

INTERNAL AND EXTERNAL ATTRIBUTION OF SUCCESS AND FAILURE IN A GAMBLING AND NON-GAMBLING SITUATION¹

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ABSTRACT

The aim of the current study was to compare the internal and external attributions of success and failure in a sample including recreational gamblers and non-gamblers. Seventy-seven participants (32 males 44 females, 1 unknown sex), ranging in age from 18 to 72 years, who had all gambled at some time in their life, participated in the current study. The Multidimensional-Multiattributational Causality Scale (Lefcourt, Von Baeyer, Ware, & Cox, 1979), a modified version of South Oaks Gambling Screen (Lesieur & Blume, 1993), and Youth Gambling Behaviour Survey (Moore & Ohtsuka, 1997) were administered to measure attribution, problem gambling and illusion of control beliefs. It was hypothesised that internal and external attributions of success or failure in skill and chance situations will be different a) between individuals with no gambling problem and those with a possible gambling problem, and b) between individuals with high or low levels of illusion of control beliefs. The results showed a statistically significant difference in attribution between the gambling and non-gambling situations for all participants. In a gambling situation, respondents attributed successes and failures externally, whereas in a work/study situation, they attributed successes and failures internally. However, between gamblers and non-gamblers, no differences were found in the pattern of external/internal attributions. Possible problem gamblers showed high external Locus of Control scores for both gambling and work/study context. Individuals with high illusion of control beliefs had significantly higher ratings for external attributions in both situations than those with low illusion of control beliefs.

Introduction

Self-perception, social comparison and self-attribution all influence the way we feel about ourselves and form basis for our self-evaluation about ourselves. Further, research evidence abounds highlighting the relationship between self-perception and psychological well-being. Of particular interest to gambling researchers is self-attribution about success and failure

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(Rotter, 1966; Lefcourt, 1982). In general, people attribute the outcome of their action to either internal or external causes. Research has shown that different individuals subscribe different perceptions of the causes to the outcomes of their action. Some people believe that they are in control of their own fate, while others believe the outcome of their action is determined by external factors such as luck, fate or chance. According to Rotter (1966), people form generalised expectancies that outcomes are internally or externally controlled through their experiences. Locus of control therefore is clearly defined as a psychological trait arising from the past experience. However, this learning through experience is not likely to involve straightforward sampling processes of the objective probability of events.

Firstly, our ability to correctly assess and evaluate probability is neither objective nor accurate. Kahneman and Tversky (1972) were amongst the first to note that people's intuitions about probability are faulty, with decision making errors being both widespread and predictable. In their 1974 article *Judgement under uncertainty: Heuristics and Biases* (Tversky & Kahneman), they identified three primary heuristics that people utilise to predict the probability of an event, namely representativeness, availability and anchoring, none of which are objective or accurate. These heuristics simplify complex probability events, resulting in systematic and predictable errors due to inherent faults in human judgement and decision making (Tversky & Kahneman, 1974; 1981). They contend that people's decisions and attributions regarding probability events are behaviourally, rather than rationally driven through loss aversion which led to the development of prospect theory which describes behavioural bias in terms of human factors, rather than rational economic ones (Kahneman, Slovic & Tversky, 1982). Zeckhauser (1986) expanded on Tversky and Kahneman's research by stressing the importance of recognising when rational choice is and is not used. The emphasis is on understanding the basic behavioural and cognitive processes that underpin decision making and attribution in risky/uncertain and contextually different situations to establish a norm, and thus understand deviations. In addition, Nickerson (2002) cautions "the effort to produce or perceive randomness must be judged in light of the specifics of the tasks as understood by the people who perform them" (p. 353).

