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Motivations to Gamble in Younger and Older Adults

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MOTIVATIONS TO GAMBLE IN YOUNGER AND OLDER ADULTS

by

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Abstract

Gambling is a form of entertainment that is enjoyed by many adults, ranging from university students to older adults. A small subset of gambling research focuses on the motivations to pursue gambling, and very little research has investigated if age differences exist in motivation. Older adults typically experience decreased sense of control compared to university students (Mirowsky 1995, 2013), and it was hypothesized that this would be a key motivational difference. Through two experiments, this research aimed to investigate if different motivation models for gambling should be used for different age groups. Two competing models are tested: Loroz's (2004) model of gambling motivations for older adults compared to Binde's (2013) comprehensive model of gambling motivations. Experiment 1, which had 90 university students, had participants complete pre and post measures for perceived control and mood following a manipulation (gambling task or control task). Experiment 2, which had 68 older adult participants (above 50), replicated the methodology of experiment 1. There were no significant differences for perceived control or mood, across conditions and age groups. The use of different motivational models for different age groups was not supported, and as such there is support that Binde's (2013) model is better for understanding motivations to gamble. Older adult participants did not experience a change in perceived control as expected; it is proposed that older adults may not experience the decreased sense of control that is identified by Mirowsky (1995, 2013).

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Introduction

Gambling is a popular form of entertainment for many adults, which occasionally leads to negative consequences. Due to this, there is a large array of research focusing on various aspects of gambling. Much of the literature has focused on the negative aspects of gambling such as cognitive biases and problem gambling, with less research focusing on the possible motivations of gambling behaviours. While several motivation models exist, it is likely that, due to varying experiences, motivations may differ based on age. This research aims to explore motivational models of gambling for university aged students and older adults, with the intent of identifying any differences, or similarities, in gambling motivations. Research by Marmurek, Switzer, and D'Alvise (2014) compared a university sample with a community sample on motivations, impulsivity and gambling cognitions in relation to problem gambling. They found that money motivation and gambling related cognitions were the only significant independent predictors of gambling severity. Unfortunately, Marmurek and colleagues did not investigate motivations for non-problem gambling. They replicated the finding of Welte, Barnes, Tidwell and Hoffman (2011) that university students were indeed at higher risk of becoming problem gamblers than community members, and that more gambling research should be conducted including university aged participants. The current research is focused on the motivations to pursue gambling, as Norris and Tindale (2006) have found that a sample of Ontario older adults enjoyed the social and entertainment aspects of gambling. They also found those respondents were at lower risk of becoming problem gamblers than the general population.

Gambling Biases

Other avenues of gambling research have explored the cognitive biases associated with gambling. Starting in 1976, Ellen Langer found that the closer a chance situation is to a skill

situation, the more likely it is that individuals will approach the chance situation with a skill orientation. Given that gambling situations often involve some elements of both chance and skill, it is no surprise that Langer's research has been pivotal for research on cognitive biases that occur while gambling. Petrocelli and Sherman (2010) found that individuals with more detailed information about the outcome of a game of blackjack were more likely to create counterfactual thoughts. Counterfactual thinking is typified by alternative outcomes that differ from actual outcomes. In this case, the outcome is seen as undesirable. While counterfactual thoughts are a type of cognitive bias, they typically relate to a gambler's confidence in their betting and not necessarily the control they think they have over the outcome. Along with counterfactual thoughts, the gambler's fallacy, or the belief that after a certain number of losses a win is "due", is believed to be a primary motivator of gambling behavior. The gambler's fallacy is a cognitive bias that relates to incorrect expectations about the independence of events. Ladouceur, and Walker (1998) found that gamblers typically create illusory connections between independent events, believing that an expected outcome is bound to happen if it has not happened for an extended period of time. Given these biases, it is possible that the gambler's fallacy and the illusion of control may make individuals feel like they are in control while gambling, while that is not the case.

Gambling Motivations

Multiple models for gambling motivation have been suggested through various research styles. While there are several models for motivations to gamble, Per Binde's (2013) most recent model appears to be the best, as it accounts for the most common motivations in other models. His research, which summarizes over 10 years of his and others' work in the field, suggests a motivational model comprised of five different dimensions: life transformation, social rewards,

intellectual challenge, mood change and the chance of winning (arguably the most important aspect). Of the motivational models that Binde reviews, the majority of them are overarching and universal, but what if different models, or different aspects of models, are more relevant to certain groups?

Terraciano, McCrae, and Costa (2010) tested personality stability across the lifespan using the Guilford-Zimmerman Temperament Survey, which breaks personality into 10 factors (general activity, restraint, ascendance, sociability, emotional stability, objectivity, friendliness, thoughtfulness, personal relations, masculinity). Over 540 individuals participated across a 20-year span, and stability scores (individual stability coefficients) were calculated for several age cohorts. While no significant differences were found for particular subscales, they did find that individual stability coefficients varied less for participants above the age of 30. McAdams (1994) posits that there are several levels that personality can be broken down into; dispositional traits, which are consistent across groups, personal concerns which are goals and things of importance, and life narrative, which is an individual's concept of self. From McAdams' categorization, emotional stability would be a dispositional trait, which is also found to vary the least. Steinberg, Albert, Cauffman, Banich, Graham, and Woolard found that sensation seeking also declines with age (2008). Given that older adults experience more stable emotional stability (Terracciano, McCrae, & Costa, 2010) and are typically lower on sensation seeking (Steinberg, et al., 2008), mood change may not be as likely to occur for older adults compared to university students.

Another model of gambling motivation that is often cited is that of Lee, Chae, Lee, and Kim (2007). The model proposed by Lee and others also has five factors, although they differ from the factors cited by Binde. These five factors are: socialization, amusement, avoidance, excitement, and monetary motives. Socialization, mood change and monetary incentives seem to

be important factors in both models. While Lee and colleagues' model and Binde's model are very similar, Binde's model captures the commonalities in motivational models to a greater degree than do those of Lee. One model of gambling motivation that pertains specifically to older adults is the model proposed by Loroz (2004). Loroz argues that there are three primary motivations for older adults to gamble in casinos: escape, lift, and control. Escape relates most closely to dreaming of hitting the jackpot, social rewards and chance of winning in Binde's model (2013). Lift is arguably related to mood change, and intellectual challenge, whereas control is an aspect of gambling motivation that is not typically included in other models. This research aims to identify whether Loroz's model or Binde's model has the best explanatory power for older adults.

Mood and Gambling

Most researchers who have investigated mood and gambling have looked at the relationship between mood disorders and gambling (Abdollahnejad, Delfabbro, & Denson, 2014; Quilty, Mackew, & Bagby, 2014; Parhami, et al., 2014). However, some researchers have also considered how mood influences behaviour while gambling (de Vries, Holland, & Witteman, 2008; Goldstein, Stewart, Hoaken, & Flett, 2014; Stanton, Reeck, Huettel, & LaBar, 2014). Demaree, Burns, DeDonno, Agarwala and Everheart (2012) investigated risk dishabituation with the framework of the mood maintenance model. The mood maintenance model posits that increased positive affect decreases risk taking behaviour and increased negative affect increases risk taking behaviour. While investigating how mood influences risk-taking behaviour in a gambling context, they found that mood did predict risk-taking behaviour. Interestingly, they also found that surprise (winning when the expectation was to lose and vice versa) also reduced risk-taking behaviour. Little or no research has investigated how gambling influences mood, and

given the evidence of mood affecting gambling behaviour, understanding that relationship would further our understanding of the processes underlying gambling behaviour.

Control and Older Adults

As individuals age, there can be hardships along with triumphs. Pastalan (1982) identified the loss continuum concept, which identifies that older adults exhibit reduced social participation due to various losses. These losses vary widely both between and within individuals; some may experience the loss of loved ones and family, whereas others may experience loss of their own mental and physical abilities. From these losses, older adults become more attentive to small environmental changes, and some changes can have large positive impacts (1982). Due to this, it is also thought that older adults experience a lower sense of control in their lives, as most of these changes are caused by external factors that cannot be controlled. Mirowsky (1995) has found that sense of control decreases with age, whereas physical difficulties typically increase; unsurprisingly, these two factors are negatively correlated. Mirowsky and Ross (1992) also found that lower sense of control along with multiple losses contributed to higher rates of depression in old age. While sense of control is typically lower in old age, and there are occasionally more negative consequences, most adults age well.

A classic field experiment by Langer and Rodin (1976) manipulated enhanced personal responsibility for individuals in a nursing home residence. Half of the participants were given a communication that emphasized their own responsibility; versus the other half of the group who were told that the staff were responsible for them. From this intervention, it was found that those individuals who experienced responsibility themselves, or more control, experienced much more positive health outcomes than those who did not. Successful aging, as proposed by Rowe and Khan (1998), maintains that it is possible to age and have an enjoyable experience while doing

so. The primary goal of successful aging is the development and maintenance of competence (through engagement with life, avoiding disease and disability, and high cognitive and physical functioning), and this competence can extend beyond the three aspects mentioned previously. Rowe and Kahn (1998), further break down cognitive and physical functioning to include: education, self-efficacy and control, and response to stress.

If some older adults experience a lower sense of control, and a higher sense of control is associated with positive well being, how can they experience control when the cards are not in their favour? It could be possible the control that older adults experience while gambling may alleviate their lower sense of control, possibly leading to more positive outcomes. As Loroz's model (2004) identifies control as a primary motivator for gambling behaviour, it is predicted that older adults will experience more perceived control following a gambling task. The primary prediction and research purpose is to investigate the relationship between perceived control and the illusion of control experienced while gambling.

Gambling Motivations in Older Adults

Aligning with gambling motivation models, Norris and Tindale (2006) found that older adults listed entertainment value, winning and socializing with friends and family as some of the most important motivators for gambling. Just like young adults, older adults may also be affected by cognitive biases; Southwell, Boreham and Laffan (2008) found that 16% of older adults thought that implementing a certain strategy would lead to them winning more (illusion of control), which is very similar to that of young adults (Moore & Ohtsuka, 1999). While the negative aspects of cognitive biases, such as falsely believing that they will win big on the next bet, could motivate gambling behaviours, a more positive reason may exist. It is hypothesized

that the illusion of control experienced while gambling will act as a motivator for gambling as it may increase the sense of control that older adults experience.

Gambling Motivation in University Students

Would control be a motivator for gambling in university students? According to Jeffrey Arnett (2007), during the life-course, university students' experience is characterized by emerging adulthood. Emerging adulthood is typified by five distinct experiences: identity explorations, instability, self-focus, feeling in-between and possibilities. Emerging adults think of adulthood as containing three cornerstones: responsibility for yourself, making independent decisions and becoming financially independent (Arnett, 2004). With emerging adulthood typifying this transition from adolescent to adult, there is an increased sense of autonomy. With this increased autonomy, there is presumably an increase in perceived control. Mirowsky (2013) found that the trajectory of sense of control differs across ages. Young adults typically experience a high sense of control, with an upward trajectory, whereas older adults typically experience a lower sense of control, with the trajectory changing from an upward slope to a downward slope around the age of 55. Given these findings it is expected that university students' perceived control should be higher than older adults. Since mood changes are typically cited in motivational models for gambling, it is expected that mood change should occur in both older adults and university students. However, given that as individuals age, their personality stabilizes (Terracciano, et al., 2010), it is predicted that university students will experience more mood change than older adults following gambling.

Other Considerations

Other personality variables may shed light on the processes that occur regarding changes in perceived control. Berkowitz, Waxman and Yaffe (1988) found that higher self-esteem

correlates positively with higher perceived control. It has also been found that regulatory focus can predict sense of control. Regulatory focus is divided into two types, promotion-focus and prevention-focus. Individuals who are promotion focused typically face challenges head on, whereas those who are prevention focused take steps to prevent challenges from arising. Specifically promotion focus predicts a high sense of control and prevention focus predicts a low sense of control (Guo & Spina, 2015). The predictive nature of both self-esteem and regulatory focus will be explored through regression. Along with these relationships, it is well established that gender plays a role in gambling behaviour, specifically relating to type of games. Males typically prefer games of strategy (sports betting, card games, etc.), whereas females often enjoy games with more chance (slots, etc.) (Holtgraves, 2009; Ladd, Molina, Kerins, & Petry, 2003; Svensson & Romild, 2014). The impact of gender on mood and perceived control will also be explored.

