

## AGRI Conference Poster Presentations March 2015



1	Investigation of comorbidity between ADHD and problem gambling in a probabilistic reward-learning task	<p><u>Mehdi Abouzari</u>, Scott Oberg, Aaron Gruber, Matthew Tata</p> <p>Canadian Centre for Behavioural Neuroscience (CCBN), University of Lethbridge</p> <p><a href="mailto:Mehdi.abouzari@uleth.ca">Mehdi.abouzari@uleth.ca</a></p>	<p>Problem gambling is substantially comorbid with attention-deficit hyperactivity disorder (ADHD). Elucidation of the underlying link between these two conditions is likely to catalyze novel strategies for treatment and diagnosis of gambling problems. In this study, a simplified computerized version of the Iowa Gambling Task (IGT) was used to assess differences in reinforcement-driven choice adaptation among subjects with pathological gambling and/or ADHD. The task contained two choice options with different net payouts over the session; a 'good bet' that resulted in a win of +50 points on 60% of trials (and -50 points on 40%), and a 'bad bet' that resulted in +100 points on 40% of the trials (and -100 points on 60%). We quantified subjects' preference for the good bet over the session. Both the control subjects (<math>p = 0.01</math>) and medicated ADHD nongamblers (<math>p &lt; 0.001</math>) significantly increased the proportion of good bets over the 400 trials of the session, indicating that they were able to acquire and use knowledge of the reward outcomes to obtain a positive financial outcome. This contrasts previous studies indicating impairment of subjects with ADHD on variants of the IGT task. Subjects with problem gambling performed worse than controls or ADHD nongamblers (both medicated and unmedicated) but better than our limited sample (<math>n=4</math>) of unmedicated ADHD gamblers. The results indicate that ADHD additionally impairs reinforcement-driven choice adaptation in subjects with problem gambling, but that medicated ADHD nongamblers are not different than controls. These data highlight the need for studies of ADHD in gambling and other decision tasks to screen for problem gambling to avoid confounding altered decision processes related to problem gambling with those related to ADHD alone.</p>
2	Canadian Counseling Psychology Graduate Student Knowledge of Women Problem Gamblers	<p><u>Mackenzie Becker</u> Noella Piquette</p> <p>University of Lethbridge</p> <p><a href="mailto:mackenzie.becker@uleth.ca">mackenzie.becker@uleth.ca</a></p>	<p>The prevalence rates for pathological gambling in North America are as high as 5%-10%. Risk factors may predispose individuals to become problem gamblers (PGs). For instance, gender can influence how one experiences gambling disorders (e.g., men and women present with different motivations for gambling). Women problem gamblers (WPGs) also differ in the severity and comorbidities associated with gambling, compared to their male counterparts. Most of the research conducted on gambling, thus far, has been focused on male gamblers. This has led to a dearth of information related to the unique experience of WPGs, effective treatments for this group, and a deficiency of knowledge among current and future practitioners in regards to WPGs. In order to provide maximally effective treatments to WPGs, gaps in foundational knowledge should be addressed. This study's aim is to ascertain the levels of knowledge surrounding PGs, specifically gender differences that graduate students in counseling programs hold. A cross-sectional survey will address students' knowledge of: (1) problematic gambling (using substance abuse as a comparison), (2) gender differences, (3) self-reported competence in working with PGs, and (4) willingness to learn more about (W)PGs.</p>
3	An exploratory study of the stopping device in modern multi-line slot machine	<p><u>Chu, S. W.</u>, Murch, W.S., Clark, L.</p> <p>Centre for Gambling Research at UBC</p> <p><a href="mailto:swmchu@psych.ubc.ca">swmchu@psych.ubc.ca</a></p>	<p>Past research has identified illusion of control features as one of several structural characteristics that underlie the addictive potential of gambling forms. The stop button is a common feature on modern slot machines that enables players to stop the reel spin manually but has no impact on the (predetermined) machine outcomes. Stop button pressing could foster illusion of control, an erroneous belief that one can improve their chance of winning through skills, as the action of reel stopping encourages a false sense of outcome manipulation. The connection between reel stopping and illusion of control was supported by Sevigny and Ladoceur (2005). The current study attempted to extend their findings with a real (instead of pre-programmed) slot machine. We explored the relationship between stop button usage and (1) gambling-related individual differences, (2) speed of game play, and (3) physiological excitement. We hypothesized that stop button usage is predicted by higher levels of slots experience, faster speed of play, and higher levels of physiological reactivity during play. Further, we predicted that these relationships would be mediated by players' levels of gambling misbeliefs. The data</p>

			collection for this study is ongoing and will be presented during the poster session.
