking, detachment from surroundings, feeling easily bored, committing criminal acts to finance gambling, gambling more than intended, arguments over money, and thoughts of death. Problem gamblers in this study were less concerned than both social gamblers and non-gamblers with how they presented themselves and making a good impression on others. Four indices were found to correlate negatively with self-deception: risk-taking, concern with the approval of others, feeling easily bored, and arguments over money.

What could account for the overall findings? A few possibilities exist.

In this study, many of the negative correlations with social desirability involve aspects of problem gambling behaviours that could be indicative of a behavioural addiction. Although the DSM-IV-TR (APA, 2000) classifies problem (pathological) gambling as an impulse control disorder, when viewing problem gambling in the context of an addiction, the results seem to make sense. One might speculate that individuals addicted to gambling are more focused on their gambling activities and problem behaviours and less concerned about their image and what others think. This is somewhat supported by these results as impression management levels for various problem gambling behaviours decreased significantly as gambling levels increased.

Another possibility is that the measurement instrument (BIDR) may not accurately reflect the components of social desirability. In a recent study involving various scales of social desirability, Helmes and Holden (2003) found support for a two factor model of social desirability that did not correspond with the self-deception and impression management model introduced by Paulhus (1984). They propose an alternate model of social desirability comprised of two components reflecting a need for approval which was associated with sensitivity to social demands, and perceived personal adjustment and self-sufficiency which was associated with self-esteem. Further research in this area with other measures of social desirability is recommended.

In addition, the interpretation of both BIDR scales has been disputed. Given the relationship of his components of social desirability with the Big Five personality traits, Paulhus (2002) questions his earlier contention that the main difference between the two BIDR components is the level of consciousness (conscious vs. unconscious bias).

Paulhus (2002) and Paulhus and John (1998) have suggested that both scales are associated with conscious and unconscious deceptive styles or self-favouring tendencies involving an egoistic or moralistic bias. Pauls and Crost (2004) maintain that both impression management and self-deception scales reflect biased self-views and both respond to situational pressures induced by faking instructions. This implies that both scales are susceptible to conscious distortions. Perhaps the current results reflect both conscious and unconscious distortions.

The influence of personality should also be considered. Raylu and Oei (2002) have associated certain personality traits with problem gamblers. Paulhus and John (1998) indicate that biases shown by individuals are more likely to be in the same direction as their personality traits.

Specifically, increased scores in impression management were associated with decreased scores in lying (see Table 2). Initially, this result seemed counter-intuitive as creating a more positive image often involves a tailoring of responses (Paulhus & John, 1998) or lying. Seto, Khattar, Lalumiere, and Quinsey (1997) found similar negative correlations between impression management and high scores on psychopathy measures. Holden and Fekken (1989) suggest that rather than self-deception and impression management, a higher order, two-component model of social desirability exists. These components were interpreted as a sense of self capability and a sensitivity in relations with others. When substituting the higher-order concept of interpersonal sensitivity for impression management, the negative correlation appears reasonable.

Socially desirable responses tended to be more frequent in the non-gamblers (impression management) and social gamblers (self-deception). As there is no positive association between social desirability and problem gambling behaviour, what else could account for problem gamblers' over-reporting of wins? Cognitive distortions could be a factor. Higher levels of cognitive biases and distortions have been reported by individuals with gambling problems (Steenbergh et al., 2002; Toneatto et al., 1997). A memory bias of which the gambler is unaware was one explanation offered for consideration by Jamieson et al. (2003). A memory bias employing selective recall can result in attending to more positive outcomes (wins) than negative outcomes (losses) thereby over-estimating wins. Subsequently, winning becomes so important that losing becomes inconsequential and less salient (Sharpe, 2002). Similarly utilizing a confirmatory bias, the gambler would pay more attention to information that supports their view (winning) and ignore information that is contrary (losing). With the availability heuristic, there is a tendency for salient events (wins) to be remembered; the easier it comes to mind, the more frequently it seems to occur, so the frequency is overestimated (Delfabbro, 2004). If the gambler also exhibits an illusion of control, he or she may then attribute the win to personal skill or knowledge as having influenced the outcome, which then reinforces the distorted belief. The skill in knowing how to gamble is confused with the skill to influence outcome (Delfabbro, 2004). It is also possible that impulsivity traits may play a role. Sharpe (2002) suggests that aspects of impulsivity may encourage gamblers to attend to positive outcomes.