Other evidence in support of "subjective" nature of our probability judgment comes from Langer's (1975) investigation on illusion of control beliefs. Langer (1975) argued that people form "an expectancy of a personal success probability inappropriately higher than the objective probability would warrant" (p. 316) by misapplying the strategy that works for skill situations to chance situations. Familiarity, choice, active involvement, competition, or early success all contribute to a skill orientation and increase illusion of control beliefs. Although these beliefs are technically faulty, they are a powerful and reliable predictor of gambling behaviour and gambling problems (Moore & Ohtsuka, 1997; 1999). Langer (1977) noted that people act as if they can predict or control chance events and that people desire a sense of internal control even when gambling, whose outcomes are random. Hong and Chiu (1988) expanded on this by speculating that their sample including Chinese male 'externals' utilised gambling as a means to regain illusory internal control. Thus perceived control is extremely important to maintain successful functioning through perceptions of controlling chance events (Langer, 1977).

People often believe that successes can be attributed to internal factors such as skill and ability, whilst conversely failures can be attributed to external factors such as luck or the environment (Chau & Phillips, 1995; Thompson, et. al., 1998; Gilovich & Douglas, 1986; Rotter, 1966). Further, subjective judgements about outcomes, probability and control are often based on heuristics and internal desires, and can thus provide insight into feelings of self efficacy and consequently self-esteem (Stajkovic & Luthans, 1998). Heuristics often simplify complex

chance situations and as a consequence, cognitions are biased (Tversky & Kahneman, 1974; Thompson, et. al., 1998). This biased misperception appears to be the norm when gambling, whilst accuracy appears to be the norm when the focus of the task need not be on illusions of control (Thompson, et. al., 1998 Delfabbro & Winefield, 2000). Internal attributions (when successful) maintain high self esteem and efficacy, therefore it has been suggested that people initiate illusions of controlling chance situations when they are successful to internal factors, and likewise in skill situations to maintain self esteem in a variety of situations (Rotter, 1966; Hong & Chiu, 1988; Thompson, et. al., 1998). Thompson et al.'s (1998) findings regarding attributions in failed situations, that initiate less illusions of control and more realistic external attributions seem to further support this notion as "There is considerable evidence that people over estimate their control in various situations, but that under estimations of control and accurate assessments also occur." (p. 159).

The research questions proposed include: Do people attribute their success or failure differently (either internally or externally) depending on the skill (work/study) or chance (gambling) situations? Do individuals with a possible gambling problem attribute their success or failure differently in a gambling situation to a work/study situation when compared to non-problem gamblers? Do individuals initiate illusion of control beliefs in a gambling situation, rather than in a non-gambling situation?

The aim of the present study is to determine if there are differences in internal or external locus of control in different situations (work/study or gambling), and whether these differences vary according to gambling status and levels of illusion of control beliefs. It was hypothesised that a) internal and external attributions of success or failure in skill and chance situations will be different between individuals with no gambling problem and those with a possible gambling problem, and b) attribution of success or failure in skill and chance situations will be different between individuals with high or low levels of illusion of control beliefs. It was envisaged that these comparisons would shed light on understanding of the attitudes and contributing factors relating to problem gambling if attribution patterns differ between non-problem gamblers and possible problem gamblers.

Method

Participants

A total of 77 adult participants (33 males, 43 females, 1 unknown sex) aged between 18 and 72 years (M Age = 33.03 years, SD = 12.78 years) completed the questionnaire for the current study. Respondents were selected using a convenience sampling technique from students enrolled in a university in Melbourne, Australia and from the community outside the university. Sixty-five participants (85.5%) were born in Australia. Among 11 overseas-born participants (11.7%), 6 were born in Europe (7.8%), 2 each in Oceania (2.6%) and in Asia (2.6%), and 1 in Africa (1.3%). One participant did not report the place of birth.

Measures

All participants were provided with a survey containing a demographic questionnaire (age, sex, country of birth, education, and language spoken at home) and a modified version of the Multidimensional-Multiattributonal Causality Scale (MMCS) (Lefcourt, Von Baeyer, Ware, & Cox, 1979), a modified version of the South Oaks Gambling Screen (Lesieur & Blume, 1993),

which was adopted for the Australian context, and a subsection of youth gambling questionnaire (Moore & Ohtsuka, 1999) assessing illusion of control beliefs.