4	A Critical Examination of the Theoretical Conceptualizations of Problem Gambling, Treatment, and Recovery	<p><u>Anna Dawczyk</u></p> <p>University of Guelph</p> <p><a href="mailto:adawczyk@uoguelph.ca">adawczyk@uoguelph.ca</a></p>	<p>Problem gambling treatment has not been adequately theorized in the literature as demonstrated by the lack of definitional consensus and conceptual clarity for etiology, and abstinence-based and controlled gambling treatment objectives, outcomes, and recovery. Instead of developing and using gambling specific theories, current research is guided by frameworks that have been adopted from other areas of inquiry such as alcoholism and drug addiction. The purpose of this work is to critically examine the theoretical conceptualizations that underlie abstinence-based and controlled gambling treatment and recovery. Despite the lack of a widely accepted explanation or theoretical model accounting for the etiology of disordered gambling (Rickwood et al., 2010), the way problem gambling is conceptualized has important implications for diagnosis and treatment (Shaffer &amp; Martin, 2011). Although research on recovery is beginning to expand in the field of problem gambling, empirical research and theoretical conceptualizations are limited. The lack of a definitional consensus has resulted in various definitions of recovery in the literature. Conceptualizations of recovery has implications for research and practice because the way recovery is defined shapes the development, delivery, and evaluation of addiction treatment. Advancing theory would have a profound impact on research and treatment of problem gambling.</p>
5	The Influence of Impulsiveness on Gambling Problems: A Prospective Study of Gender Differences in Canadian Adults	<p><u>Sarah M. Farstad</u></p> <p>Kristin M. von Ranson</p> <p>David C. Hodgins</p> <p>University of Calgary</p> <p><a href="mailto:sfarstad@ucalgary.ca">sfarstad@ucalgary.ca</a></p>	<p>The aim of this study was to examine gender differences in longitudinal personality predictors of gambling problems in a large population-based sample of adults. Participants included 596 women and 406 men from four age cohorts (18-65 years old) randomly recruited from Alberta. Participants completed self-report measures of three facets of impulsiveness (negative urgency, sensation seeking, lack of persistence) and gambling problems. Age and impulsiveness were assessed at baseline and problem gambling was assessed at three-year follow-up. Survey weights taking into account age, sex, and geographical location were applied to ensure the results more accurately reflected the entire population of Alberta adults. Weighted data were analyzed using zero-inflated Poisson regression models. Gender differences emerged in predicting gambling problems and severity. When predicting the presence of future gambling problems, negative urgency was a significant predictor in women, whereas sensation seeking was a significant predictor in men. Among those who endorsed problem gambling symptoms, older age predicted increased severity in women and negative urgency predicted increased severity in men. The findings from this study suggest that the specific impulsiveness traits that are targeted in treatment may need to vary depending upon the gender of the client.</p>
6	Multiline slots: Can losing money increase gambling desire and prolong game-play?	<p><u>Candice Graydon</u></p> <p>Mike Dixon</p> <p>Kevin Harrigan</p> <p>Jonathan Fugelsand</p> <p>Madison Stange</p> <p>University of Waterloo</p> <p><a href="mailto:Candice.graydon@uwaterloo.ca">Candice.graydon@uwaterloo.ca</a></p>	<p>Slot machines have dramatically increased in availability in many nations throughout the world, with multiline games continually growing in popularity. A concern for problem gambling is that many "small" wins in multiline games are actually net losses (e.g., bet a dollar, win back a quarter); yet, are still accompanied by potentially reinforcing celebratory sights and sounds. We previously found that players somatically and psychologically miscategorize these "losses disguised as wins" (LDWs) as wins. Here, we assessed whether LDWs would influence players' desire to gamble and prolong voluntary game-play during a losing streak. Slots players from the local community were given 20 dollars to play 100 spins on a simulated slot machine game (patterned after a commercially available slot machine). Participants played a few (6%), moderate (14%), or a many (30%) LDW game. (Numbers of actual wins and payback percentages were identical across games). Participants who experienced a moderate number of LDWs reported a significantly higher desire to gamble and gambled for longer during the losing streak than participants playing the few or many LDW games. Thus, LDWs can indeed influence one's desire to gamble and encourage prolonged slot machine play, but it depends on the game's reinforcement rate.</p>