Additional analysis revealed sex differences in socially desirable response patterns. Women generally scored significantly higher on impression management. There were significant differences between the three groups with non-gamblers scoring the highest and problem gamblers scoring the lowest. Significant negative correlations also existed between various specific gambling behaviours and impression management, but there was no relationship with self-deception. This could imply that women problem gamblers take less effort in concealing problem gambling behaviours suggesting that other aspects of gambling may be more important. For men, a few significant positive and negative correlations existed between gambling behaviours and both impression management and self-deception. Men scoring higher on impression management were more likely to experience psychological problems and attempt suicides, yet less likely to miss work or school, or admit to thinking about death. Those scoring higher on self-deception were more likely to gamble on a regular basis but take less risks and establish acceptable losses in advance. This could suggest that impression management (maintaining an image) may have serious psychological consequences and in some cases be life-threatening for male gamblers. Paulhus and John (1998) submit that differences in social desirability may be consistent with traditional sex-role distinctions and values with women scoring higher on communion-related traits such as getting along and the need for approval.

It was interesting to note that both male and female problem gamblers reported significantly higher depression scores than the other two groups, yet there was no significant correlation between depression and either impression management or self-

deception in problem gamblers. Depression levels do not appear to have a significant impact on response patterns in problem gamblers.

The limitations of the current research should be noted. One potential limitation was the sample size. Although there were a sufficient number of participants for each of the three groups, the sample size was not large. A second limitation is the reliance on self-report measures with no corroboration, case history or clinical interview. Relying solely on self-report data carries with it the possibility of inaccuracy or misrepresentation.

Future research

Much of the previous literature on problem gambling appears to involve participants that are undergraduate students. Replication of these findings with a larger number of participants that are community-based would assist in determining whether these results are unique to this study or are representative of the general population. Measures of social desirability other than the BIDR should also be considered in future studies. The administration of personality measures could be included to explore the associations of personality, gambling, and socially desirable responding.

In addition, further research is needed on the influence of cognitive distortions in problem gambling. An examination of the sex differences in the frequency and type of distortions would also be of interest.

There was a high prevalence of First Nations among the problem gamblers in this study. Gambling behaviour in First Nations would be an area to pursue in future research.

With the rapid expansion of gambling opportunities, we can expect an increase in the numbers of problem gamblers that will require treatment. The recognition of socially desirable response patterns in problem gamblers, the behavioural implications, and the influence of biased self-views and cognitive distortions can be important when designing effective intervention strategies for the treatment of problem gambling and any associated disorders.

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Appendix A

Demographic Sheet

STUDY ID:

LAKEHEAD GAMBLING BEHAVIOUR RESEARCH GROUP

Date

Sex male
 female

Age

Weight

Height

Ethnicity African Caucasian Other
 Asian First Nations

Years of Education

Marital Status never married divorced
 married widowed
 separated

Years Of Education

Occupation

Income

<input type="checkbox"/> less than \$5,000	<input type="checkbox"/> \$36,000 - \$40,000	<input type="checkbox"/> \$71,000 - \$75,000
<input type="checkbox"/> \$5,000 - \$10,000	<input type="checkbox"/> \$41,000 - \$45,000	<input type="checkbox"/> \$76,000 - \$80,000
<input type="checkbox"/> \$11,000 - \$15,000	<input type="checkbox"/> \$46,000 - \$50,000	<input type="checkbox"/> \$81,000 - \$85,000
<input type="checkbox"/> \$16,000 - \$20,000	<input type="checkbox"/> \$51,000 - \$55,000	<input type="checkbox"/> \$86,000 - \$90,000
<input type="checkbox"/> \$21,000 - \$25,000	<input type="checkbox"/> \$56,000 - \$60,000	<input type="checkbox"/> \$91,000 - \$95,000
<input type="checkbox"/> \$26,000 - \$30,000	<input type="checkbox"/> \$61,000 - \$65,000	<input type="checkbox"/> \$96,000 - \$100,000
<input type="checkbox"/> \$31,000 - \$35,000	<input type="checkbox"/> \$66,000 - \$70,000	<input type="checkbox"/> more than \$100,000

Appendix B

Self-Evaluation Survey of Gambling Behaviour (DSM-IV Based Questionnaire)