The Multidimensional-Multiattributonal Causality Scale (MMCS) (Lefcourt, Von Baeyer, Ware & Cox, 1979)

This instrument is designed to measure causal beliefs, the attribution of success and failure with respect to internal or external goal specific locus of control. The original MMCS measures attribution of success and failure on two contexts: achievement (work/study) and affiliation (social interaction). For the purpose of this study, the second context of affiliation was removed and substituted with achievement in gambling. Namely, participants were asked to consider their responses in terms of how they think and feel about causal beliefs and attribution of success and failure when at work and when they gamble. The instrument consists of two sections; each section includes 24 statements dealing with achievement locus of control, which are categorised into four subgroups, ability, effort, context and luck. Further six statements in each subgroup can be classified into either internal or external locus of control items. The 24 items on achievement were also modified to assess gambling specific locus of control. For example, Item 11 (Ability-Internal) "The most important ingredient in getting good grades is my academic ability" was altered to "The most important ingredient in winning at gambling is my skill". The 24 items were also altered to deal with a non-gambling achievement (work or studies). For example, Item 15 (Ability-Internal) "It seems to me that getting along with people is a skill" was altered to "The most important ingredient in getting good results at work is my ability". Participants were required to indicate a degree of agreement with each statement using a five-point Likert scale ranging from 1 (disagree) to 5 (agree). When coding responses, this scale was subsequently reduced to a scale of 0 (disagree) to 4 (agree) as per instructions. Scores for each section could range between 0 and 96 with high scores reflecting externality. Corrected Spearman Brown Split Half correlation's for the instrument in achievement (work/studies) attribution ranged between .67 - .76, whilst those for affiliation (gambling) attribution ranged between .61 - .65, thus it was a reasonably reliable instrument.

South Oaks Gambling Screen for the Australian Context (SOGS; Lesieur & Blume, 1993)

This instrument is designed to screen for participants who may have a gambling problem. Past research has shown that the South Oaks Gambling Screen appears to be a highly reliable screening instrument for gambling problems (Cronbach's alpha = .97, $p < .001$). Furthermore, it has been developed from DSM-III criteria and is highly correlated with the original DSM-III-R (South Oaks Foundation, 1992). Participants are categorised as having no gambling problem, a possible gambling problem, or a probable pathological gambling problem, based on the addition of 'at risk' responses. Some questions/ statements include: "Do you feel you've ever had a problem with gambling"; "Have you ever felt like you would like to stop gambling but didn't think you could". Participants responded 'yes' or 'no' to each question/statement, with 'yes' responses scoring 1 and 'no' responses scoring 0. For the purpose of the current study, and in accordance with the work of Gambino, Fitzgerald, Shaffer, Rennerand and Courtnage (1993) and Trevorrow and Moore (1998), participants who answered 'yes' to 0 or 1 of the scored questions on the SOGS were defined as having no gambling problems. Participants' who answered 'yes' to 2, 3 or 4 of the scored questions on the SOGS were defined as having possible gambling problems. In line with Trevorrow and Moore's (1998) definition, participants answering 'yes' to 5 or more on the SOGS, probably pathological gamblers, were conservatively labelled possible problem gamblers due to the small number of participants (six) falling into this category.

Youth Gambling Questionnaire (Moore & Ohtsuka, 1999)

Five items relating specifically to Illusion of Control Beliefs were utilised from this instrument for this study. Statements such as "Sometimes I think I might have the power to 'will' my numbers to come up in gambling games." were presented and participants rated their agreement to these statements a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Scores ranged from 5 to 25, with higher scores reflecting higher levels of illusion of control beliefs.

Procedure

The data collection of this research project was carried out as partial requirement of the independent research subject in which the second author was enrolled under the first author's supervision. The questionnaires were distributed over a period of 4 weeks to potential participants with help from research collaborators. The questionnaire was anonymous and the coversheet clearly stated that the participation to this research was strictly voluntary. Participants were told if they wished to, they were free to discontinue research involvement at any time during questionnaire administration. When the information sheet and the questionnaire were distributed for completing them at home, the return of the completed questionnaire in a sealed envelope constituted participant consent for involvement in the study. In the situation where participants filled out the questionnaire in the presence of a researcher, they signed the consent form before filling in the questionnaire.