7	Gender Differences in Treatment Attendance Among Gambling Help-line Callers: A Prospective Study of Gambling and Psychosocial Outcomes	<p><u>Hyoun S (Andrew). Kim,<sup>1</sup></u></p> <p>Brooke Russell<sup>1</sup></p> <p>Jessica Hannah<sup>1</sup></p> <p>David C. Hodgins<sup>1</sup></p> <p>Maria Bellringer<sup>2</sup></p> <p>Max Abbott<sup>2</sup></p>	<p>Despite the increasing number of empirical research on gambling help-lines (e.g., characteristics, effectiveness), less is known about gender differences among help-line callers. Specifically, there is a dearth of studies assessing whether gender is a predictor of treatment attendance following help-line contact. More importantly, no study to date has examined whether gender and treatment affect gambling (e.g., days gambled) and psychosocial (e.g., mental health) outcomes following contact. The present research addresses this gap in the literature via secondary analysis of larger study of callers to a national problem gambling help-</p>

		<p>1. University of Calgary 2. Auckland University of Technology</p> <p><a href="mailto:hyoun.kim@ucalgary.ca">hyoun.kim@ucalgary.ca</a></p>	<p>line (<math>N = 150</math>). The present research had two aims; (i) assess whether gender predicts treatment attendance following contact and (ii) assess whether gender and treatment attendance affects outcomes at 3, 6 and 12-month follow-ups. The results revealed that while male callers were more likely to access professional treatment following contact, there were no gender or treatment effects on gambling and psychosocial outcomes. The implications for gambling support-lines as a potential treatment option for men and women are discussed.</p>
8	<p>Motivation in Natural Recovery from Problem Gambling: Associations between Self-Determination Theory and the Transtheoretical Model of Change</p>	<p><a href="mailto:vlad.kushnir@camh.ca">Vladyslav Kushnir</a>.<sup>a</sup> Alexandra Godinho.<sup>a</sup> David C. Hodgins.<sup>b</sup> Christian S. Hendershot.<sup>c,d</sup> John A. Cunningham.<sup>a,e</sup></p> <p><sup>a</sup> Department of Social and Epidemiological Research, CAMH <sup>b</sup> Department of Psychology, University of Calgary <sup>c</sup> Campbell Family Mental Health Research Institute, CAMH <sup>d</sup> Department of Psychiatry, University of Toronto <sup>e</sup> National Institute for Mental Health Research, Australian National University</p> <p><a href="mailto:vlad.kushnir@camh.ca">vlad.kushnir@camh.ca</a></p>	<p><b>Introduction:</b> Because the majority of people who remit from problem gambling do so without attending treatment, a comprehensive understanding of motivational factors associated with natural recovery from problem gambling is necessary. The aim of this study was to examine the relationship between reasons for change according to self-determination theory (SDT) and the transtheoretical model (TTM) of change among a sample of problem gamblers motivated to quit without formal treatment.</p> <p><b>Methods:</b> As part of a larger study, baseline motivations for change were examined for 207 adult problem gamblers with intent to quit in the next 6 months (contemplation stage) or 1 month (preparation stage).</p> <p><b>Results:</b> Controlling for demographic factors and gambling severity, hierarchical logistic regression analyses revealed that higher autonomous motivation for quitting gambling predicted greater likelihood of being in the preparation stage (<math>OR = 1.57, 95\%CI = 1.09-2.24</math>), whereas those with higher external motivation for change were less likely to be farther along the stage of change continuum (<math>OR = 0.76, 95\%CI = 0.59-0.96</math>).</p> <p><b>Conclusions:</b> The findings provide direct evidence of the association between SDT and TTM within an addictive behavior, in that autonomous motivations play an important role in determining readiness for quitting gambling without formal treatment.</p>