SELF-EVALUATION SURVEY OF GAMBLING BEHAVIOUR

	<i>Never</i>	<i>Yes, at some time in my life</i>	<i>Yes, in the past year</i>	<i>Yes, in the past month</i>
1. Have you ever tried to cut down gambling, and then found that you couldn't?	0	1	2	3
2. Have you ever tried to cut down or stop gambling, and found that you were restless or irritable?	0	1	2	3
3. Do you ever gamble as a way of escaping from problems in life or as a way of getting rid of unpleasant feelings?	0	1	2	3
4a. Have you ever lost a job or got into trouble at work because of gambling?	0	1	2	3
4b. Have you ever jeopardized or lost a marriage or other significant relationship because of gambling?	0	1	2	3
5. Have you ever committed a crime to get money for gambling (ie, stealing, forgery, fraud, etc)?	0	1	2	3
6. Do you find yourself thinking often about gambling, such as reliving past gambling experiences, planning your next gambling venture, or thinking of ways to get money with which to gamble?	0	1	2	3
7. Do you find you need to gamble with increasing amounts of money in order to get the desired level of excitement?	0	1	2	3
8. Do you find yourself gambling in an attempt to recover your previous gambling losses?	0	1	2	3
9. Have you ever lied to family, friends, or others about your gambling?	0	1	2	3
10. Have you ever turned to family or friends to help you with financial problems that were caused by your gambling?	0	1	2	3

	Yes	No
1. I always gamble only with friends, family, or coworkers, and never by myself.	<input type="checkbox"/>	<input type="checkbox"/>
2. If I decide in advance how long I will gamble for, I can usually stick to that time.	<input type="checkbox"/>	<input type="checkbox"/>
3. I usually decide before I start gambling how much money I can lose.	<input type="checkbox"/>	<input type="checkbox"/>
4. Have you ever felt guilty because of your gambling?	<input type="checkbox"/>	<input type="checkbox"/>
5. Have you ever felt detached from your surroundings while gambling, as though in a trance?	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you take a lot of risks in life?	<input type="checkbox"/>	<input type="checkbox"/>
7. Do you see money as the solution to almost all your problems?	<input type="checkbox"/>	<input type="checkbox"/>
8. Would you describe yourself as a "big spender"?	<input type="checkbox"/>	<input type="checkbox"/>
9. Would you describe yourself as a competitive person?	<input type="checkbox"/>	<input type="checkbox"/>
10. Would you say that in general you are easily bored?	<input type="checkbox"/>	<input type="checkbox"/>
11. Would you describe yourself as a "workaholic"?	<input type="checkbox"/>	<input type="checkbox"/>
12. Do you feel that in general you are too concerned with receiving the approval of other people?	<input type="checkbox"/>	<input type="checkbox"/>
13. Do you feel you have restructured your life to revolve around gambling?	<input type="checkbox"/>	<input type="checkbox"/>
14. Have you ever been seen by a mental health professional for any psychological problems? If yes, what type of problem(s) did you have? _____	<input type="checkbox"/>	<input type="checkbox"/>
15. Do you have any current medical problems? If yes, what type of problem(s) did you have? _____	<input type="checkbox"/>	<input type="checkbox"/>
16. In the past year have you thought a lot about death?	<input type="checkbox"/>	<input type="checkbox"/>
17. In the past year have you felt like you wanted to die?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
18. In the past year have you felt so low at times that you have thought about committing suicide.	<input type="checkbox"/>	<input type="checkbox"/>
19. Have you ever attempted suicide?	<input type="checkbox"/>	<input type="checkbox"/>
20. Have you ever attempted suicide at some other time in your life? Were these thoughts or feelings of suicide due to problems related to your gambling?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
21. I gamble on a regular basis. I gamble on a binge basis.	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
22. Do you gamble because (you may check more than one) I gamble for excitement I gamble to make money I gamble to get rid of unpleasant feelings I don't know why I gamble Other reason	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Appendix C

South Oaks Gambling Screen

SOGS

1. Please indicate which of the following types of gambling you have done in your lifetime. For each type, mark one answer: “not at all,” “less than once a week,” or “once a week or more.”