Theoretical Framework

Binde (2013) identifies five motivations to gamble: the chance of winning, dreaming of hitting the jackpot (which is conceptually different from alleviating financial strain), social rewards, intellectual challenge, and mood change. Of importance to this research is mood change (as mentioned previously). Mood change, as Binde describes, relates to the elicitation of specific favourable moods: rising excitement, or increased relaxation. Binde posits that this change leads to repeated behaviour in leisure gamblers. It is because of this that I decided to test mood change itself, instead of intentions to pursue gambling in the future. If there are no changes in mood, mood change may not be a motivator for gambling. Loroz (2004) on the other hand, identifies three motivations to gamble in older adults: control, lift, and escape. Of particular importance is the connection Loroz makes between control and the self. Loroz argues that since older adults

experience a loss of control in their lives, having an avenue where they can exert control may reinforce the self-concept, and eventually drive gambling behaviour. Once again, if there is no change in control, control may not be a motivator for gambling. Due to the distinctiveness of control in Loroz's model, it was hypothesized that this may be a larger driver for motivation to gamble for older adults.

To test these differences, university students and older adults were brought into the lab where they completed either a control task (reading a newspaper article) or one of two gambling tasks: the Iowa Gambling Task (Bechara, Damasio, Damasio, & Anderson, 1994), or the Cambridge Gambling Task (Rogers et al., 1999). Pre and post measures were used to establish if there were any changes in perceived control and affect. Both students and older adults were exposed to almost identical research designs. Hypotheses were developed for these individual differences (perceived control, affect, and age), and research questions were developed to explore the other considerations (self-esteem, regulatory focus, and gender).

Hypotheses & Exploratory Research Questions

This research aims to investigate the relationship between perceived control, affect, and gambling behaviour with the intent of establishing evidence that changes in state perceived control will be a primary driver for older adults, and that changes in state mood will be a primary driver for university students. The conceptual objective of this set of experiments is to identify which model is best, of either the Loroz and Binde models, as well as whether different models have more explanatory power for different age groups.

1) Older adults will see an increase in perceived control following a gambling task, supporting Loroz's (2004) model.

2) University students will experience an increase in positive affect along with a decrease in negative affect following a gambling task, supporting Binde's (2013) model.
3) Older adults in gambling conditions will experience a significantly larger increase in perceived control than university students, supporting Loroz's model applying to older adults and Binde's model applying to university students.
4) University students in gambling conditions will experience a significantly larger increase in positive affect and a larger decrease in negative affect than older adults in gambling conditions, supporting Loroz's model applying to older adults and Binde's model applying to university students.

Along with these hypotheses, there are several exploratory research questions that were also investigated. Since previous research has indicated that self-esteem, promotion focus and prevention focus predict different levels of perceived control; these effects will be tested in multiple linear regressions. Whereas gender differences exist at the group level, gender effects will be tested through group comparisons.

a) Does self-esteem predict perceived control?
b) Do promotion focus or prevention focus predict perceived control?
c) Are there any gender effects?

Ultimately, this research will inform the use of one or multiple gambling motivation frameworks.

General Method

Procedure

Given the nature of the following studies, all methods and materials have been subject to ethical review and have been approved by the WLU REB (approval #4080). All participants completed questionnaires, one of three randomized manipulation tasks, and post-manipulation

questionnaires (to obtain difference scores). Participants entered the lab and were told about the questionnaires they would be completing. The purpose of the experiment was restated and participants were assigned to computer terminals. Participants completed questionnaires regarding regulatory focus (RFQ, Appendix A, Higgins et al., 2001), state self-esteem (RSES, Appendix B, Rosenberg, 1962), and state mood (PANAS, Appendix C, Watson, Clark, & Tellegen, 1988). Regulatory focus and self-esteem were included as they reflect individual differences that may moderate perceived control. Participants then completed the general domains of control sub-scale of the Shapiro Control Inventory (GDCSCI, Appendix D, Shapiro, Potkin, Jin, et al., 1993), which measures overall (trait) sense of control. Following these questionnaires, participants completed the main manipulation, which is one of three tasks: a neutral control task (reading a newspaper article, Appendix E, Pincus-Roth, 2014), the Iowa Gambling Task (IGT, Appendix F, Bechara, Damasio, Damasio, & Anderson, 1994), or the Cambridge Gambling task (CGT, Appendix G, Rogers et al., 1999).

The neutral control task consisted of reading a newspaper article (see Appendix E, Pincus-Roth, 2014) about making puns for 15 minutes. Participants were asked to sit quietly and read the article until they finished it, or until the researcher alerted them that they had spent enough time. The article selected was based on length, so that the experiment would take the same amount of time to complete, regardless of condition. Along with length, content was also considered as the control condition had to be entertaining.

The Iowa Gambling Task is a computer-based gambling task where participants select a deck of cards and win or lose a randomly assigned value of money; two of the four decks have a positive value on average, whereas the other two decks have a negative value on average. Decks C and D have a positive value of $50, but some of the time there will be a cost associated with

each win. For the punishments of Deck C, which occur 50% of the selections, 25% will be -$25, 50% will be -$50, and 25% will be -$75. For the punishments of Deck D, which occur 20% of the selections, the punishment will be -$250. On average, participants will have a net gain of $500 on either Deck C or Deck D. Decks A and B have a positive value of $100, but some of the time there will be a cost associated with each win. For the punishments of Deck A, which occur 50% of the selections, 20% will be -$150, 20% will be -$200, 20% will be -$250, 20% will be -$300, 20% will be -$350. For the punishments of Deck B, which occur 20% of the selections, the punishment will be -$1250. On average, participants will have a net loss of $250 on either Deck A or Deck B. Participants start with $2000 (although this is not real money), and they can have negative values. The task continues until 200 trials have been completed (the amount of trials was increased to match the time length of the Cambridge Gambling Task). The winnings that they earn persist through trials, and at the end of the trials they end the task with whichever value they had last.

The Cambridge Gambling Task is another computer-based gambling task. In the Cambridge Gambling Task, participants are presented with ten cards, with blue or red backs, and they are required to bet on which colour a token will be found under (of the ten cards, the amount of red and blue card backs vary on each trial). Participants start with 100 points, and if their total points drop below two, the next block in the set begins. Points are reset at the beginning of each block. Each participant completes one practice block (which has 0 points), one ascending set of four blocks, and one descending set of four blocks. The practice block is composed of 5 trials, with pre-set ratios. The ascending and descending blocks each have 36 trials, with four ratios used nine times each. The four ratios that are used for card backs are as follows (presented blue/red, totalling 10): 1/9, 2/8, 3/7, 4/6. The task is designed to inhibit impulsive betting, this is

done by having bet values appear in ascending order, or in descending order. Betting values increase or decrease in a fixed order of proportions of the total available points (5% increments with a 5 second delay). When the bet value has increased or decreased to 95% of the total points available, the bet is placed. Participants are able to set their own bet value by clicking on the bet box when the value has reached a level they are comfortable with (they can click the bet box immediately before any increase or decrease has occurred). In 17% of the trials, the better choice is incorrect.

Following the manipulation, participants completed post-measures of state self-esteem and state mood. Participants also completed the Perceived Control Inventory (PCI, Appendix H, Eizenman, Nesselroade, Featherman, & Rowe, 1997), a measure of state perceived control. At this point, participants completed gambling specific questionnaires; the Problem Gambling Severity Index (PGSI, Appendix I, Ferris & Wynne, 2001), Family Gambling Inventory (FGI-B,D,F,E,G, Appendix J, Norris & Tindale 2006), and open-ended questions regarding their thoughts during the manipulation task and motivations to pursue gambling in the future. Participants finished the experiment by completing a demographics questionnaire, which included questions regarding gender, age, and heritage. Participants were then thanked, probed for suspicion and debriefed about the experiment.

Data Analysis

To test the four hypotheses laid out in the introduction, several Analysis of Variance tests were used. The first hypothesis was tested using a one-way ANCOVA (condition), as pre-post measures for perceived control were not available, Shapiro Control Inventory scores were used as a covariate for Perceived Control Inventory. Since the first hypothesis relates to older adults, this analysis only pertains to experiment 2. The second hypothesis was tested using a one-way

ANOVA (condition), with difference scores for both positive and negative affect. Since the second hypothesis relates to university students, this analysis only pertains to experiment 1. The third hypothesis was tested using a two-way ANCOVA (condition by age), with SCI as a covariate for PCI. A third data set was created combining the data from experiment 1 and experiment 2 for this analysis. The fourth hypothesis was tested using a two-way ANOVA (condition by age), with difference scores for both positive and negative affect. Similar to the analysis for the third hypothesis, the combined data of experiment 1 and experiment 2 was used for this analysis. Due to the nature of these analyses, a Bonferroni correction was used to adjust the critical alpha for each comparison to attend to the multiple comparison problem. For experiment 1 and experiment 2, the correction was applied to all six comparisons that were used (six comparisons in experiment 1 and 6 comparisons in experiment 2), making the critical alpha for each comparison .008. For experiment 1 and 2 (the combined data set), the correction was applied to all twelve comparisons that were used, making the critical alpha for each comparison .004.

To test the three exploratory research questions laid out in the introduction, a multiple linear regression was used for research questions 1 and 2, and several two-way ANOVAs (condition by gender) were used for research question 3. To test research questions 1 and 2, a multiple linear regression with two models was used. The following predictors were entered in step 1, promotion focus, prevention focus, trait self-esteem, age, and trait perceived control (covariate). Then in step 2, control condition (control = 1, other = 0), IGT condition (IGT = 1, other = 0), the trait self-esteem by control condition interaction, the trait self-esteem by IGT condition interaction, the promotion focus by control condition interaction, the promotion focus by IGT condition interaction, the prevention focus by control condition interaction, the

prevention focus by IGT condition interaction, the trait perceived control by control condition interaction, the trait perceived control by IGT condition interaction, the age by control condition interaction, and the age by IGT condition interaction. To test research question 3, several two-way ANOVAs (condition by gender), were used for both perceived control (PCI, SCI covariate) and affect (positive and negative affect difference scores) for each data set (experiment 1, experiment 2, and experiment 1 & 2).

Experiment 1

Method

This experiment consisted of 90 undergraduate students (M_{age} = 19.12, *SD* = 1.80; 77% female) from Wilfrid Laurier University. Participants were recruited through the Psychology Research Experience Program (PREP), where psychology students are compensated course credit for participating in research. All participants worked independently at computer terminals in lab and were compensated 1.0 PREP credit for participating (1 hour in lab). The full procedure outlined in the general method section was implemented.

Results

As the goal of this experiment was to investigate the effects of gambling on perceived control, Perceived Control Inventory scores became the dependent variable using Shapiro Control Inventory scores as a covariate, in place of a difference score. This approach was used, as the Perceived Control Inventory is a state measure, whereas the Shapiro Control Inventory is a trait measure. A one-way ANCOVA revealed that there were no significant differences in perceived control across conditions ($F_{(2, 86)}$ = .55, *ns*). I also wanted to investigate how gambling effects emotions. To do so, a difference score was created by subtracting pre-manipulation state positive affect from post-manipulation state positive affect. A one-way ANOVA revealed that

there were no significant differences in changes in positive affect across conditions ($F_{(2, 87)}$ = 4.82, *ns).* Along with positive affect, I also wanted to investigate negative affect. To do so, a difference score was created by subtracting pre-manipulation state negative affect from post-manipulation state negative affect. A one-way ANOVA revealed that there were no significant differences in changes in negative affect across conditions ($F_{(2, 87)}$ = 3.63, *ns*).

Table 1

Pre and post measures for dependent variables for university student participants

Note. Standard errors are in parentheses.

	Control (n = 30)		IGT (n = 30)		CGT (n = 30)	
Variable	Pre	Post	Pre	Post	Pre	Post
Perceived Control[a]		25.70		24.97		24.97
		(.57)		(.57)		(.57)
Positive Affect	33.70	31.37	32.00	33.20	32.67	33.70
	(1.42)	(1.72)	(1.27)	(1.39)	(1.20)	(1.32)
Negative Affect	18.10	15.23	17.07	14.57	16.53	15.87
	(1.35)	(1.08)	(1.18)	(1.05)	(1.10)	(1.15)

[a]Means are adjusted for the covariate, Shapiro Control Inventory = 151.06.