9	<p>The role of gambling fallacies in the development of problem gambling</p>	<p><a href="mailto:carrie.leonard@uleth.ca">Carrie A. Leonard</a> Robert J. Williams</p> <p>University of Lethbridge</p> <p><a href="mailto:carrie.leonard@uleth.ca">carrie.leonard@uleth.ca</a></p>	<p>The cognitive model of problem gambling (PG) asserts that Gambling fallacy (GF) susceptibility is key in the development of PG. The current study evaluated the relationship between PG and susceptibility to gambling related cognitive errors via secondary analysis of the Quinte Longitudinal Dataset (QLS) (a five year prospective study, <math>n = 4121</math>, 92% retention rate). Susceptibility to GF was consistently and significantly related to severity of PG however, the magnitude of the relationship was consistently weak. This indicates that some non-problem gamblers are highly susceptible to erroneous gambling related cognitions and some problem gamblers are susceptible to few gambling related fallacies. A generalized estimated equation model was used to evaluate the differential impact of each of the seven types of gambling related cognitive errors evaluated: misunderstanding independence of random events, belief in personal luck, superstitious belief(s), misunderstanding statistical probabilities, ignoring/misunderstanding the law of large numbers, and stereotyped ideas of randomness. The GEE analysis revealed that few of the fallacy types significantly contribute to problem gambling and that the contribution of these few fallacies across time is weak. While susceptibility to gambling fallacies does contribute to problematic gambling behaviours, GF susceptibility is not key in the development of gambling problems.</p>
10	<p>The Role of Work, Community, and Social Support on Problem Gambling Outcomes among Aboriginal Adults</p>	<p><a href="mailto:erin.mason@uleth.ca">Erin Mason</a> Cheryl Currie</p> <p>Faculty of Health Sciences, University of Lethbridge</p>	<p><b>Background:</b> Inequitable experiences of stress appear to be a factor associated with problem gambling behaviour among Aboriginal populations. However, our understanding of the socio-ecological contexts that contribute to experiencing stress and their influence on problem gambling among Aboriginal Canadians is limited. The objective of the present study is to examine the role of occupational functioning and neighborhood cohesion in the development of problem gambling among Aboriginal adults using longitudinal data.</p>

		<a href="mailto:erin.mason@uleth.ca">erin.mason@uleth.ca</a>	<p><b>Methods &amp; Results:</b> The Quinte Longitudinal Study (QLS) collected data from 4,121 adults residing in southeastern Ontario for a period of 5 years (2006 to 2011). This study examines data collected from Aboriginal adults who were employed during this time frame (N = 152). Problem gambling was measured using the PPGM. Data were analyzed using generalized estimating equations (GEE). Meditational modeling was used to examine the role of social support and PTSD in these associations using the cross products of coefficients method. Data is currently being analyzed and will be presented to the public for the first time at this event.</p> <p><b>Outcomes:</b> This study will present the first longitudinal data on socio-ecological factors that may influence the development of problem gambling over time among Aboriginal Canadians.</p>
11	Physiological Arousal and Behavioural Measures of Immersion during Slot Machine Gambling	<p><u>Murch, W.S</u>  <u>Chu, S.W.</u>  <u>Clark, L.</u></p> <p>Centre for Gambling Research at UBC</p> <p><a href="mailto:spencer@psych.ubc.ca">spencer@psych.ubc.ca</a></p>	<p>This study, currently underway, addresses arousal and immersion during electronic gambling machine (EGM) play. Immersion, related to flow, dissociation and 'the machine zone,' can be psychologically construed as the extent to which one's attentional resources are focused exclusively on the EGM. It has been thought for several decades that the appeal of gambling comes from excitement. Machine gambling has been related to constrained visual attention during play and a propensity toward dissociation (Diskin &amp; Hodgins, 1999). It has recently been argued that machine gamblers are not seeking arousal, but rather these experiences of escape and attenuated awareness (Dow Schüll, 2012). Anecdotal reports have described EGM gamblers being so deep in play that they fail to notice emergencies happening nearby. The present work is using novice gamblers in a hybrid casino lab design (commercial slot machines housed in a controlled laboratory environment) to quantify immersion during EGM play and characterize its relationship with physiological arousal. We are developing a behavioural index of immersion to be used alongside established self-report measures. These tools are being used in tandem with event-related heart rate and skin conductance measures to test the hypothesis that immersion has behavioural consequences that relate meaningfully to physiological arousal responses.</p>