Not at all	Less than once a week	Once a week or more
---------------	--------------------------------	---------------------------

- | | | | | |
|----|--------------------------|--------------------------|--------------------------|--|
| a. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | played cards for money |
| b. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | bet on horses, dogs, or other animals (in off-track betting, at the track, or with a bookie) |
| c. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | bet on sports (parlay cards, with a bookie) |
| d. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | played dice games (including craps, over and under, or other dice games) for money |
| e. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | went to casino (legal or otherwise) |
| f. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | played the numbers or bet on lotteries |
| g. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | played bingo |
| h. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | played the stock and/or commodities market |
| i. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | played slot machines, poker machines, or other gambling machines |
| j. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | bowled, shot pool, played golf, or played some other game of skill for money |

2. What is the largest amount of money you have ever gambled with on any one day?
- never have gambled
 - \$1 or less
 - more than \$1 up to \$10
 - more than \$10 up to \$100
 - more than \$100 up to \$1,000
 - more than \$1,000 up to \$10,000
 - more than \$10,000
3. Do (did) your parents have a gambling problem?
- both my father and mother gamble (or gambled) too much
 - my father gambles (or gambled) too much
 - my mother gambles (or gambled) too much
 - neither one gambles (or gambled) too much
4. When you gamble, how often do you go back another day to win back money you lost?
- never
 - some of the time (less than half the time) I lost
 - most of the time I lost
 - every time I lost
5. Have you ever claimed to be winning money gambling but weren't really? In fact, you lost?
- never (or never gamble)
 - yes, less than half the time I lost
 - yes, most of the time
6. Do you feel you have ever had a problem with gambling?
- no
 - yes, in the past, but not now
 - yes
7. Did you ever gamble more than you intended to? yes no
8. Have people criticized your gambling? yes no
9. Have you ever felt guilty about the way you gamble or what happens when you gamble? yes no
10. Have you ever felt like you would like to stop gambling but you didn't think you could? yes no
11. Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, or other important people in your life? yes no

12. Have you ever argued with people you live with over how you handle money? yes no
13. (If you answered yes to question 12): Have money arguments ever centered on your gambling? yes no
14. Have you ever borrowed from someone and not paid them back as a result of your gambling? yes no
15. Have you ever lost time from work (or school) due to gambling? yes no
16. If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from? (check "yes" or "no" for each)
- a. from household money yes no
 - b. from your spouse yes no
 - c. from other relatives or in-laws yes no
 - d. from banks, loan companies, or credit unions yes no
 - e. from credit cards yes no
 - f. from loan sharks yes no
 - g. you cashed in stocks, bonds, or other securities yes no
 - h. you sold personal or family property yes no
 - i. you borrowed on your checking account (passed bad checks) yes no
 - j. you have (had) a credit line with a bookie yes no
 - k. you have (had) a credit line with a casino yes no
-

Appendix D

Balanced Inventory of Desirable Responding

BIDR Version 6 - Form 40

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

	<i>Not True</i>		<i>Somewhat True</i>			<i>Very True</i>
1. My first impressions of people usually turn out to be right.	1	2	3	4	5	6 7
2. It would be hard for me to break any of my bad habits.	1	2	3	4	5	6 7
3. I don't care to know what other people really think of me.	1	2	3	4	5	6 7
4. I have not always been honest with myself.	1	2	3	4	5	6 7
5. I always know why I like things.	1	2	3	4	5	6 7
6. When my emotions are aroused, it biases my thinking.	1	2	3	4	5	6 7
7. Once I've made up my mind, other people can seldom change my opinion.	1	2	3	4	5	6 7
8. I am not a safe driver when I exceed the speed limit.	1	2	3	4	5	6 7
9. I am fully in control of my own fate.	1	2	3	4	5	6 7
10. It's hard for me to shut off a disturbing thought.	1	2	3	4	5	6 7
11. I never regret my decisions.	1	2	3	4	5	6 7
12. I sometimes lose out on things because I can't make up my mind soon enough.	1	2	3	4	5	6 7
13. The reason I vote is because my vote can make a difference.	1	2	3	4	5	6 7
14. My parents were not always fair when they punished me.	1	2	3	4	5	6 7
15. I am a completely rational person.	1	2	3	4	5	6 7
16. I rarely appreciate criticism.	1	2	3	4	5	6 7
17. I am very confident of my judgments.	1	2	3	4	5	6 7