Gender

As there is substantial evidence that exists regarding gender and gambling preference, I also investigated gender, to see if there were any gender related effects for perceived control, positive affect and negative affect. For perceived control, a 2 (gender) by 3 (condition) ANCOVA revealed that there were no significant differences in perceived control change across gender and conditions ($F_{(2, 83)}$ = 1.43, *ns*). For positive affect, a 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in positive affect change across gender and conditions ($F_{(2, 84)}$ = .07, *ns*). For negative affect, a 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in negative affect change across gender and conditions ($F_{(2, 84)}$ = .59, *ns*).

Discussion

To understand how gambling may affect perceived control in university students, a one-way ANCOVA was used to assess changes in perceived control. There were no significant differences between conditions, and as this finding relates to hypothesis 3 (older adults in gambling conditions will experience a significantly larger increase in perceived control than university students, supporting Loroz's model applying to older adults and Binde's model applying to university students), it will be discussed further in the combined data set discussion. As indicated earlier hypothesis 2 is: University students will experience an increase in positive affect along with a decrease in negative affect following a gambling task, supporting Binde's (2013) model. As changes in affect were of interest for hypothesis 2, two one-way ANOVAs were used to assess changes in positive and negative affect. There were no significant differences between groups for positive affect. There were no significant differences between groups for negative affect. Due to the conservative alpha of .008, there were no significant results for the comparisons made in experiment 1. The low number of participants could be problematic, along with the amount of comparisons. Reducing the amount of comparisons made would increase the alpha, or increasing the power may help. It could also be possible that the university students were not engaged with the task. The nature of the manipulation tasks could also be problematic. Both gambling conditions are very active; however, the control condition was very passive. Furthermore, participants may not have found any of the tasks entertaining, which would explain why there were no differences in emotion across conditions.

Regarding gender, there were no interaction effects or main effects of gender on any of the dependent variables. Given that males and females typically enjoy different types of games, it is very surprising that there were no differences in affect. Although it could be that there were no

gender effects found due to the participant pool composition. The majority (77%) of participants for this experiment were female, so the low number of males could be the reason that no gender effects were found as expected. Overall, this experiment provides no support for hypothesis 2, although this could be due to a power problem. Contrary to previous research, there were not any gender effects.

Experiment 2

Method

The second experiment (Experiment 2), which is comprised of 68 community members (M_{age} = 66.66, SD = 19.94; 75% female) from around the Kitchener-Waterloo and Orangeville regions was designed to investigate changes in mood and perceived control after gambling. Research by Mirowsky (1995) found that sense of control in older adults typically starts to decrease after the age of 50, because of this, I set the age threshold for older adults at 50. A snowball/word of mouth recruitment method was used. Participants were recruited from Third Age Learning Kitchener Waterloo (a community group that hosts university lectures for older adults in the community), along with the Laurier Association of Life Long Learning (LALL is an organization that is housed in the Continuing and Part Time Studies sub department of the Centre for Teaching Innovation and Excellence at WLU, that hosts university level lectures that re open to the public, the majority of LALL members are above 50 years old), through referrals from participants (each participant that completed the experiment was asked if they knew anyone else who may be interested in participating), with help from the Faculty of Graduate and Postdoctoral Studies (Graduate Program Administrators) and with help from family members. Each participant was compensated with a $5 gift card for Tim Horton's for 30 minutes of their time. Unlike the first experiment, some participants completed the experiment in the comfort of their

own home, or in lab. This strategy was used to increase the accessibility of participation to older adults who would not be able to make it to the lab. The procedure outlined in the general method section was implemented, with the FGI removed for time.

Results

For experiment 2, I wanted to conduct the same analyses as experiment 1, so I used the same methodologies for perceived control change, positive affect change and negative affect change. For perceived control change, I used the same methodology as experiment 1. A one-way ANCOVA revealed that there were no significant differences in perceived control across conditions ($F_{(2, 64)} = 2.13$, *ns*). For positive affect change, I used the same methodology as experiment 1. A one-way ANOVA revealed that there were significant differences in changes in positive affect across conditions ($F_{(2, 65)} = 4.07$, *ns*). For negative affect change, I used the same methodology as experiment 1. A one-way ANOVA revealed that there were no significant differences in changes in negative affect across conditions ($F_{(2, 65)} = .73$, *ns*).

Table 2

Pre and post measures for dependent variables for older adult participants

	Control ($n = 22$)		IGT ($n = 24$)		CGT ($n = 22$)	
Variable	Pre	Post	Pre	Post	Pre	Post
Perceived Control[a]		27.12		26.09		25.33
		(.62)		(.59)		(.61)
Positive Affect	32.73	29.77	32.42	29.21	35.73	35.82
	(1.68)	(1.87)	(1.35)	(1.58)	(1.25)	(1.29)
Negative Affect	13.55	11.32	13.17	12.08	14.09	12.00
	(.81)	(.30)	(.68)	(.70)	(1.04)	(.67)

Note. Standard errors are in parentheses.

[a]Means are adjusted for the covariate, Shapiro Control Inventory = 151.13.

Gender

Similar to experiment 1, I also investigated gender, to see if there were any gender related effects for perceived control, positive affect and negative affect. For perceived control, a 2 (gender) by 3 (condition) ANCOVA revealed that there were no significant differences in perceived control change across gender and conditions ($F_{(2, 61)} = .82$, *ns*). For positive affect, a 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in positive affect change across gender and conditions ($F_{(2, 62)} = 2.44$, *ns*). For negative affect, a 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in negative affect change across gender and conditions ($F_{(2, 62)} = .04$, *ns*).

Discussion

As changes in perceived control were of interest for hypothesis 1, changes in perceived control were tested for experiment 2. As indicated earlier hypothesis 1 is: Older adults will see an increase in perceived control following a gambling task, supporting Loroz's (2004) model. This was tested with a one-way ANCOVA where SCI was used as a covariate for PCI, in lieu of a difference score. Given that there were no significant differences in perceived control across conditions, there is not significant evidence to support the hypothesis. Mirowsky (1995) found that there were slight differences in sense of control based on education. Specifically, that individuals with higher levels of education typically experienced higher sense of control. It could be possible that there were no differences in perceived control as all participants had high sense of control. Looking at averages for our covariate (SCI), the older adults' (M = 151.1, SD = 13.78) and university students' (M = 151.1, SD = 13.16) averages were identical, with very similar spread. It could be that since a large part of the sample was comprised of Third Age

Learning members and university graduate program administrators, their education level could be higher. Unfortunately, there were no questions regarding education level.

Since changes in affect across age groups are of interest for hypothesis 4 (university students in gambling conditions will experience a significantly larger increase in positive affect and a larger decrease in negative affect than older adults in gambling conditions, supporting Loroz's model applying to older adults and Binde's model applying to university students), two one-way ANOVAs for affect change were run. Interestingly, there was no significant evidence indicating that positive affect change varied across conditions. It was also surprising to see that there were no significant differences across groups for negative affect. Given that gambling is an entertainment activity, it is questionable that there was no enjoyment involved. As mentioned previously, it could be that all manipulation tasks were boring. There was also no significant gender by condition interaction, as expected since males and females typically prefer different types of games. Overall, there was no support for hypothesis 1 and there were no gender differences in change in positive and negative affect.

Experiment 1 & 2

Results

To further understand the effects of gambling on perceived control change, positive affect change and negative affect change; I collapsed the data for experiment 1 and experiment 2. For this combined data, I wanted to conduct the same analyses as experiment 1 and experiment 2, so I used the same methodologies for perceived control change, positive affect change and negative affect change. For perceived control change, I used the same methodology as experiment 1. A one-way ANCOVA revealed that there were no significant differences in perceived control across conditions ($F_{(2, 154)} = 2.3$, *ns*). For positive affect change, I used the same methodology as

experiment 1. A one-way ANOVA revealed that there were significant differences in changes in positive affect across conditions ($F_{(2, 155)} = 5.83$, $p < .004$). When looking at mean level differences, participants in the CGT condition experienced less change in positive affect (M = .06, SD = .67), compared to those participants in the control condition (M = -2.60, SD = .67) and the IGT condition (M = -.76, SD = .66). For negative affect change, I used the same methodology as experiment 1. A one-way ANOVA revealed that there were no significant differences in changes in negative affect across conditions ($F_{(2, 155)} = 1.91$, *ns*).

Table 3

Pre and post measures for dependent variables for all participants

	Control (n = 52)		IGT (n = 54)		CGT (n = 52)	
Variable	Pre	Post	Pre	Post	Pre	Post
Perceived Control[a]		26.35		25.11		25.43
		(.42)		(.42)		(.42)
Positive Affect	33.29	30.69	32.19	31.43	33.29	34.60
	(1.08)	(1.26)	(.92)	(1.07)	(1.08)	(.94)
Negative Affect	16.17	13.58	15.33	13.46	15.50	14.23
	(.90)	(.69)	(.76)	(.68)	(.78)	(.76)

Note. Standard errors are in parentheses.
[a]Means are adjusted for Shapiro Control Inventory = 151.09.

Gender

Similar to experiment 1 and experiment 2, I also investigated gender, to see if there were any gender related effects for perceived control, positive affect and negative affect. For perceived control, a 2 (gender) by 3 (condition) ANCOVA revealed that there were no significant differences in perceived control change across gender and conditions ($F_{(2, 151)} = 1.15$, *ns*). For positive affect, a 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in positive affect change across gender and conditions ($F_{(2, 152)} = 1.86$, *ns*).

For negative affect, a 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in negative affect change across gender and conditions ($F_{(2, 152)} = .69$, *ns*).

Age

Unlike experiment 1 and experiment 2, I wanted to investigate age, to see if there were any age related effects for perceived control, positive affect and negative affect. For perceived control, a 2 (age group) by 3 (condition) ANCOVA revealed that there were no significant differences in perceived control change across age group and conditions ($F_{(2, 151)} = .43$, *ns*). For positive affect, a 2 (age group) by 3 (condition) ANOVA revealed that there were no significant differences in positive affect change across age group and conditions ($F_{(2, 152)} = 2.62$, *ns*). There was a significant main effect for condition ($F_{(2, 152)} = 5.91$, $p < .004$). When looking at mean level differences for condition, participants in the control condition experienced a decrease in positive affect ($M = -2.64$, $SD = .66$), compared to those participants in the CGT condition ($M = .56$, $SD = .66$) and the IGT condition ($M = -1.0$, $SD = .64$). For negative affect, a 2 (age group) by 3 (condition) ANOVA revealed that there were no significant differences in negative affect change across age group and conditions ($F_{(2, 152)} = 2.34$, *ns*).

Gender and Age

Since some gender effects approached significance, and the sample size was larger for the combined data; I wanted to investigate age and gender, to see if there were any age by gender by condition interaction effects for perceived control, positive affect and negative affect. For perceived control, a 2 (age group) by 2 (gender) by 3 (condition) ANCOVA revealed that there were no significant differences in perceived control change across age group, gender, and conditions ($F_{(2, 145)} = 1.24$, *ns*). For positive affect, a 2 (age group) by 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in positive affect change across age

group, gender, and conditions ($F_{(2, 146)} = 1.19$, *ns*). For negative affect, a 2 (age group) by 2 (gender) by 3 (condition) ANOVA revealed that there were no significant differences in negative affect change across age group, gender, and conditions ($F_{(2, 146)} = .14$, *ns*).

Exploratory Analyses

Correlations

I also investigated some personality traits that are known to predict perceived control. Following from previous research, I found moderate correlations between promotion focus, self-esteem and perceived control as seen in Tables 4 - 6. Promotion focus, which is typically correlated with high perceived control, was moderately correlated with perceived control (PCI) in both studies 1 (*rs* = .46 - .59, *ps* < .05) and 2 (*rs* = .43 - .63, *ps* < .05), and in the combined data (*rs* = .45 - .55, *ps* < .01). Promotion focus, which is typically correlated with high perceived control, was also moderately correlated with trait perceived control (SCI), in both studies 1 (*rs* = .44 - .58, *ps* < .05) and 2 (*rs* = .38 - .65, *ps* < .10), and in the combined data (*rs* = .42 - .60, *ps* < .01).