Results

Responses were coded and entered into an SPSS Version 10 for Windows data set by the researchers. Data collected from the MMCS was grouped into four different variables: ability, effort, situation and luck. Measures of internal locus of control comprised of the ability and effort variables. Measures of external control comprised of the context and luck variables. Each variable contained six questions, three that would measure attributions to success and the remaining three measured attributions to failure (See Lefcourt et al., 1979 for details). Cronbach's alpha reliabilities were .81 for Gambling ability (high), .72 for Gambling effort (moderately high), .82 for Gambling situation (high) and .76 for Gambling Luck (moderately high). Cronbach's alpha reliabilities were .60 for work/studies ability (low), .64 for work/studies effort (low), .42 for work/studies situation (very low) and .80 for work/ studies luck (high).

Table 1 shows the means and standard deviations of internal locus of control by the context and gambling status.

Table 1

Means and Standard Deviations of Internal Locus of Control Scores by the Context and Gambling Status (N = 71)

Descriptive Statistics

problem gstatus		Mean	Std. Deviation	N
GINTERN	No Problem	17.0536	6.02546	56
	Possible Problem Gambling	21.1333	10.43939	15
	Total	17.9155	7.28942	71
WINTERN	No Problem	46.1786	7.61603	56
	Possible Problem Gambling	47.9333	6.61672	15
	Total	46.5493	7.40615	71

Notes GINTERN = Internal Locus of Control in Gambling Context, WINTERN = Internal Locus of Control in Work/Study Context

Internal Locus of Control scores are high for the work/study context for both non-problem and possible problem gamblers. In contrast, Internal Locus of Control in the gambling context is low for both non-problem gamblers and possible problem gamblers.

Table 2 shows the means and standard deviations in external locus of control scores by the context and gambling status.

Table 2

Means and Standard Deviations of External Locus of Control Scores by the Context and Gambling Status (N = 70)

Descriptive Statistics

problem gstatus		Mean	Std. Deviation	N
GEXTERN	No Problem	28.4182	8.70651	55
	Possible Problem Gambling	35.6000	6.42317	15
	Total	29.9571	8.74674	70
WEXTERN	No Problem	33.4727	8.53935	55
	Possible Problem Gambling	37.0000	8.44309	15
	Total	34.2286	8.58237	70

Notes GEXTERN = External Locus of Control in Gambling Context, WEXNTERN = External Locus of Control in Work/Study Context

Possible problem gamblers showed high external Locus of Control scores for both gambling and work/study context. In contrast, non-problem gamblers show slightly lower external locus of control in both situations.

A split-plot Analysis of Variance (ANOVA) was conducted to determine if there were significant differences between individuals without a gambling problem and those with a possible gambling problem on the internal and external locus of control measures. All statistical tests were conducted using an alpha level of .05. Regarding internal locus of control, a split-plot ANOVA revealed a statistically significant main effect of the context (work vs. gambling), $F(1,69) = 391.32, p < .0005$. However, the interaction of the context and the gambling status was not statistically significant, $F(1, 69) = .68, p = .41$, nor was the main effect of problem gambling status, $F(1, 69) = 3.42, p = .07$. Regarding the external locus of control,

the main effects of context and gambling status were both statistically significant, $F(1,68) = 8.69, p = .004$, and $F(1,68) = 5.98, p = .017$, respectively. However, the interaction of the context and the gambling status was not statistically significant, $F(1, 68) = 2.79, p = .10$.

It can therefore be concluded that attribution for success and failure in a gambling and work/studies situation does indeed differ. In a gambling situation participants tended to attribute success or failure to external attributes (luck and situation), whilst in a work/studies situation participants tended to attribute success or failure to internal attributes (ability and skill). Additionally, possible problem gamblers had significantly higher ratings for external attributions in both situations when compared to non-problem gamblers.