	<i>Not True</i>		<i>Somewhat True</i>		<i>Very True</i>		
18. I have sometimes doubted my ability as a lover.	1	2	3	4	5	6	7
19. It's all right with me if some people happen to dislike me.	1	2	3	4	5	6	7
20. I don't always know the reasons why I do the things I do.	1	2	3	4	5	6	7
21. I sometimes tell lies if I have to.	1	2	3	4	5	6	7
22. I never cover up my mistakes.	1	2	3	4	5	6	7
23. There have been occasions when I have taken advantage of someone.	1	2	3	4	5	6	7
24. I never swear.	1	2	3	4	5	6	7
25. I sometimes try to get even rather than forgive and forget.	1	2	3	4	5	6	7
26. I always obey laws, even if I'm unlikely to get caught.	1	2	3	4	5	6	7
27. I have said something bad about a friend behind his or her back.	1	2	3	4	5	6	7
28. When I hear people talking privately, I avoid listening.	1	2	3	4	5	6	7
29. I have received too much change from a salesperson without telling him or her.	1	2	3	4	5	6	7
30. I always declare everything at customs.	1	2	3	4	5	6	7
31. When I was young I sometimes stole things.	1	2	3	4	5	6	7
32. I have never dropped litter on the street.	1	2	3	4	5	6	7
33. I sometimes drive faster than the speed limit.	1	2	3	4	5	6	7
34. I never read sexy books or magazines.	1	2	3	4	5	6	7
35. I have done things that I don't tell other people about.	1	2	3	4	5	6	7
36. I never take things that don't belong to me.	1	2	3	4	5	6	7

STUDY ID: _____

	<i>Not True</i>		<i>Somewhat True</i>		<i>Very True</i>		
37. I have taken sick-leave from work or school even though I wasn't really sick	1	2	3	4	5	6	7
38. I have never damaged a library book or store merchandise without reporting it.	1	2	3	4	5	6	7
39. I have some pretty awful habits.	1	2	3	4	5	6	7
40. I don't gossip about other people's business.	1	2	3	4	5	6	7

Appendix E

Internal-External Control Scale

This is a questionnaire to find out the way in which certain important events in our society affect different people. This is a measure of personal belief; there are no right or wrong answers. Each item consists of a pair of alternatives lettered A or B. Please select the one statement of each pair (*and only one*) which you more strongly *believe* to be the case as far as you're concerned. Be sure to select the one you actually *believe* to be more true than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers. Please answer these items *carefully* but do not spend too much time on any one item. *Be sure to find an answer for every choice.* In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item *independently* when making your choice; do not be influenced by your previous choices.

I more strongly believe that:

circle one

1. **A** Children get into trouble because their parents punish them too much.
 B The trouble with most children nowadays is that their parents are too easy with them.
2. **A** Many of the unhappy things in people's lives are partly due to bad luck.
 B People's misfortunes result from the mistakes that they make.
3. **A** One of the major reasons why we have wars is because people don't take enough interest in politics.
 B There will always be wars, no matter how hard people try to prevent them.
4. **A** In the long run people get the respect they deserve in this world.
 B Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. **A** The idea that teachers are unfair to students is nonsense.
 B Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. **A** Without the right breaks one cannot be an effective leader.
 B Capable people who fail to become leaders have not taken advantage of their opportunities.
7. **A** No matter how hard you try some people just don't like you.
 B People who can't get others to like them don't understand how to get along with others.

I more strongly believe that:*circle one*

8. **A** Heredity plays a major role in determining one's personality.
 B It is one's experiences in life which determine what they're like.
9. **A** I have often found that what is going to happen will happen.
 B Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. **A** In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.
 B Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. **A** Becoming a success is a matter of hard work, luck has little or nothing to do with it.
 B Getting a good job depends mainly on being in the right place at the right time.
12. **A** The average citizen can have an influence in government decisions.
 B This world is run by the few people in power, and there is not much the little guy can do about it.
13. **A** When I make plans, I am almost certain that I can make them work.
 B It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. **A** There are certain people who are just no good.
 B There is some good in everybody.
15. **A** In my case getting what I want has little or nothing to do with luck.
 B Many times we might as well decide what to do by flipping a coin.
16. **A** Who gets to be the boss often depends on who was lucky enough to be in the right place first.
 B Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.
17. **A** As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
 B By taking an active part in political and social affairs the people can control world events.