Table 4

Correlations among variables in all conditions for university student participants

	IGT					CGT					Control				
	2.	3.	4.	5.	6.	2.	3.	4.	5.	6.	2.	3.	4.	5.	6.
1. Age	-.01	.05	-.20	-.17	-.05	-.08	-.17	.02	.15	-.25	-.03	-.22	.28	.26	.15
2. Promote	-	.12	.58**	.59**	.49**	-	.16	.62**	.46*	.44*	-	.21	.51**	.48**	.58**
3. Prevent		-	.01	-.08	.11		-	.19	.46*	.48**		-	.12	-.20	-.15
4. RSES			-	.81***	.62***			-	.59**	.55**			-	.65***	.61***
5. PCI				-	.50**				-	.48**				-	.58**
6. SCI					-					-					-

^{o} *p* < .10. * *p* < .05. ** *p* < .01. *** p < .001.

Table 5

Correlations among variables in all conditions for older adult participants

	IGT					CGT					Control				
	2.	3.	4.	5.	6.	2.	3.	4.	5.	6.	2.	3.	4.	5.	6.
1. Age	-.01	-.18	.14	-.03	-.18	-.06	.39	.07	-.02	.02	.13	.23	.18	.31	-.07
2. Promote	-	.02	.32	.44*	.50*	-	.17	.53*	.43*	.38^{o}	-	.15	.58**	.63**	.65**
3. Prevent		-	-.02	.34	.43*		-	.35	.21	.53*		-	.49*	.18	.20
4. RSES			-	.22	.35^{o}			-	.47*	.33			-	.53*	.68**
5. PCI				-	.56**				-	.23				-	.46*
6. SCI					-					-					-

^{o} $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Prevention focus, which is typically correlated with low perceived control, was moderately correlated with perceived control (PCI) and trait perceived control (SCI) in some cases. In experiment 1, prevention focus was only moderately correlated with perceived control in the CGT condition ($r = .46$, $p < .05$) and only moderately correlated with trait perceived control ($r = .48$, $p < .01$). In experiment 2, prevention focus was only moderately correlated with trait perceived control in the IGT condition ($r = .43$, $p < .05$) and in the CGT condition ($r = .53$, $p < .05$). In the combined data, prevention focus was moderately correlated with perceived control in the CGT condition ($r = .37$, $p < .01$), and only moderately correlated with trait perceived control in the IGT condition ($r = .25$, $p < .10$) and the CGT condition ($r = .49$, $p < .001$).Trait self-esteem, which is typically correlated with high perceived control, was moderately correlated with perceived control (PCI) in both studies 1 ($rs = .59$ - $.85$, $ps < .01$) and 2 ($rs = .47$ - $.53$, $ps < .05$; IGT $r = .22$, *ns*), and in the combined data ($rs = .54$ - $.67$, $ps < .01$). Trait self-esteem, which is typically correlated with high perceived control, was also moderately correlated with trait

perceived control (SCI), in both studies 1 (*rs* = .55 - .62, *ps* < .01) and 2 (IGT *r* = .35, *p* < .10; CGT *r* = .33, *ns*; *r* = .68, *p* < .01), and in the combined data (*rs* = .46 - .58, *ps* < .01).

Table 6

Correlations among variables in all conditions for all participants

	IGT					CGT					Control				
	2.	3.	4.	5.	6.	2.	3.	4.	5.	6.	2.	3.	4.	5.	6.
1. Age	.16	.09	.28*	.19	.09	.15	.33*	.19	.06	.02	.04	.30*	.28*	.21	-.11
2. Promote	-	.10	.51**	.55**	.50**	-	.20	.59**	.45**	.42**	-	.18	.52**	.52**	.60**
3. Prevent		-	.04	.08	.25 ^{o}		-	.29*	.37**	.49**		-	.31*	-.02	-.03
4. RSES			-	.67**	.51**			-	.54**	.46**			-	.62**	.58**
5. PCI				-	.53**				-	.39**				-	.50**
6. SCI					-					-					-

^{o} *p* < .10. * *p* < .05. ** *p* < .01. *** p < .001.

I conducted a multiple linear regression analysis using perceived control as the dependent variable. As shown in the second model of Table 7, the results showed that the interactions with condition were nonsignificant *ts* < 1, *ps* > .05. The best predictors for perceived control across conditions were promotion focus and trait self-esteem as there was a significant main effect of promotion focus on perceived control, β = .23, *p* < .01, and a significant main effect of trait self-esteem on perceived control, β = .11, *p* < .001 (see first model of Table 7). Given these results, I made a third model, comprised of only significant variables (see Table 7). By comparing the adjusted r-squared values of all three models (model 1 $R^2_{Adjusted}$ = .4054, model 2 $R^2_{Adjusted}$ = .4128, model 3 $R^2_{Adjusted}$ = .4123), I was able to determine that the best model for predicting perceived control is model 3, as it has the highest adjusted r-squared with the fewest variables.

Table 7

Perceived control multiple linear regression table

Variable	Perceived control		
	Model 1 *B*	Model 2 *B*	Model 3 *B*
Promotion focus	.23**	.29 ^{o}	.23**
Prevention focus	-.01	-.19*	
Trait self-esteem	.11***	.12**	.11***
Age	.00	.02	
Trait perceived control	.04^{o}	.02	.03^{o}
CGT condition		-1.88	
IGT condition		-6.57	
Trait self-esteem * CGT condition		-.03	
Trait self-esteem * IGT condition		-.01	
Promotion focus * CGT condition		-.07	
Promotion focus * IGT condition		-.07	
Prevention focus * CGT condition		.43	
Prevention focus * IGT condition		.18	
Trait perceived control * CGT condition		-.01	
Trait perceived control * IGT condition		.04	
Age * CGT condition		-.04	
Age * IGT condition		-.02	
Adjusted R^2	.4054	.4128	.4123
F	22.41***	7.49***	37.71***

^{o} $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

Once again there were no significant differences for change in perceived control across conditions. Given that there were no significant differences in either data set before they were combined, this is not surprising. There were no significant differences between conditions for positive affect change. Once again, this could be due to the manipulation tasks being boring. To investigate this further I created a difference score for the excitement item of the PANAS. There was no significant difference in excitement difference across conditions ($F_{(2,155)} = 3.93$, *ns*). Although, participants in both the IGT ($M = -.15$, $SD = .13$) and CGT ($M = -.19$, $SD = .13$)

experienced a slight decrease in excitement on average, whereas those in the control condition experienced a slight increase (M = .29, SD = .13). There were no significant differences across conditions in negative affect change. To further understand the influence of gender on behaviour change following gambling, several two-way ANOVAs and ANCOVAs were run. There were no significant gender by condition interactions.

As indicated earlier hypothesis 3 is: older adults in gambling conditions will experience a significantly larger increase in perceived control than university students, supporting Loroz's model applying to older adults and Binde's model applying to university students. For hypothesis 3 a two-way ANCOVA revealed that there was no interaction effect between age and condition for changes in perceived control. There were also no significant main effects for either condition or gender. Given, the lack of a significant interaction effect between age and condition, along with no significant main effects there is not enough evidence to reject the null hypothesis.

For hypothesis 4 (university students in gambling conditions will experience a significantly larger increase in positive affect and a larger decrease in negative affect than older adults in gambling conditions, supporting Loroz's model applying to older adults and Binde's model applying to university students), 2 two-way ANOVAs revealed no significant interaction effect for age and condition for positive affect, and no significant interaction effects for negative affect. There was one significant main effect for condition for positive affect, which revealed that those participants in the control condition experienced a decrease in positive affect compared to those participants in the IGT and CGT conditions. There were no significant main effects for change in negative affect. Given that there was no main effect for age on positive affect change and that there were no significant effects for negative affect, there is not enough evidence to reject the null hypothesis.

Even though there were no gender effects in experiment 2, the higher level gender by condition by age interaction and gender by age interaction effects were investigated further. For perceived control there were no significant three-way interactions, no significant two-way interactions and no significant main effects. There were also no significant three-way or two-way interactions for positive affect; however, there was a significant main effect for condition. The same pattern emerged again, with participants in the control condition experiencing a decrease in positive affect compared to gambling conditions and with older adult participants experiencing a decrease in positive affect compared to university student participants. Once again, there were no significant three-way interactions, two-way interactions or main effects for change in negative affect. Given these findings, gender does not appear to interact with age in regards to behaviour change.

To assess research questions 1 and 2, several multiple linear regressions were run to identify the best predictors of perceived control. To inform model creation, correlations were calculated between variables across conditions. Correlations for promotion focus were significantly strongly correlated with self-esteem, perceived control and sense of control across age groups and conditions. Prevention focus was most frequently significantly moderately correlated with sense of control across age groups and participants. Self-esteem was significantly strongly correlated with perceived control and sense of control across conditions for university students, but not for older adults (self-esteem only moderately correlated with perceived control in the CGT and correlated moderately to strongly with perceived control and sense of control in the control condition). Perceived control was moderately correlated with sense of control across age groups and conditions (except for older adults in the CGT condition).

From these correlations, two models were initially tested, a complete model containing all variables, conditions, and their two-way interactions (three-way interactions were not included due to low numbers per cell) and a reduced model containing only personality variables. From the complete model and reduced model, a third model was created using only significant variables. The third model accounted for almost as much variance as the complete model, so the third model was accepted. This model identified promotion focus, trait self-esteem and trait sense of control as the best predictors of perceived control. This evidence provides further support for the literature that both promotion focus and trait self-esteem are strongly positively correlated with perceived control (Berkowitz, Waxman, & Yaffe, 1988; Guo & Spina, 2015).

Summary and Concluding Discussion

Understanding individual's motivations to gamble is very important for communicating safe gambling habits. Although problem gambling is only problematic for a small number and proportion of the general population, reducing harm is always important. For hypothesis 1 (older adults will see an increase in perceived control following a gambling task, supporting Loroz's (2004) model), it was found that older adults did not experience any change in perceived control following a gambling task. Even though Loroz (2004) identifies control as a primary motivator for gambling behaviour in older adults, and that they typically experience a lower sense of control (Mirowsky & Ross, 1992; Mirowsky, 1995; Mirowsky, 2013). This could be due to a variety of factors such as methodology, sample, or perceived control not being as large of a motivator it was once thought to be. Per Binde's (2013) research identifies five primary motivators for gambling behaviour, none of which are control. Given the findings from this research, Per Binde's motivational model seems to be the best for understanding pursuing

gambling behaviour. There also was very little evidence for hypothesis 2 (university students will experience an increase in positive affect along with a decrease in negative affect following a gambling task, supporting Binde's (2013) model), regarding positive and negative affect change, as there were only significant differences in positive affect in the combined analyses. Since affect is identified in both Loroz's and Binde's models as a motivator for gambling behaviour, it is surprising to find that there were little to no main effects for affect change in both the university student and older adult samples.

When looking at the relationships between age and gambling, there was no significant evidence for hypothesis 3 (older adults in gambling conditions will experience a significantly larger increase in perceived control than university students, supporting Loroz's model applying to older adults and Binde's model applying to university students). The older adult sample and university student sample did not differ on trait sense of control (SCI, as mentioned previously). This could be a significant driver for the lack of evidence for hypothesis 3. Mirowsky (1995, 2013) identified that individuals with a higher education level typically have a higher sense of control, even in older adults. Given that the majority of the older adults in the sample are from a university setting, friends of those in a university setting, or retired faculty members, they are likely to be more educated than the average community member. While education moderates the decrease in sense of control, older adults with more education still experience a decrease in sense of control, just not to the same extent. Similarly, well-educated older adults are also able to buffer against the cognitive effects of loss and disease to a greater extent than those who are less educated (Schaie, 1996; Zhang, Gale, Erickson, Brown, & Woody, 2015). This slight difference in magnitude could be enough of a difference for the older adults in experiment 2 to not have experienced an increase in perceived control following a gambling task. It could also be possible

that exerting control while gambling does not have any implications for perceived control outside of a gambling setting.