Table 3 shows means and standard deviations of Internal Locus of Control scores by the levels of Illusion of Control beliefs.

Table 3

Means and Standard Deviations of Internal Locus of Control Score by the levels of Illusion of Control Beliefs (N = 72)

Descriptive Statistics				
	ICB status	Mean	Std. Deviation	N
GINTERN	Low Illusion of Control	16.7500	5.83544	44
	High Illusion of Control	20.4643	9.46135	28
	Total	18.1944	7.61511	72
WINTERN	Low Illusion of Control	46.8409	6.82657	44
	High Illusion of Control	46.0714	8.22340	28
	Total	46.5417	7.35410	72

Notes: GINTERN = Internal Locus of Control in Gambling Context. WINTERN = Internal Locus of Control in Work Context

Internal Locus of Control scores are high for the work/study context regardless the levels of Illusion of Control Beliefs. In contrast, Internal Locus of Control scores are low in the gambling context regardless the levels of Illusion of Control Beliefs.

Table 4 shows means and standard deviations of External Locus of Control scores by the levels of Illusion of Control beliefs.

Table 4

Means and Standard Deviations of External Locus of Control Scores by the levels of Illusion of Control Beliefs (N = 71)

Descriptive Statistics

ICB status		Mean	Std. Deviation	N
GEXTERN	Low Illusion of Control	28.3571	8.81745	42
	High Illusion of Control	32.4828	8.09595	29
	Total	30.0423	8.71360	71
WEXTERN	Low Illusion of Control	32.6905	8.51824	42
	High Illusion of Control	36.8621	8.33548	29
	Total	34.3944	8.63461	71

Notes: GEXTERN = External Locus of Control in Gambling Context, WEXNTERN = External Locus of Control in Work/Study Context

A second split-plot ANOVA was conducted to determine if there were significant differences between internal and external attributions in a gambling and work/studies situation for individuals with high or low illusion of control beliefs. Again, the main effect of context on internal locus of control was statistically significant $F(1,70) = 557.57, p < .0005$. However, there were no significant differences in the levels of internal locus of control between individuals with high and low levels of illusion of control beliefs, $F(1, 70) = 1.19, p = .28$, nor was there the interaction of the context and the levels of illusion of control beliefs, $F(1, 70) = 3.61, p = .06$.

External attributions were also significantly different between work and gambling context, $F(1, 69) = 22.28, p < .0005$. In addition, the main effect of illusion of control beliefs on the external locus of control scores was statistically significant, $F(1,69) = 5.14, p = .027$. However, there was no significant interaction of the context and the levels of illusion of control beliefs, $F(1, 69) = .001, p = .98$. It can therefore be concluded that individuals with high illusion of control beliefs had significantly higher ratings for external attributions in both situations when compared to individuals with low illusion of control beliefs.

Discussion

Lefcourt, Von Baeyer, Ware and Cox (1979) developed the locus of control scales (MMCS) "to ascertain the utility of the locus of control (attribution) construct with regard to a large range of important human problems" (p. 302), and argued that this construct and scale would be useful in evaluating specific samples or problem areas. The current study utilised this measure to specifically evaluate gambling as a whole, establishing that attribution patterns vary significantly when examining gambling as opposed to another situation.

In the current study, it was hypothesised that attribution patterns of success/failure (internal external locus of control) with respect to gambling and non-gambling context would be different between (a) non-problem gamblers and possible problem gamblers and (b) individuals with high or low levels of illusion of control beliefs. With respect to internal locus of control, no evidence in support of the hypotheses was obtained. Both non-problem and possible problem gamblers reported low internal locus of control in gambling but high internal locus of control in work/study context. The same pattern emerged when participants with high and low illusion of control beliefs were compared. With respect to internal locus of control, both high and low illusion of control participants reported low internal locus of control in gambling but

higher internal locus of control in work/study. However, with respect to external locus of control, non-problem gamblers reported lower external locus of control in gambling whereas possible problem gambler higher external locus of control in gambling. Similarly, those with high illusion of control beliefs reported higher levels of external locus of control in gambling than those with low illusion of control beliefs.