I more strongly believe that:*circle one*

18. A Most people don't realize the extent to which their lives are controlled by accidental happenings.
B There really is no such thing as "luck".
19. A One should always be willing to admit mistakes.
B It is usually best to cover up one's mistakes.
20. A It is hard to know whether or not a person really likes you.
B How many friends you have depends upon how nice a person you are.
21. A In the long run the bad things that happen to us are balanced by the good ones.
B Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. A With enough effort we can wipe out political corruption.
B It is difficult for people to have much control over the things politicians do in office.
23. A Sometimes I can't understand how teachers arrive at the grades they give.
B There is a direct connection between how hard I study and the grades I get.
24. A A good leader expects people to decide for themselves what they should do.
B A good leader makes it clear to everybody what their jobs are.
25. A Many times I feel that I have little influence over the things that happen to me.
B It is impossible for me to believe that chance or luck plays an important role in my life.
26. A People are lonely because they don't try to be friendly.
B There's not much use in trying too hard to please people; if they like you, they like you.
27. A There is too much emphasis on athletics in high school.
B Team sports are an excellent way to build character.

I more strongly believe that:*circle one*

28. **A** What happens to me is my own doing.
B Sometimes I feel that I don't have enough control over the direction my life is taking.
29. **A** Most of the time I can't understand why politicians behave the way they do.
B In the long run the people are responsible for bad government on a national as well as on a local level.

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Appendix F

Beck Depression Inventory - II

BDI-II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it.

2. Pessimism

- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

3. Past Failure

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6. Punishment Feelings

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7. Self-Dislike

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

8. Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens

9. Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10. Crying

- 0 I don't cry anymore than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

_____ Subtotal Page 1

11. Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people.
- 3 It's hard to get interested in anything.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it much more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14. Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

- 0 I have not experienced any change in my sleeping pattern.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18. Changes in Appetite

- 0 I have not experienced any change in my appetite
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual.
- 2a My appetite is much less than before.
- 2b My appetite is much greater than usual.
- 3a I have no appetite at all.
- 3b I crave food all the time.

19. Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

_____ Subtotal Page 2

_____ Subtotal Page 1

_____ **Total Score**

Table 1

Demographics – Means, Standard Deviations and Raw Frequencies (N = 75)

Variable	Non-Gambler (n = 22)	Social Gambler (n = 33)	Problem Gambler (n = 20)	
Means and Standard Deviations				
Age(Years)	M = 32.46 (SD = 15.84)	M = 40.06 (SD = 16.68)	M = 36.25 (SD = 13.53)	
Education(Years)*	M = 15.19 (SD = 1.63)	M = 14.26 (SD = 2.7)	M = 13.4 (SD = 3.03)	
Raw Frequencies (Percent)				
Sex:	Male**	22.7	48.5	70.0
	Female**	77.3	51.5	30.0
Ethnicity:	Caucasian**	22.7	38.7	12.09
	First Nations	1.3	-	9.3
	Asian	1.3	1.3	1.3
	African	1.3	-	1.3
	Other	2.7	4.0	2.7
Employment*	Unemployed	1.4	4.1	1.4
	Disability	1.4	-	1.4
	Student	16.2	8.1	6.8
	Retired	2.7	6.8	2.7
	Clerical/Admin	-	2.7	-
	Trade/Skill	2.7	4.1	1.4
	Professional	2.7	8.1	1.4
	Other	2.7	10.8	10.8
* One missing case				
** Significant difference at .01 level				

Table 1 (continued)

Demographics – Means, Standard Deviations and Raw Frequencies (N = 75)

Variable	Non-Gambler (n = 22)	Social Gambler (n = 33)	Problem Gambler (n = 20)
----------	-------------------------	----------------------------	-----------------------------

Raw Frequencies (Percent)

Income*

Less than \$10,000	16.2	16.2	10.0
\$10,000 - \$30,000	12.2	13.5	9.5
\$31,000 - \$50,000	1.4	8.1	1.4
Greater than \$50,000	-	5.8	4.1

Marital Status

Never married	18.7	21.3	18.7
Married	5.3	14.7	5.3
Divorced	4.0	4.0	2.7
Widowed	1.3	4.0	-

* One missing case

** Significant difference at .01 level

Table 2

Correlations of Impression Management and Self-Deception with SSGB Problem Gambling Behaviours

<u>Indices</u>	<u>Impression Management</u>	<u>Self-Deception</u>
Unable to stop gambling	-.15	-.13
Irritable when stop gambling	-.27*	-.17
Gamble to escape problems	-.09	.06
Job loss or trouble at work	-.12	.11
Jeopardized relationship/marriage	-.13	-.11
Crimes to finance gambling	-.24*	.11
Preoccupation with gambling	-.23*	.05
Require increased money	-.27*	-.01
Chasing to recover losses	-.32**	-.06
Lie about gambling	-.35**	-.05
Help for financial problems (gambling)	-.17	-.08
Pre-determined acceptable losses	.04	.11
Detached from surroundings	-.36**	-.12
Taking risks	-.31**	-.34**
Money solves most problems	-.31**	-.06
Easily bored	-.40**	-.34**
Concerned with approval of others	-.13	-.29*
Psychological problems	.10	-.14
Thoughts of death	-.32**	-.12
Suicide attempts	-.07	-.16
Regular gambler	-.10	-.10