12	A Comparative Evaluation of Prospect Theory	<p><u>Jeffrey M. Pisklak</u><sup>1</sup>  <u>Christopher Madan</u><sup>2</sup>  <u>Marcia Spetch</u><sup>1</sup></p> <p>1. University of Alberta  2. Boston College</p> <p><a href="mailto:pisklak@ualberta.ca">pisklak@ualberta.ca</a></p>	<p>Prospect Theory predicts greater risk aversion for gains than losses which seems counter to some people's tendency to gamble. Recent research has suggested that both animals and people may respond contrary to Prospect Theory when outcomes are learned from experience, as in many gambling situations. Convergence between species is important for developing animal models of gambling, but is difficult to assess because the consumable rewards typically used in animal studies prevents giving losses. Furthermore, it is not clear if consumable rewards are functionally equivalent to the non-consumable rewards (points and money) often used in human studies. We therefore conducted a comparative study with pigeons and humans using a token-economy in which choices produced fixed or probabilistic gains and losses of tokens that were exchanged at varied intervals for other forms of reward; food for pigeons and either television clips (consumable) or points (non-consumable) for humans (manipulated between-subjects). Prospect Theory predicts greater risk aversion for gains than losses, but it does not consider reward type as a potentially relevant factor in risky choices. Testing for this difference in reward type allows us to comparatively evaluate how choice factors influence risk preference.</p>
13	The Effect of Labels on Public Stigma towards Gambling Disorder	<p><u>Jennifer Prentice</u>  <u>Leanne Quigley</u>  <u>Keith S. Dobson</u></p> <p>Psychology Department,  University of Calgary</p> <p><a href="mailto:jprenti@ucalgary.ca">jprenti@ucalgary.ca</a></p>	<p>Stigma has been identified as a major barrier to treatment seeking among individuals with gambling problems (Suurvali, Cordingley, Hodgins, &amp; Cunningham, 2009). Labelling is thought to be implicated in the process of stigma, and past research has demonstrated that different labels for mental disorders can influence how these disorders are perceived and evaluated by people (Szeto, Luong, &amp; Dobson, 2013). However, no study to date has examined whether different labels for gambling problems influence stigmatizing attitudes. The present study is a comparison of four different gambling labels (i.e., problem gambling, pathological gambling, gambling disorder, gambling addiction) on various dimensions of stigma, including causal attributions, stereotypes, general perceptions, desired social distance, discrimination, perceived stigma, and prognosis and treatment beliefs. The gambling labels will also be compared to three health condition controls (i.e., alcohol use disorder, asthma, and obsessive compulsive disorder) to evaluate the extent to which gambling problems are stigmatized relative to other conditions. The project is ongoing; this poster will describe the study design and present preliminary findings from the study.</p>

14	Validation of the Gambling Motives Questionnaire Financial (GMQ-F) with Open-Ended Reasons for Gambling	<p><u>Christina L. Rash</u><sup>1</sup> Daniel S. McGrath<sup>1</sup> Benjamin J.I. Schellenberg<sup>2</sup> Kristianne Dechant<sup>2</sup></p> <p>1. Department of Psychology, University of Calgary 2. Liquor and Gaming Authority of Manitoba</p> <p><a href="mailto:clrash@ucalgary.ca">clrash@ucalgary.ca</a></p>	<p>Over the past decade, a number of multidimensional motivational models have been proposed to explain why people gamble. One that has received substantial research focus is the three-factor model measured by the Gambling Motives Questionnaire (GMQ; Stewart &amp; Zack, 2008). Specifically, the GMQ identifies coping, social, and enhancement motives as primary reasons for gambling. Although the GMQ has strong predictive utility, it has been criticized for failing to account for other gambling motives such as financial reasons. The Gambling Motives Questionnaire Financial (GMQ-F; Dechant, 2014) is a recently introduced extension of the GMQ and includes items measuring monetary reasons for gambling. While initial factor analyses support its four-factor solution, the GMQ-F awaits additional psychometric validation. The goal of the current study was to further validate this measure by directly comparing the categories generated by the GMQ-F with unconstrained open-ended reasons for gambling in a population-based sample of gamblers. The degree of concordance between these two methods of categorization as well as the overall comprehensiveness of the GMQ-F motives structure is assessed. Implications of these findings for future gambling motives research are discussed.</p>