Results indicated that attribution of success and failure in a work/study situation tended to be largely internal, with no differences found between participants with no gambling problem or a possible gambling problem. In gambling situations participants had higher scores for external attributions. However, participants with a possible gambling problem were more likely to make external attributions for success and failure in both situations than non-problem gamblers and thus had a higher external locus of control in general. These results are consistent with Rotter's (1966) view that attribution patterns, and thus locus of control can vary depending on the situation that the individual finds themselves in.

The findings of the current study suggest that external locus of control is used more by possible problem gamblers, and thus may also contribute to predicting higher gambling frequency and problem gambling. Participants with high illusion of control beliefs tended to make external attributions more than those with low illusion of control beliefs, with this effect being more pronounced in a work situation. Thus it would not be beyond reason to assume that possible problem gamblers had higher illusion of control beliefs than non-problem gamblers when gambling which is reflected by higher scores for external attributions. When looking at attributions in a work situation, both groups had a very high internal locus of control with no effect for illusion of control beliefs, which suggests that when it comes to a skill situation (work/study) possible problem gamblers 'drop' their illusion of control beliefs with respect to internal attributions and make similar attributions to non problem gamblers. This pattern only changed when looking at external attributions for possible problem gamblers in both situations, with illusion of control beliefs

A possible speculation regarding how situation-specific external locus of control may interact to form illusion of control is as follows. Gamblers may include those who have high external locus of control in a skill situation (work). For example, "I did well because the boss likes me" or "I cannot succeed because the boss doesn't like me." indicate higher external locus of control at work context. When these people gamble, they may possibly use illusion of control beliefs selectively to compensate for a perceived lack of control in skill situations.

Possible problem gamblers in gambling situations may use illusion of control beliefs by choice, thus they are strategically used (Langer, 1975; Nickerson, 2002; Thompson et. al., 1998). Illusions of control, acting as biased misperceptions would maintain feelings of self efficacy and consequently boost self esteem, as self efficacy is highly dependent on illusions of control (Rotter, 1966; Stajkovic & Luthans, 1988). Findings that when motive for control is strong, people look for ways in which their behavior is connected to outcomes (via internal attributions) support the notion that locus of control and illusion of control beliefs are closely connected (Thompson, 1998). It may be possible that illusions of control are not only utilised to identify ways in which ones behavior is connected to outcomes (internal attributions), but also to find ways that ones behavior is not connected to outcomes through the use of external attributions.

To reiterate this point, Langer (1975) demonstrated that people act as if they can control outcomes in situations that are purely chance. This induces an illusion of control with exaggerated probabilities of success based on over estimating personal control (internal

attributions). This was consistent with Tversky and Kahneman's (1972,1974) assertions that people tend to oversimplify complex events in an almost predictable way, due to misperceptions. To extend upon Langer's (1975) findings, the current study has attempted to investigate the relationship between illusion of control beliefs and more general external attributions about the event outcomes. While the external locus of control may protect possible problem gamblers from gambling failure (loss), illusion of control beliefs may compensate for lack of internal locus of control in gambling by encouraging them to keep on trying. Thus distancing oneself from failed outcomes may be integral part of possible problem gambling behaviour as well as high illusion of control in an attempt to preserve a feeling of self efficacy.