**Correlation is significant at the .01 level (2-tailed)
 * Correlation is significant at the .05 level (2-tailed)

Table 3

Correlations of Impression Management and Self-Deception with SOGS Problem

Gambling Behaviours

<u>Indices</u>	<u>Impression Management</u>	<u>Self-Deception</u>
Chasing lost money	-.34**	-.09
Lie about winning	-.20	.05
Identify gambling as problem	-.29*	-.18
Gamble more than intended	-.24*	.02
Others criticized gambling	-.17	.07
Guilt about gambling	-.16	.02
Could not stop	-.17	-.07
Hidden gambling from others	-.19	-.05
Arguments over money	-.25*	-.28*
Money arguments about gambling	-.16	-.17
Borrowed money not repaid	-.11	-.04
Lost time from work or school	-.33*	.08

**Correlation significant at the .01 level (2-tailed)
 * Correlation significant at the .05 level (2-tailed)

Table 4

Correlations of Sex Differences in Social Desirability with Specific Gambling Behaviours

Females (N = 40)

<u>SSGB Indices</u>	<u>Impression Management</u>	<u>Self-Deception</u>
Unable to stop	-.29	-.10
Irritable when stop	-.39*	-.03
Gamble to escape problems	-.12	.07
Job loss or trouble at work	-.02	.27
Jeopardized relationship/marriage	-.18	-.11
Crimes to finance gambling	-.19	.15
Preoccupation with gambling	-.18	-.04
Require increased money	-.42**	-.12
Chasing to recover losses	-.45**	-.10
Lie about gambling	-.45**	-.14
Help for financial problems (gambling)	-.30	-.05
Pre-determined acceptable losses	-.09	-.14
Detached from surroundings	-.35*	.07
Taking risks	-.19	-.22
Money solves most problems	-.22	.08
Easily bored	-.31*	-.22
Concerned with approval of others	-.13	-.28
Psychological problems	-.29	-.22
Thoughts of death	-.29	-.20
Suicide attempts	-.36*	-.15
Regular gambler	-.09	-.01

**Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

Table 5

Correlations of Sex Differences in Social Desirability with Specific Gambling Behaviours

Females (N = 40)

<u>SOGS Indices</u>	<u>Impression Management</u>	<u>Self-Deception</u>
Chasing lost money	-.41*	-.16
Lie about winning	-.30	-.03
Identify gambling as problem	-.42**	-.17
Gamble more than intended	-.30	.01
Others criticized gambling	-.12	.09
Guilt about gambling	-.23	-.02
Could not stop	-.19	.15
Hidden gambling from others	-.26	.06
Arguments over money	-.14	-.28
Money arguments – gambling	-.36	-.17
Borrowed money not repaid	-.19	.15
Lost time from work or school	-.24	.01

**Correlation significant at the .01 level (2-tailed)
 * Correlation significant at the .05 level (2-tailed)

Table 6

Correlations of Sex Differences in Social Desirability with Specific Gambling Behaviours

Males (N = 35)

<u>SSGB Indices</u>	<u>Impression Management</u>	<u>Self-Deception</u>
Unable to stop	-.08	-.13
Irritable when stop	-.09	-.29
Gamble to escape problems	.10	.13
Job loss or trouble at work	-.27	-.09
Jeopardized relationship/marriage	-.02	-.09
Crimes to finance gambling	-.32	.07
Preoccupation with gambling	-.10	.27
Require increased money	-.00	.16
Chasing to recover losses	-.11	.01
Lie about gambling	-.14	.11
Help for financial problems (gambling)	.00	-.11
Pre-determined acceptable losses	.19	.38*
Detached from surroundings	-.33	-.25
Taking risks	-.29	-.45**
Money solves most problems	-.28	-.13
Easily bored	-.48**	-.49**
Concerned with approval of others	-.13	-.31
Psychological problems	.62**	-.07
Thoughts of death	-.35*	.01
Suicide attempts	.34*	-.19
Regular gambler	-.11	.45**

**Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)