15	The genetics of gambling: where have we got to and where are we going?	<p><u>David Rossolatos</u><sup>1</sup>, Katherine J Aitchison<sup>1,2</sup></p> <p><sup>1</sup>Department of Psychiatry, University of Alberta, <sup>2</sup>Department of Medical Genetics, University of Alberta,</p> <p><a href="mailto:kaitchis@ualberta.ca">kaitchis@ualberta.ca</a></p>	<p>Approximately 50% (range 43-60%) of the variance in gambling behaviours (e.g., buying a lottery ticket, time or funds spent gambling, etc.) is attributable to genetic factors (Eisen <i>et al.</i>, 1998; Lobo and Kennedy 2009; Slutske <i>et al.</i>, 2009). The first genome-wide association study (GWAS) of disordered gambling was recently conducted on 1312 twins from 894 Australian families (Lobo <i>et al.</i>, 2014). Although no single genetic marker reached genome-wide significance, this may be owing to the moderate heritability of the trait, more than 2 million markers being used, and phenotypic variation. Suggestive evidence of association included the <i>VLDLR</i> (encoding the very low density lipoprotein receptor), confirmed in secondary case-control analyses as being associated with pathological gambling. The <i>VLDLR</i> is a receptor for reelin, and the reelin-VLDLR/ApoER2 signaling pathway controls cortical neuronal migration in early development and modulates synaptic plasticity, memory and learning in the adult brain (Herz and Chen, 2006). This signaling pathway has also been implicated in a variety of mental illnesses, including depression, bipolar disorder, and schizophrenia (Barr <i>et al.</i>, 2007; Suzuki <i>et al.</i>, 2008). Further genetic research in gambling is warranted, paying attention to the particular gambling phenotypes being measured and comorbidity.</p>
16	Nostalgic Revere for the Pre-Addicted Self Motivates Behavioural Change Among Disordered Gamblers	<p><u>Melissa Salmon</u>, Michael J. A. Wohl, Andrew (Hyouon) Kim, Diane Santesso</p> <p>Carleton University</p> <p><a href="mailto:melissasalmon@cmail.carleton.ca">melissasalmon@cmail.carleton.ca</a></p>	<p>Readiness to change among disordered gamblers is astonishingly low. Indeed, only 7% take the necessary steps to remove disordered gambling from their repertoire (Bellringer, Pulford, Abbott, DeSouza, &amp; Clarke, 2008) and less than 1% seek professional treatment (Wiebe &amp; Turner, 2001). In this poster, we present the results of a longitudinal study that tested the predictive utility of factors that might be a barrier to change (e.g., shame). Importantly, we also tested a novel factor that might facilitate behavioural change – nostalgia (i.e., sentimental longing) for the life lived before disordered gambling took hold. To this end, 223 disordered gamblers completed a survey that assessed, among other things, shame and guilt for gambling, motivations for gambling, nostalgic revere for the pre-addicted self, and readiness to change. Six months later, participants completed a short questionnaire that assessed whether change was attempted (self-help and/or professional care). As predicated, nostalgia uniquely predicted readiness to change (Time 1) and engagement in behavioural change six months later (Time 2). Moreover, nostalgia accounted for all the variance in change at both Time 1 and Time 2. The use of nostalgia as a motivator for both self-directed and professional-directed change among disordered gamblers is discussed.</p>