The current study does have some limitations and we regard this study as a pilot study suggesting a new direction of research. Whereas Langer's (1975) illusion of control beliefs, "an expectancy of a personal success probability inappropriately higher than the objective probability would warrant" (p. 316), which is primarily a psychological state which is more likely to change over time; Rotter (1966) defines locus of control as generalised expectancies that outcomes are internally or externally controlled through their experiences. Illusion of control as a predictor of gambling and problem gambling seem to be gaining currency in gambling research. However, the effectiveness of this construct is not entirely fully accepted without question. While some researchers suggest that illusion of control as a reliable predictor of gambling behaviour and problem gambling (Moore & Ohtsuka, 1999) and argue a cognitive bias such as attribution may play a key role in the maintenance of gambling (Delfabbro & Winefield, 2002), whilst some question the value of illusion of control for explaining acquisition and/or maintenance of gambling behaviour (Ladouceur, Mayrand, Dussault, Letarte & Tremplay, 1984). One of the theoretical conundrums may be whether the psychological construct representing a psychological state could be effectively used for predicting a long-term behavioural characteristic such as the future likelihood for gambling participation. A situation specific locus of control measure may be worth investigating the usefulness of this purpose.

Another minor limitation may be due to the way a gambling-specific locus of control scale was derived. We modified MMCS (Lefcourt et al., 1973) achievement scale to develop a gambling-specific MMCS. Since both skill and chance situation both focus on achievement, the instrument may inadvertently measure the same underlying construct assessed in different situations. Obviously, further research is required to validate the application of MMCS to a gambling context. Finally, our sample is drawn from a general adult population, which may not include the extreme end of possible problem gambling, and due to its small sample size, the power may not be sufficient. Nonetheless, the results of the current study are intriguing and may serve as a starting point of more systematic investigation.

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Author Notes

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APPENDIX

MMCS (gambling)

The following sentences are descriptions of how people feel and think about themselves when engaging in a gambling activity, such as the pokies, cards, lotto, scratchies, races etc irrespective of how often they engage in the activity. Please place a number next to each statement that best describes how much you agree or disagree with each statement.

- 1 = Disagree**
2 = Slightly Disagree
3 = Neither
4 = Slightly Agree
5 = Agree

ITEM	STATEMENT	RESPONSE
1	When I lose at gambling, I usually feel that the main reason is that I didn't persevere hard enough.	
2	If I were to lose, it would cause me to question my gambling skills.	
3	Some of the times that I have won at gambling, it was due to the right atmosphere.	
4	Sometimes my success at gambling depends on some luck.	
5	In my case, winning at gambling is always the direct result of my efforts.	
6	The most important ingredient in winning at gambling is my skill.	
7	Often my losses are due to the venue being too crowded and noisy.	
8	Some of my losses have seemed to be particularly due to bad luck.	
9	When I lose at gambling, it is often due to a lack of effort on my part.	
10	If I were to lose at gambling, it would probably be because I lacked the skills.	
11	Some of my wins are simply due to the venue being pleasant and comfortable.	
12	I feel that some of my wins depend on being at the right place at the right time.	
13	Whenever I win, it is always because I put in the effort to win.	
14	I feel that my wins reflect directly on my gambling skill.	
15	Often my losses are due to other people distracting and annoying me while I gamble.	
16	My gambling losses sometimes make me think I was just unlucky.	
17	Losing informs me that I haven't worked hard enough at winning.	
18	If I were to lose I would assume that I lacked the skills to win at gambling.	
19	Sometimes I win because I am with the right people.	
20	Sometimes I feel that I have to consider myself lucky for when I have a win.	
21	I can overcome all obstacles in the path of winning at gambling if I work hard enough.	
22	When I win, it is because of my gambling competence.	
23	Sometimes I have lost because I didn't like the venue.	
24	Some of my gambling losses may have been a function of bad luck, being at the wrong place at the wrong time.	

Illusion of Control Beliefs Scale – A section of Youth Gambling Survey (Moore & Ohtsuka, 1997)

STATEMENT	Strongly Agree	Agree	Neutral/ Not sure	Disagree	Strongly Disagree
78. The chances of winning substantial amount of money at the Casino are high.					
79. I think I'll win a jackpot (over \$10,000) in lottery some day.					
80. Sometimes I think I might have the power to "will" my numbers to come up in gambling games.					
81. To win at gambling you need to think positively.					
82. You can beat the Casino if you adopt the right system.					