There was also no significant evidence for hypothesis 4 (university students in gambling conditions will experience a significantly larger increase in positive affect and a larger decrease in negative affect than older adults in gambling conditions, supporting Loroz's model applying to older adults and Binde's model applying to university students), as there was no interaction between age and affect change. While there were some significant differences by condition for positive affect, there were no significant age effects, or significant effects for negative affect. The gambling tasks that were used were both fairly long, approximately 15 minutes, and it could be that a task of this type for 15 minutes becomes boring after some time. Both are fairly repetitive with multiple trials, and they may not accurately reflect gambling in a non-lab setting. Although university students often stare at screens and continuously click for entertainment (listicles, Pinterest, refreshing Facebook, etc.), the lack of a novel image or joke after every click may be off-putting and particularly boring. Nevertheless, if this were true, an increase in negative affect would be expected and that was not the case. It could also be possible that participants remembered their answers from the pre-measures and answered the same way, even though participants were instructed not to.

From the three research questions, there was evidence that both promotion focus and self-esteem predict perceived control, above and beyond condition, age, and other variables. This support is in line with research that has investigated perceived control and self-esteem, and partially in support of research that has investigated perceived control and regulatory focus. Guo and Spina (2015) found that promotion focus correlated with high perceived control and that prevention focus correlated with low perceived control. While there was evidence from these

experiments that promotion focus correlated with perceived control, there was no evidence that prevention focus negatively correlated with perceived control. Instead, there was some support that prevention focus positively correlated with perceived control, but only in the CGT condition. Since participants are able to "lock in" their bet before it increases or wait until the bet decreases to a level they are comfortable with, individuals who are more prevention focused may have felt more control, since they were reducing the negative outcome. Given the strength of the linear model with promotion focus, self-esteem and sense of control, and the lack of evidence from group comparisons, it would appear that gambling does not influence perceived control, regardless of age. In sum, this research verifies that Per Binde's motivational model for gambling provides the best explanation for why individuals pursue gambling.

Limitations and Future Directions

Although there was no support for the hypotheses tested, there was some conclusive support for the use of Per Binde's (2013) motivational model for gambling behaviour. The most prominent limitation is the small number of participants for both experiments 1 and 2. Power issues exist with both experiments, and the problem is larger with experiment 2 (which only had ~23 participants per condition). Collecting more participants would provide more power, which may clarify the findings, and consequently the conclusions that were made. Ensuring that the participants had more diverse education backgrounds would also be beneficial. Furthermore, reducing the number of multiple comparisons would allow for a less conservative critical alpha, which may provide more support for the hypotheses tested. Although there are both power and multiple comparison issues, the methodological problems with these experiments may be more problematic. The SCI was used as the pre-measure for perceived control, even though it measures sense of control, and in a more general (trait) sense. While using SCI as a covariate

alleviates some of the problematic nature, using a state measure for the pre-measure would have been more ideal. The PCI is a very short scale (8 items), which is comprised of two latent factors, locus of control and competence. Given the large size of the SCI and the small size of the PCI, they may not capture the same aspects of control, and the lack of change across conditions could be due to this.

Furthermore, the manipulation conditions and control condition are quite problematic as well. The IGT is a very repetitive card selection task, where a deck has a set of pre-assigned values. Given the large amount of trials for the IGT, participants could have become bored, which may have influenced both positive and negative affect. While the IGT and CGT were both different (the CGT has a more active betting component), they could both be non-reflective of gambling elsewhere. The ecological validity for both could be quite low, which may inform the unclear support for some hypotheses. The control condition was also quite passive (a reading task) compared to the two gambling conditions. This could cause problems as the differences that were seen could be due to the activity level, not necessarily the gambling aspect of the manipulation conditions.

Participant recruitment was another limitation of this research. Both samples primarily consist of women and convenience sampling was used for experiment 2. Ideally, experiment 2 would have been comprised of a sample from one organization (similarly to the recruitment method used for experiment 1). Due to the difficulty of collecting older adult participants, participants were collected any way possible, and due to this, the sample is not reflective of the general population. To ease the collection burden of experiment 2, some participants participated in the comfort of their own home (this also meant in several different towns (Kitchener, Guelph, Orangeville)), whereas participants in experiment 1 all participated in lab on WLU campus in

Waterloo. Since all of these cities are located in southern Ontario, they are relatively close to several OLG casinos (Brantford) or racetracks (Elora, Milton). This could be problematic as participants may gamble more than individuals from other cities that are further away from OLG establishments. Experiments 1 and 2 were also conducted at different times of year, experiment 1 took place in the fall and experiment 2 took place during winter and spring. There could be seasonal effects present between experiments, as there were participation barriers for study 2 (inclement weather).

Future research should continue to explore the relationship between gambling and behaviour change. While this research was inconclusive regarding perceived control, there was some support for affect change following gambling. This should be explored further, along with some of the other aspects identified in Per Binde's (2013) motivational model for gambling. While affect may relate to amusement and excitement, further research should be done to tease apart these two concepts. Additionally, socialization, avoidance, and monetary motives should be investigated further. Correcting the methodological issues present in this research is also advised, although there are few in lab gambling tasks available. Overall, the continued study of how gambling may influence behaviour is important to fully understand why gambling is continually pursued by individuals.

Contribution

Even though there was no support found for the hypotheses that were investigated, some new avenues of investigations are suggested by the results of this research. Mirowsky (1995) found that as individuals age, their sense of control decreases, even with a better education. Nevertheless, older adults who had four or more years of college/university experienced a lower decrease in sense of control; education appears to buffer against the decrease in sense of control

(1995). While Mirowsky (2013) presents a very strong case for a decrease in sense of control, all of the data that he uses are from the late 1980's to the early 1990's. From the United States Census Bureau, about 24% of Americans had four or more years of college/university education (U.S. Bureau of the Census, 1990). As of 2014, 32% of Americans have a bachelor's degree or higher (U.S. Census Bureau, 2014a). Back in 1990, only 4% of older adults (above 55) had four or more years of college/university education (U.S. Census Bureau, 1990). In 2014, about 29% of older adults (above 55) had for or more years of college/university education (U.S. Census Bureau, 2014b, Table 3). Since the average level of education has changed for older American adults in the past 25 years, it is very possible that these downward trajectories that existed for sense of control have changed such that they are greatly reduced or gone relative to other age groups.

Although this explanation relates to Americans, education levels of older adult Canadians are actually higher. In 1990, 12% of older adults (above 55) in Canada had four or more years of college/university education (Statistics Canada, 2015). In 2014, 38% of older adults (above 55) in Canada had four or more years of college/university education (2015). As mentioned previously, Rowe and Khan (1998) identified three components of successful aging: engaging with life, avoiding disease, and maintaining high cognitive and physical function. Improved educational attainment directly relates to maintaining high cognitive and physical function. Furthermore, the rate at which information is moving has drastically increased with the onset of the Internet in the mid-1990s. This has made education and learning far more accessible, with specific services such as Coursera and Udacity offering detailed courses outside of a university context; and even some universities are offering their courses online free of charge (Harvard, MIT, etc.). Given that learning has never been easier, there could be extremely positive outcomes

for older adults who would otherwise experience a decrease in sense of control as they age. This pattern will not only persist in upcoming years, but also get better as technology improves and becomes more widely adopted across all age groups.

Given that education levels have risen, our understanding of the importance of control for older adults in gambling motivation is much clearer. Given that there was no difference in control for older adults, it appears that control is not a concern, or possible motivator for gambling behaviour, as Loroz has suggested (2004). There also was some support for mood change, although not enough to definitively say whether gambling influenced mood to the extent hypothesized. Regardless, Per Binde's (2013) model appears to be best for understanding why individuals gamble, as there is no support for a separate model for older adults. While there was no support for change in perceived control, the relationship between self-esteem and perceived control and the relationship between regulatory focus and perceived control were supported further. Both trait self-esteem and promotion focus accurately predicted perceived control. The empirical literature regarding gambling motivation, along with perceived control in older adults, have both been moved forward by this research.

Appendix A

Event Reaction Questionnaire

This set of questions asks you HOW FREQUENTLY specific events actually occur or have occurred in your life. Please indicate your answer to each question by circling the appropriate number below it.

1. Compared to most people, are you typically unable to get what you want out of life?

1	2	3	4	5
never or seldom		sometimes		very often

2. Growing up, would you ever "cross the line" by doing things that your parents would not tolerate?

1	2	3	4	5
never or seldom		sometimes		very often

3. How often have you accomplished things that got you "psyched" to work even harder?

1	2	3	4	5
never or seldom		sometimes		very often

4. Did you get on your parents' nerves often when you were growing up?

1	2	3	4	5
never or seldom		sometimes		very often

5. How often did you obey rules and regulations that were established by your parents?

1	2	3	4	5
never or seldom		sometimes		very often

6. Growing up, did you ever act in ways that your parents thought were objectionable?

1	2	3	4	5
never or seldom		sometimes		very often

7. Do you often do well at different things that you try?

1	2	3	4	5
never or seldom		sometimes		very often

8. Not being careful enough has gotten me into trouble at times.

1	2	3	4	5
never or seldom		sometimes		very often

9. When it comes to achieving things that are important to me, I find that I don't perform as well as I ideally would like to do.

1	2	3	4	5
never true		sometimes true		very often true

10. I feel like I have made progress toward being successful in my life.

1	2	3	4	5
certainly false				certainly true

11. I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them.

1	2	3	4	5
certainly false				certainly true

Appendix B

Rosenberg Self-Esteem Scale

INSTRUCTIONS: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

	strongly agree	agree	disagree	strongly disagree
1. On the whole, I am satisfied with myself.	SA	A	D	SD
2. At times I think I am no good at all.	SA	A	D	SD
3. I feel that I have a number of good qualities.	SA	A	D	SD
4. I am able to do things as well as most other people.	SA	A	D	SD
5. I feel I do not have much to be proud of.	SA	A	D	SD
6. I certainly feel useless at times.	SA	A	D	SD
7. I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8. I wish I could have more respect for myself.	SA	A	D	SD
9. All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10. I take a positive attitude toward myself.	SA	A	D	SD

Appendix C

The PANAS (Watson, 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this right now, that is, at this present moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly	a little	moderately or not at all	quite a bit	extremely

_____ interested	_____ irritable
_____ distressed	_____ alert
_____ excited	_____ ashamed
_____ upset	_____ inspired
_____ strong	_____ nervous
_____ guilty	_____ determined
_____ scared	_____ attentive
_____ hostile	_____ jittery
_____ enthusiastic	_____ active
_____ proud	_____ afraid

Appendix D

General Domains of Control

Proper Mark

Improper Mark

USE NO. 2 PENCIL ONLY

Below are several statements that may apply to you. There are no right or wrong answers, or trick questions. Based on *your* understanding of the statement, fill in the bubble which you believe is *most* accurate. Mark only one bubble for each statement.

Example: For the statement, *Being influential is important to me*, if you feel that it is *often* important, mark bubble (5), which signifies Often.

		Never	Rarely	Occasionally	Sometimes	Often	Very Often
1.	I have a positive sense of control in my life.	1	2	3	4	5	6
2.	If I decide to, I have the ability to make changes in order to gain more control over my life.	1	2	3	4	5	6
3.	I make a great deal of effort in order to try to stay in control of my life.	1	2	3	4	5	6
4.	I have a strong desire to be in control	1	2	3	4	5	6
5.	I wish I could let go of control.	1	2	3	4	5	6
6.	I fear losing control.	1	2	3	4	5	6
7.	I lose control of myself.	1	2	3	4	5	6
8.	I lack control of my environment (other people, situations).	1	2	3	4	5	6
9.	I am too passive and helpless	1	2	3	4	5	6
10.	I am too aggressive and over-controlling	1	2	3	4	5	6
11.	I am able to calmly accept that which I am not able to change or alter.	1	2	3	4	5	6
12.	I am able to act assertively and decisively to try to change or alter what I want to.	1	2	3	4	5	6
13.	I am able to choose and make decisions about the important things in my life.	1	2	3	4	5	6
14.	I am able to set clear, realistic, and meaningful goals.	1	2	3	4	5	6
15.	I am aware of my own feelings and motivations and recognize how they affect me.	1	2	3	4	5	6
16.	I take appropriate responsibility for that over which I have control.	1	2	3	4	5	6
17.	I make the appropriate amount of effort and have sufficient discipline to reach my goals.	1	2	3	4	5	6
18.	I have the skills and ability to reach my goals.	1	2	3	4	5	6
19.	Others help me make changes in order to gain more control over my life.	1	2	3	4	5	6
20.	My sense of control comes from my own efforts.	1	2	3	4	5	6
21.	My sense of control comes from family and friends.	1	2	3	4	5	6
22.	My sense of control comes from the government and society	1	2	3	4	5	6
23.	My sense of control comes from a higher power (God, religion, spiritual beliefs).	1	2	3	4	5	6
24.	It is important for me to be in control of myself.	1	2	3	4	5	6
25.	It is important for me to be in control of others: people and situations.	1	2	3	4	5	6
26.	Others have too much control over me.	1	2	3	4	5	6
27.	It is important to give the appearance to others that my life is in control.	1	2	3	4	5	6
28.	I seek risks, excitement, and adventure.	1	2	3	4	5	6
29.	I feel that I am losing control in areas where I once had control.	1	2	3	4	5	6
30.	Achievement is important to me.	1	2	3	4	5	6
31.	I like things around me to be ordered and dislike ambiguity and the unknown.	1	2	3	4	5	6
32.	Before making a difficult decision I like to gather as much information as possible.	1	2	3	4	5	6
33.	I have the right degree of self-control.	1	2	3	4	5	6
34.	I have too much self-control.	1	2	3	4	5	6
35.	I hold my anger in even when I want to express it.	1	2	3	4	5	6
36.	Having power is important to me.	1	2	3	4	5	6
37.	I want to control my anger better.	1	2	3	4	5	6

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Appendix E

At the World Pun Championships, Victory Is Easier Said Than Punned

After Ben Ziek won big at the 2013 world pun championships, his life didn't change. He kept the same job he's had for 13 years, as a night auditor at the Burbank Airport Marriott. He gets in at 11 p.m., helps balance the books, does wake-up calls and deals with guest complaints before leaving at 7:30 a.m.

"It was like somebody created a special Disneyland just for me. It's a whole weekend where you just don't have normal conversations with anybody." —Diana Gruber

Co-worker Angelique, who sits at the desk nearby, does not appreciate his punning. "She doesn't like it all," Ziek says. "For 13 years I've joked that she doesn't have a sense of humor."

A 38-year-old gentle giant with a dark crew cut, Ziek has the fortune and misfortune of being among the best in the world at something many people disdain.

While puns often are derided as the lowest form of humor, they have a storied history. The earliest known puns were cave carvings — from one angle, they looked like a woman, from another an erect penis, according to John Pollack's *The Pun Also Rises*. The form counts among its many famous supporters Aristotle, Cicero, Jonathan Swift and, of course, Shakespeare, who used thousands.

Puns tailed off with the Age of Enlightenment, when rationalists became uncomfortable with puns' ambiguity, and the rise of the printing press (puns are not as fun on the page). In America they were popular in the age of Groucho Marx

and Abbott & Costello but fell out of favor as comedy became more subversive in the 1960s and '70s.

Now puns are enjoying a newfound acceptability. *Sex and the City* used them ("If you're tired, you take a napa, you don't move to Napa"), and *The Daily Show*'s punny graphics get laughs. Rappers pun constantly, including Eminem ("McDonald's bathroom, in a public stall, droppin' a football, so every time someone walks in the John I get Madden") and André 3000 ("I cc'ed every girl that I'd see-see around town").

The resurgence goes hand in hand with the mainstreaming of nerd culture. Hollywood's nerd-in-chief, Joss Whedon, used them in *Buffy the Vampire Slayer*. Everyone's a punster on Twitter through hashtag wars (#RuinANurseryRhyme? Old Mother L. Ron Hubbard), which are a big part of Chris Hardwick's Comedy Central show,*@midnight*. The Internet has helped spread puns for subversive purposes, as when Chinese citizens spread the meme "grass mud horse," which in Mandarin is a pun on "fuck your mother" and a symbol of defiance against government censors.

The pun comeback has heightened visibility for the O. Henry Pun-Off World Championships in Austin, Texas, where last year Ziek won both major events: In Punniest of Show, judges rate a contestant's 90-second prepared routine. In the Punslingers tournament, contestants face off one-on-one to see who can come up with the most puns on words in a given category.

Newer competitions have popped up, such as Pundamonium, a "pun slam" that has been held in Minneapolis, Milwaukee, Chicago and other cities. The monthly Punderdome 3000 in Brooklyn draws up to 400 people.

Punderdome host Jo Firestone feels that the legitimacy of puns dovetails with the rise of normcore. If it's cool to wear high-waist pants and athletic socks, it's

cool to geek out on wordplay. "Puns are something that have always been a dad's joke," she says.

Still, in conversation, puns are more likely to draw groans than praise. Ziek doesn't mind. "Groans are good," he says. "Laughs are great. Silence is bad."

On May 10, he was back in Austin to defend his titles.

The Pun-Off, held annually since 1978, matches the peculiar energy of a place where the unofficial slogan is "Keep Austin Weird." This is the city, after all, that organizes Eeyore's Birthday Party, an outdoor costume party honoring the depressed donkey from *Winnie-the-Pooh*.

The night before the Pun-Off, competitors gather for a dinner on the spot where the event is set to take place — the park behind the O. Henry Museum, dedicated to the author known for his wordplay and surprise endings. (The Pun-Off is owned by the Austin Parks and Recreation Department.)

It's a reunion of legends past. Steve Brooks, a country singer with a mop of gray hair, is the only other person besides Ziek to have won both Punslingers and Punniest of Show in the same year. Retired from competition, he now serves as a judge and emcee.

"I miss the adrenaline rush," he says. "Sometimes if I'm emceeing a couple folks and their puns are crappy, I want to jump in and make some good ones to show them how it's done. Or show them how it's pun."

Brooks has a sermon he performs in Unitarian churches on "pundamentalism." "The ambiguities of the meanings of words are not important just to puns but to poetry and scriptures and to writing in general," he says. "Sometimes the way that a pun affects the listener can be a miniature Zen moment of enlightenment. It causes a little explosion inside your brain."

Another judge is Jim Ertner, 67, a retired naval architect who lives in Greensboro, North Carolina. "Noah was the world's first naval ark-itect," he adds.

Working in shipbuilding, for a company of thousands, he would be the go-to guy for roasting retiring employees. Ertner now writes joke books, as does fellow judge Stan Kegel, a retired pediatric cardiologist in Orange County.

> ***“Doing puns and having a girlfriend is accomplishment enough. I may be the only one [here with both].” —D’arren Walsh***

In this world of gray-haired or socially awkward men, 39-year-old Diana Gruber is conspicuous. About three years ago, her roommate asked her to help with a dinner party, and she replied with a spray of punny texts: "OK, whatever you say, chop chop." "When your guests get here they can hummus a tune." Gruber's roommate told her, "There's an organization for people like you."

Gruber first attended the Pun-Off in 2012. "It was like somebody created a special Disneyland just for me," she says. "It's a whole weekend where you just don't have normal conversations with anybody."

Gruber speaks six languages and can pun in them all. Last year she moved to Monterey to get a master's in teaching a foreign language, but her fellow students didn't always appreciate her puns — like when a linguist named Dr. Walqui was giving a lecture, she went around asking if anyone was going to the "Walqui talkie."

"Sometimes I'll make a pun that I expect the class to laugh at it and they don't," she says. "We're all language geeks, so why aren't we appreciating it more? But it may be I'm out of line and we're talking about something else and it's not funny time, it's serious time." She recently left grad school and moved to San Diego.

The dinner also attracts first-timers, such as a tall Brit wearing a name tag that said D'arren Walsh. Does his name have an apostrophe? "No, I'm just being a dick," he says.

Walsh says he won the U.K. Pun Championships, which took place in a comedy club. "I was the organizer," he says. "I was also the judge."

In London, he's primarily a stand-up comic. "I have a very understanding girlfriend. Doing puns and having a girlfriend is accomplishment enough," he says. Scanning the crowd, he adds, "I may be the only one."

Most participants appreciate an environment in which they can let their puns loose without fear of glares. But there is pressure to measure up. When one competitor, Lisa Bonos, meets Walsh by the vegetable platter, he starts by saying things like, "There's a DIP in the conversation." She says later, "I was wondering if I was punning enough."

At one point Gruber helps lead a discussion of favorite puns. One competitor says, "What's *The Onion* newspaper's biggest competitor?" Ziek quips, "Is it Wiki-Leeks?" The punster seems embarrassed as he reveals his passable but inferior answer, the Garlic Press.

As the night wears on, the punsters form teams to play Schmovie, a board game in which players try to create the best punny movie titles. One round calls for a movie about a constipated basketball player.

A member of Ziek's team comes up with *Scottie Poopin'*, but Ziek overrules him in favor of the more on-point *LeBrown Jams*. It's a tough round, but his pick ultimately triumphs over another team's*Poop Dreams*.

There is no formal training for competitive punning in the way there is for, say, baseball or chess. The Pun-Off is open to anyone who signs up online; instead of fame or riches, the winner gets a trophy topped by a golden horse's rear end.

But Ziek unintentionally put himself through exactly what rigorous pun training might look like. Growing up in South New Jersey and then Pennsylvania, he read books of riddles, limericks and Tom Swifties — punny jokes that go something like, " 'I am so glad I had that cardiac surgery,' Tom said whole-heartedly." Ziek has a photographic memory and was on the Quiz Bowl team in high school. After moving to L.A. in 1999, he studied short-form improv games at ComedySportz.

His Glendale apartment, shared with four roommates, looks like a dorm room at game show college. On one wall are colored plaques with prizes and prices from *The Price Is Right*. On another are photos of game show hosts (Rip Taylor, Bill Cullen) and bookcases stuffed with game show–themed board games such as Beat the Clock, the Gong Show Game and Remote Control.

All five roommates have been on game shows. Travis won a Cadillac on *The Price Is Right*. Ethan won a Jeep Liberty on *Wheel of Fortune*. Ziek has been on five, including *Are You Smarter Than a Fifth Grader?*, where he won $25,000, and *Win Ben Stein's Money*. Ziek's also performed in indie professional wrestling, playing a punster wrestling manager named Lex Icon.

Along with a few other friends, the five roommates started Home Game Enterprizes, a production company that pitches game show ideas to networks. They also replicate game shows like *Family Feud* in game nights at bars around L.A.

Ziek found out about the Pun-Off two decades ago, but he could never scrounge enough cash for a ticket to Austin until 2009. To drill for its Punslingers competition, he made a PowerPoint program that would select a random topic and give him five seconds to make a pun. He came in second in his first year of competition, and then won in 2010 and 2011.

Ziek lives in a world that devalues his particular blend of interests and abilities. He's always wanted to be a game show host, but "I realized that that was a long shot based on my looks," he says.

Still, his pun prowess has led to some of his life's greatest highs. "I love the ones that take words and take a little twist, add a letter, drop a letter, slur a letter," he adds. "There are so many things you can do with a word."

On Saturday at the Pun-Off, check-in begins at 11 a.m., to the sounds of a live band performing TV theme songs. Several hundred young locals and families assemble on blankets and lawn chairs, cramming under the trees to avoid the sun.

Gary Hallock runs around in khaki shorts and an American flag shirt. While juggling a day job managing an Austin apartment complex, he has been organizing the Pun-Off for 25 years.

He spends Saturday herding contestants and putting out fires. Occasionally he'll go onstage to say something like, "There are awnings we bought on sale. They're going to be given to the winners, so they'll be the winners of our discount tents."

"It's not so much a passion for punning," he explains. "It's a passion for attention. My wife tells me I'm a media hog." Ready to retire, he's searching for his replacement.

The first event is Punniest of Show: 32 contestants present short, prepared monologues, and judges rate them from 1 to 10. In the event's early years, competitors would typically recite a shaggy-dog story — a long joke that ends with a whopper. But as competition has grown stiffer, the routines have become more pun-saturated, built around themes.

Steve Brooks once performed a legendary routine on "Tex-Mexistentialism" featuring the philosopher "Juan-Paul Salsa." In 2000, Tiffany Wimberly won by

dressing as RaPUNzel: "When I was a young CURL, a jealous queen LOCKed me in a tower. I was STRANDed ... at my SPLIT'S END ... truly a damsel in THESE TRESSES."

As the competition begins, many contestants pun on foods, especially fruits and vegetables. Some tell the story of a date that eventually gets raunchy.

Others are more distinctive. Gruber puns on social media ("He gets all up in MySpace. That's no way to Tweet a girl") and Brandon Austin on video games ("Can't we all just get a Pong?"). British champion Walsh arrives dressed as a chicken ("I heard about this competition on Face-bok-bok-bok").

Ziek, in a blue Hawaiian shirt and jeans, watches his opponents from a lawn chair next to his birth father and stepmom (he grew up with his mom and adopted father). He starts to think about his monologue well in advance of the competition and usually writes it about a month beforehand. Two years ago, he used names of cheeses in a love song to a girl named Brie. Last year his winning routine was titled "Seasonings of Love," the story of a date using spices.

This year he considered punning on every space on a Monopoly board in order, perhaps beginning with "I went to Iran and I Mediterranean," but he scrapped it as too difficult. Instead he went with trees, in the persona of a motivational speaker talking about "how to become more poplar with the ladies."

He commits to his motivational-speaker persona — even using a prop headset — and the tree names blend into his speech with ease: "A wise man doesn't wait for an opportunity — hickory-ates one."

After Ziek comes Andy Balinsky, who cracks up the audience from the first words of his flower-themed routine, as he holds up roses: "Bouquet, I'm ready." But the biggest crowd-pleaser is Alexandra Petri, a young *Washington Post* reporter, whose routine is a diatribe on how America needs a female

president, punning on all the U.S. presidents — in order: "Don't go LINCOLN a JOHNSON to the highest office in the land."

At the end, Ziek, Petri and Balinsky tie with 39 points out of a possible 40, and the verdict is decided by audience clap-off. Petri is the overwhelming winner. Ziek comes in second. "Her routine was amazing," he acknowledges.

But he can still defend his title in Punslingers, the more challenging of the two contests — and the more bizarre.

In Punslingers, participants have five seconds to make a pun on a word in a given topic. Then it's their opponent's turn. They can't pun on a word that's been used — if they do, they get a strike. Three strikes and they're out. If they can't come up with anything, they're also out. They can't use cliches or figurative uses of a word. If the category is horses, for example, they can't say, "I'm saddled with a burden."

The puns in Punslingers don't have to be funny — they just have to be puns. Yet it's far more entertaining than Punniest of Show. It's hard to be patient with a performer who spends a year coming up with "lettuce go back to my place." But it's impressive to see someone come up with a pun on the spot that hits a comedic bull's-eye.

A nurse named Brian Oakley is head of the topic committee, an unofficial title that he treats with the seriousness of a federal cabinet appointment. Back when he won Punslingers three times, the categories were pretty general, such as "food," but the committee has picked more elaborate topics as competition has gotten stiffer. Last year, one category was "dessert (no candy)" and another was "candy (no dessert)." The least successful category Oakley can remember was "Words that start with P," which got too confusing when the contestants departed from the hard "P" sound and moved on to philosophy and psychiatry.

If you had the time, Oakley could spend hours feeding you Punslingers strategy. "If the category is colors, don't start with fuchsia," he says, "because he's going to be burning through green and blue and gray and black."

Ziek's strategy is to immediately come up with two puns, one that he uses right away and another that he keeps in the back of his mind in case he's desperate. He look out at the crowd, at the trees, at the convention center in the background, to see if something jogs his memory. Sometimes you can play off your opponent — if the topic is magic, for instance, your opponent may drift into mythology, which opens up more possibilities.

One of Ziek's rivals is the 2012 winner, Dav Wallace, 41, dressed in a sea-green Hawaiian shirt, cargo shorts and sandals. He works in marketing in Austin and has been known to pull off visual puns: In a category called "farming and ranching," he took an audible exhale and then crouched: silo.

In the car with his wife on the way over, he punned on all the European Union member states. "She's sick of this week," he says.

Another favorite is 2009 winner Matt Pollock, a 32-year-old systems engineer who, like Ziek and Wallace, is an improv comedian on the side. He grew up telling "horrible jokes" with his brother, he says. "We'd make our parents sad." He and Ziek are like Federer and Nadal — they've faced each other in each of the five previous years, with Ziek winning four times.

"He has an amazing vocabulary, and that's usually what determines who does well," Pollock says of Ziek. "He doesn't usually run out of words."

In the first round, Ziek faces Adam Bass, a writer for Groupon in Chicago. For Bass' whole life, he says, whenever he hears a word like scarf, he thinks immediately of both neckwear and voracious eating: "People say, 'You were born to do this.' "

His dad, Mike Bass, took him to the Pun-Off as a 30th-birthday present. The former sports editor for the *St. Paul Pioneer Press* used to pun — but when his sons started doing it, he realized its effect. "My head would be spinning and I'd go, enough was enough," he says. "I had to stop. I had to be the adult."

The category is "art and artists," and Bass' college art classes come in handy. "I gotta get out of here, I have a Weegee," referencing the famous photographer as he reaches back toward his underwear. But Ziek is always quick to respond — "I'm excited for this competition. That's why I Rodin to town early" — and eventually outlasts him.

Bass is satisfied. "It's like that boxer who wants to go five to 10 minutes with the heavyweight champion," he says.

Ziek dispatches his next opponent in "holidays and celebrations": "People in Switzerland, they're known for being neutral in the wars, but one time we tried giving them guns — it was Arm-a-Swiss Day." He takes down another in "weapons (no firearms)": "That's noose to me." (At one point the judges remind contestants that an air strike is not allowed because it involves the use of a projectile, a point of order so esoteric that an irritated audience member yells, "Whaaat?!")

In the semifinals, Ziek dispatches Wallace in "groups (human & animal)." Wallace: "Next year this category should be band." Meanwhile, Pollock goes round after round churning out puns so well-crafted you'd swear he's reading straight from a pile of candy wrappers. On "medical devices": "I made a new machine to call my sibling. It's a dial-a-sis." On "cleaning": "What does a Japanese person clean their ear with? A wa-swab-i."

He wins a marathon battle with Petri on "correspondence." Petri: "I work with graphs, but they don't listen to me. You can't TELL A GRAPH anything." Pollock: "The port-a-potties over there will not let my wife in. DEAR JOHN, LET HER."

Every time he hears a gem, whether his or an opponent's, he does a little leprechaun jig.

The flaw of Punslingers is that it occasionally feels more like a test of vocabulary than one of punning ability. Competitors such as Ziek and Pollock can take the syllables of just about any word or phrase, change those sounds into a new word or phrase, and then reverse-engineer a sentence to justify its existence.

Yet just enough comedy emerges to make the competition feel artful. The best punsters may be so used to making puns for humor that they can't avoid it, even when it's not necessary. Sometimes it's just easier to be funny.

In the final, Ziek faces his nemesis, Pollock, in "musical genres."
Pollock: "My friend Ray happens to have come out of the closet. RAY GAY."
Ziek: "Don't attack me with your gardening implement. Put the HOE DOWN."
Pollock. "My friend's a Luddite. TECH — NO!"
Ziek: "I taught my mother how to do archery. MOM BOW."

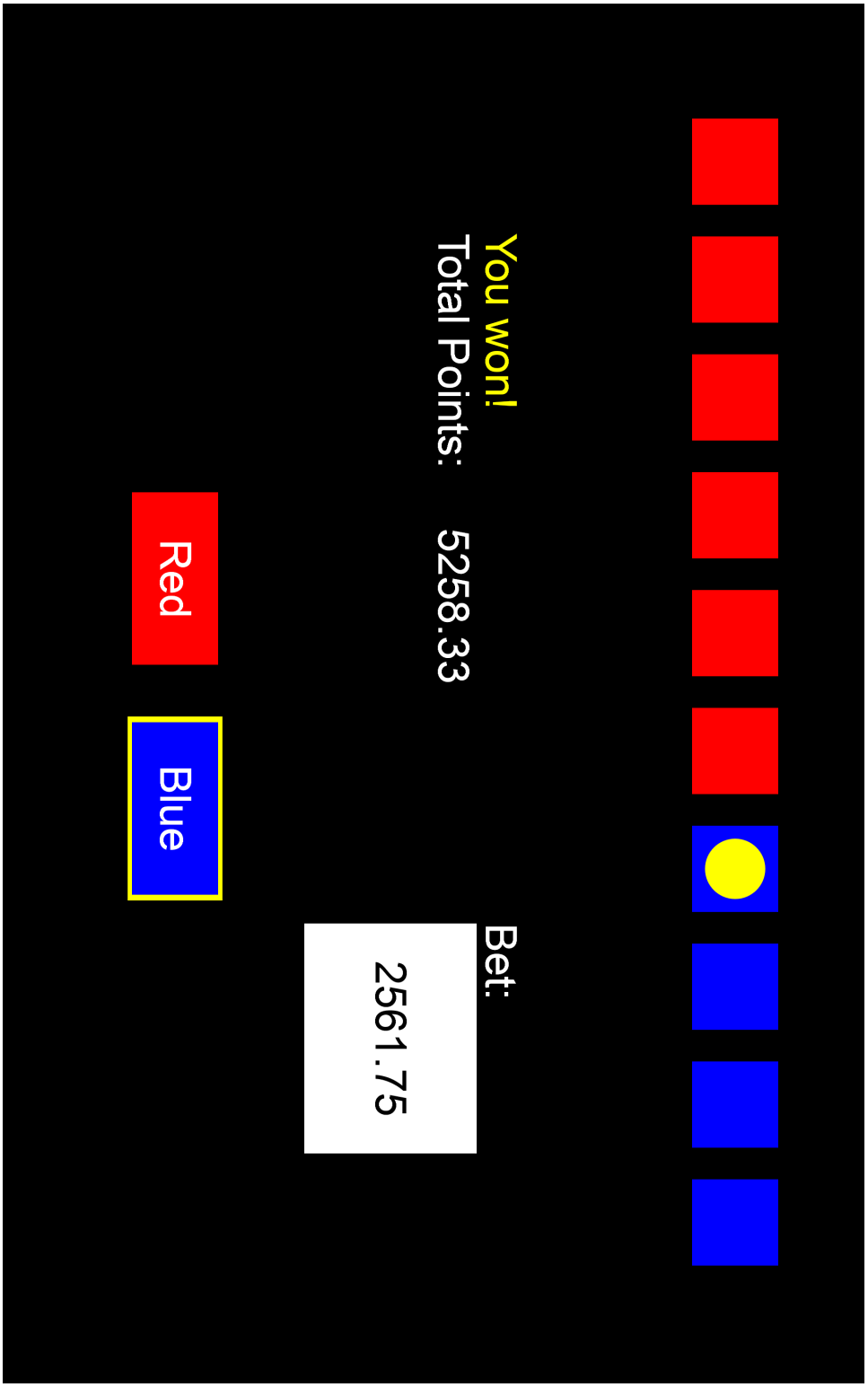
After a couple dozen times back and forth, Ziek draws a blank. There's silence for several seconds, as the crowd, and maybe even the judges, seem unable to concede that the champion has fallen. Pollock is the winner.
"The last six things, I had nothing," Pollock says afterward. "I started talking and hoped that when my lips stopped moving I would have something."

Ziek is resigned, but his agitation shows. At one point he walks over to Pollock.
"None of us said opera," he says.
Pollock answers, "What's wrong with us?"

Appendix F

Previous total: $2500
Current total: $2600
Deck 1
You won $100
You lost $0
Deck 3
Deck 4
Continue

Appendix G



Appendix H

Perceived Control Items

Item	Description	Scale
1. SFP	Sometimes I feel that I am being pushed around in life.	1 (*agree strongly*) to 4 (*disagree strongly*)
2. CDA	I can do just about anything I really set my mind to.	1 (*disagree strongly*) to 4 (*agree strongly*)
3. NSP	There is really no way I can solve the problems I have.	1 (*agree strongly*) to 4 (*disagree strongly*)
4. DWW	I spend my time usually doing what I want.	1 (*disagree strongly*) to 4 (*agree strongly*)
5. MLH	Maintaining my level of health depends strongly on my own efforts.	1 (*disagree strongly*) to 4 (*agree strongly*)
6. IIA	I have quite a bit of influence on the degree to which I can be involved in activities.	1 (*disagree strongly*) to 4 (*agree strongly*)
7. OPA	Other people's attitudes and actions determine how happy I am.	1 (*disagree strongly*) to 4 (*agree strongly*)
8. EOC	Events outside of my control determine how happy I am.	1 (*disagree strongly*) to 4 (*agree strongly*)

Note. Items 1–3 are from "The Structure of Coping," by L. Pearlin and C. Schooler, 1978, *Journal of Health and Social Behavior, 19,* p. 19–21. Article is in the public domain. Reprinted with permission by the authors. Items 4–6 are from "The Desired Control Measure and Adjustment Among the Elderly," by D. W. Reid and M. Zeigler, 1981, in H. M. Lefcourt, *Research With the Locus of Control Construct* (Vol. 1, pp. 152–157). New York: Academic Press. Copyright 1981 by Academic Press. Reprinted with permission. *SFP refers to feeling pushed around, CDA and DWW refer to a person's ability to do what he or she wants;* NSP refers to problem solving; MLH refers to being responsible for one's own health; IIA refers to activity participation; OPA and EOC refer to others being responsible for one's happiness.

Appendix I

Problem Gambling Severity Index

This self-assessment is based on the Canadian Problem Gambling Index. It will give you a good idea of whether you need to take corrective action.

Thinking about the last 12 months...

Have you bet more than you could really afford to lose?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

When you gambled, did you go back another day to try to win back the money you lost?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Have you borrowed money or sold anything to get money to gamble?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Have you felt that you might have a problem with gambling?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Has gambling caused you any health problems, including stress or anxiety?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Has your gambling caused any financial problems for you or your household?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

Have you felt guilty about the way you gamble or what happens when you gamble?

0 Never. **1** Sometimes. **2** Most of the time. **3** Almost always.

TOTAL SCORE Total your score. The higher your score, the greater the risk that your gambling is a problem.

Score of 0 = Non-problem gambling. Score of 1 or 2 = Low level of problems with few or no identified negative consequences. Score of 3 to 7 = Moderate level of problems leading to some negative consequences. Score of 8 or more = Problem gambling with negative consequences and a possible loss of control.

Ferris, J., & Wynne, H. (2001). The Canadian problem gambling index: Final report. Submitted for the Canadian Centre on Substance Abuse.

Appendix J

B: Gambling ActivitiesIn this section we are interested in learning about a variety of gambling activities. 1) Using the following scale, please indicate the number that best represents your gambling frequency for each statement.

Never	Once or twice in my life	Several times in my life	Maybe once a year	A few times a year	Monthly	At least every week
1	2	3	4	5	6	7

	1	2	3	4	5	6	7
Bingo (play at Bingo Halls or by satellite)							
Raffle tickets (fundraising hospitals, cancer etc.)							
Sports betting pools or on games of skill							
Lottery tickets such as 6/49, Super 7							
Instant win scratch tickets or Nevadas							
Slot machines in casinos or bars							
Casino games other than slots							

	1	2	3	4	5	6	7
Non-casino games for money with family/friends							
Internet gambling/computer games							
Horse racing							
Other							

If other, please specify_____

15) During her lifetime, what kinds of gambling did/does your mother participate in? Using the following scale, please indicate the number that best represents her gambling frequency for each item.

Never	Once or twice in my life	Several times in my life	Maybe once a year	A few times a year	Monthly	At least every week
1	2	3	4	5	6	7

	1	2	3	4	5	6	7
Bingo (play at Bingo Halls or by satellite)							
Raffle tickets (fundraising hospitals, etc.)							
Sports betting pools or on games of skill							
Lottery tickets such as 6/49, Super 7							
Instant win scratch tickets or Nevadas							
Slot machines in casinos or bars							
Casino games other than slots							
Non-casino games for money with family/friends							
Internet gambling/computer games							
Horse racing							
Other							

If other, please specify _____

18) During your father's lifetime, what kinds of gambling did/does your father participate in? Using the following scale, please indicate the number that best represents his gambling frequency for each item.

Never	Once or twice in my life	Several times in my life	Maybe once a year	A few times a year	Monthly	At least every week
1	2	3	4	5	6	7

	1	2	3	4	5	6	7
Bingo (play at Bingo Halls or by satellite)							
Raffle tickets (fundraising hospitals, cancer etc.)							
Sports betting pools or on games of skill							
Lottery tickets such as 6/49, Super 7							
Instant win scratch tickets or Nevadas							
Slot machines in casinos or bars							
Casino games other than slots							
Non-casino games for money with family/friends							
Internet gambling/computer games							
Horse racing							

If other, please specify _____

21) Did you ever gamble as a child or young adult with members of your family?

Never Occasionally On a regular basis

22) With whom did you gamble? Please check all that apply.

Mother Father Brother or Sister Uncle Aunt Cousin

Other, please specify_____

23) What type of gambling was it? Please indicate which members of your family you gambled with in each activity. Please check all that apply.

	Mother	Father	Sibling	Uncle	Aunt	Cousin	Other
Bingo (play at Bingo Halls or by satellite)							
Raffle tickets (fundraising hospitals,							

cancer etc.)							
Sports betting pools or on games of skill							
Lottery tickets such as 6/49, Super 7							
Instant win scratch tickets or Nevadas							
Slot machines in casinos or bars							
Casino games other than slots							
Non-casino games for money with family/friends							
Internet gambling/computer games							
Horse racing							
Other							

If other, please specify_____

32) Do you ever have family arguments over your gambling?

Never Occasionally On a regular basis

If you ever have family arguments about your gambling, please tell us with whom you argue and what message each of you is arguing about:

33) Does your gambling interfere or cause you to stop participating in any other leisure or recreational activities?

Yes No

34) If no, has your gambling allowed you to participate in new activities?

Yes No

35) Do you know anyone with a gambling problem?

Yes No

36) If yes, are they currently receiving some sort of support for this problem?

Yes No

37) Have the gambling activities of any of your family members ever caused a problem for the family?

Yes No

38) If yes, which family members?

Mother Father Uncle Aunt Cousin Spouse

Child(ren) Child(ren)-in-law If other, please specify_____

D: Experiences in the Family you grew up inThis section is about the family that you grew up in. Please use the following scale to indicate how much you agree with each statement.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

	1	2	3	4	5
1. The atmosphere in my family was usually unpleasant.					
2. My parents encouraged family members to listen to each other.					
3. My family taught me that people were basically good.					
4. My parents openly admitted it when they were wrong.					
5. Resolving conflicts in my family was a very stressful experience.					
6. My parents encouraged me to express my views openly.					
7. My attitudes and my feelings frequently were ignored or criticized in my family.					
8. In my family, I felt free to express my own opinions.					

9. The atmosphere in my family was cold and negative.					
10. In my family, I felt I could talk things out and					

	1	2	3	4	5
settle conflicts.					
11. Mealtimes in my home were usually friendly and pleasant.					
12. We usually were able to work out conflicts in my family.					
13. I found it easy in my family to express what I thought and how I felt.					
14. My parents discouraged us from expressing views different from theirs.					
your feelings.					

F: Gambling AttitudesThis section is about general attitudes toward gambling and about specific attitudes toward gambling on horse races, on lotteries, and on casinos. Please use the following scale to indicate how much you agree with each statement. We understand that the following questions may seem repetitive, but we greatly appreciate your time in completing each of them.

Strongly Agree	Moderately Agree	Mildly Agree	Mildly Disagree	Moderately Disagree	Strongly Disagree
1	2	3	4	5	6

	1	2	3	4	5
10. I find it difficult to express my own opinions in my family.					
11. In my family, no one cares about the feelings of other family members.					
12. In my family, certain feelings are not allowed to be expressed.					
13. My family members usually are sensitive to					

14. In my family, people take responsibility for what they do.					
15. My family is warm and supportive.					

	1	2	3	4	5	6
1. I enjoy gambling						
2. I think gambling is good for Canada.						
3. I enjoy buying lottery tickets.						
4. I enjoy betting on horse races.						
5. I support the right of Canadians to gamble in casinos as often as they want.						
6. I detest betting on horse races.						
7. I gamble in casinos when the opportunity arises.						
8. I want to bet on horse races.						
9. I detest gambling casinos.						
10. I want to buy lottery tickets.						

	1	2	3	4	5	6
11. I enjoy gambling in casinos.						
12. I think betting on horse races is good for Canada.						
13. I feel excited when I am around people who bet on horse races.						
14. Gambling in casinos is acceptable.						
15. I gamble when the opportunity arises.						

16. I feel comfortable around people who frequently play the lottery.						
17. I support the right of Canadians to gamble as often as they want.						
18. I am a thrill seeker.						
19. I want to gamble.						
20. Buying lottery tickets is acceptable.						
21. When people talk about betting on horses, I want to bet.						
22. I feel excited when am around people who gamble.						
23. When people talk about buying a lottery ticket, I want to buy one.						
24. When people talk about gambling, I want to gamble.						
25. Betting on horse races is acceptable.						
26. I feel comfortable around people who frequently gamble in casinos.						
27. I bet on horse races when the opportunity arises.						
28. It's OK if there is gambling in my town.						
29. I want to gamble in casinos.						
30. I feel upset when I see advertisements that promote the lottery.						
town.						
32. The lottery is detrimental to our society.						
33. It would be better if casino gambling was banned in my province.						

G: Gambling ConsequencesIn this section we are interested in your perceptions of others' reactions to, and consequences of, your gambling. If you did gamble but no longer do, please

answer the following questions in terms of when you were still gambling.

	1	2	3	4	5	6
34. I buy lottery tickets when the opportunity arises.						
35. I like to take risks.						
there is casino gambling in my town.						
37. Gambling is acceptable.						
38. I detest lotteries.						

39. What do you think of casinos and “racinos” (racetracks with slot machines) in small communities? Please check all that apply.

They help the local economy

They have a negative impact on local businesses

They provide a needed source of recreation

They bring tourists to the area

They encourage crime

They are bad for families

Other, please specify_____

G: Gambling ConsequencesIn this section we are interested in your perceptions of others' reactions to, and consequences of, your gambling. If you did gamble but no longer do, please answer the following questions in terms of when you were still gambling.

	Yes	No
1. Since you started gambling, have you felt more depressed, either after gambling or in general?		
2. Have you ever hidden your gambling activities, for example where you were, how much you won or lost?		
3. Have you ever spent more money than planned when gambling?		

4. When you lose money gambling, do you return to try and win it back?		
which makes you feel more alive?		
6. Have you ever been surprised by the amount of time that has		
7. Has gambling filled a void in your life and helped you to feel less lonely?		
8. Have you borrowed money from friends, family, credit cards, or financial institutions so you can gamble?		
9. Since you started gambling do you find yourself losing interest in social or other activities?		
10. Have your close relationships suffered since you started gambling?		
11. Do you find yourself thinking more and more about gambling and looking for ways to do it?		
12. Since you started gambling, have you had trouble paying household and personal expenses, such as rent, food or bills?		
better?		
14. Have you experienced extreme mood swings since you started gambling?		
15. When you are gambling do you stop thinking about day-to-day problems?		
16. Each time you go gambling do you believe that you could win big?		

Some of the next questions may not apply to those who are currently gambling, but please try to be as accurate as possible. Using the following scale, please indicate the number that best answers each statement.

Never	Sometimes	Most of the time	Almost always
1	2	3	4

	1	2	3	4
17. Thinking				

about the last 12 months, have you bet more than you could really afford to lose?				
18. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?				
19. When you gambled, did you go back another day to try to win back the money you lost?				
20. Have you borrowed money or sold anything to get money to gamble?				
21. Have you felt that you might have a problem with gambling?				
22. Has gambling caused you any health problems, including stress or anxiety?				
23. Have people				

criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?				
24. Has your gambling caused any financial problems for you or your household?				
25. Have you felt guilty about the way you gamble or what happens when you gamble?				

Appendix K

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APPLY NEW | News | Useful Links | Settings |
Create New Event
Event Form Name
Description
Adverse Event Report
Use this form for reporting any injury, adverse event, or detrimental incident experienced by a research participant that is/may be related to your research procedures
Annual (or Final) Report for Approved Human Research Projects
Complete this form to file your annual (or final) report to the REB for each approved application
Request for Ethics Clearance of A Revision or Modification
Use this form to request minor changes to an application that has already received approval from the REB
FileNo: 4080
Project Title: Personality and Entertainment
Submitted Events
Event Category
Event Submission Date
Event Status
Psychology Review Proc
View Event
Psychology Review Process (N/A)
2014/06/10
Completed
1 items in 1 pages
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