17	Evaluating the GMQ-F: Factor structure, measurement invariance, and relationships with gambling behaviour.	<u>Benjamin J. I. Schellenberg</u> <sup>1</sup> ; Daniel S. McGrath <sup>2</sup> ; Kristianne Dechant <sup>1</sup> <sup>1</sup> Liquor and Gaming Authority of Manitoba, <sup>2</sup> University of Calgary <a href="mailto:bschellenberg@LGAmanitoba.ca">bschellenberg@LGAmanitoba.ca</a>	Recently, items assessing financial motives were integrated with the Gambling Motives Questionnaire (GMQ; Stewart & Zack, 2008), resulting in a revised measure that assesses social, coping, enhancement and financial motives for gambling (GMQ-F; Dechant, 2014). The aim of this research was to test the proposed four-factor structure of the GMQ-F, determine if GMQ-F responses were invariant across sex, and test a structural model that specified links between motives, gambling frequency and problem gambling. Telephone surveys were conducted with 932 adult gamblers from across Manitoba, Canada, who responded to items from the GMQ-F, reported their frequency of gambling, and completed the Problem Gambling Severity Index (Ferris & Wynne, 2001). Confirmatory factor analysis yielded strong support for the four-factor structure of GMQ-F scores, and invariance testing provided evidence that the GMQ-F produces scores that are invariant across sex. Finally, support was found for the hypothesized structural model in which each gambling motive predicted gambling frequency, which in turn predicted problem gambling severity. These results provide strong evidence in support of the validity of GMQ-F responses, offer further support for the integration of financial motives with the GMQ, and delineate relationships between gambling motives, gambling frequency and gambling-related harm.
18	Gambling Problems and Help-Seeking among Poker Players: A Qualitative Analysis of Focus Groups	Will Shead <sup>1</sup> Nicholas Borodenko <sup>2</sup> Timothy Melnyk <sup>3</sup> 1. Mount Saint Vincent University 2. Prairie Research Associates 3. University of Nevada <a href="mailto:Will.shead@msvu.ca">Will.shead@msvu.ca</a>	Poker players are a distinct subgroup of gamblers with unique norms, jargon, thoughts, feelings, and behaviours. Six 90-minute focus groups were held with 10-12 regular poker players in three urban centres (Winnipeg, Las Vegas, Halifax) to explore poker-specific gambling problems and recovery. Discussion focused on why participants play poker, how poker players experience and define gambling problems, and issues related to help-seeking and treatment accessibility for poker-related problems. A qualitative thematic analysis identified several major themes among the conversational data: 1) poker players prefer poker for its cognitive complexity, competition, and potential for long-term profitability, 2) poker-specific gambling problems are often related to non-monetary outcomes (e.g., spending too much time playing), 3) poker-specific explanations for continued play in the face of mounting losses include lack of insight into one's own skill level and strength of competition, unrealistic expectations about long-term outcomes, and self-serving cognitive biases of attributing wins to skill and losses to bad luck, and 4) poker players are largely unaware of treatment options specific to poker players and often engage in self-directed measures when poker involvement becomes problematic (e.g., taking a weeklong "timeout"). These data highlight the unique experiences of poker players have may help inform prevention and treatment approaches for this subgroup of gamblers.
19	Investigating players' responses to losses, wins, and near-miss outcomes in scratch cards	<u>Madison Stange</u> Candice Graydon Mike Dixon University of Waterloo <a href="mailto:mstange@uwaterloo.ca">mstange@uwaterloo.ca</a>	Although traditionally categorized as a lottery product, scratch cards share features in common with slot machines. Specifically, near-miss outcomes (i.e. uncovering two out of the three required "grand prize" symbols) occur frequently in these games. Despite their popularity, accessibility, and similarities to slots, little is known about how scratch cards affect players. This study sought to understand players' physiological and subjective experiences during scratch card play, with a focus on near-miss outcomes. Undergraduate students from the University of Waterloo each played two custom scratch card games and experienced three types of outcomes (losses, wins and near-misses). We recorded skin conductance levels (SCLs), post-reinforcement pauses (PRPs), and subjective ratings of arousal, valence, and frustration for each outcome type. Participants' SCLs showed greater increases in arousal leading up to near-miss outcomes than either losses or wins. Participants also interpreted near-misses as negative, highly arousing, frustrating losses, and behaviourally, showed shorter PRPs following these outcomes than following winning outcomes. To our knowledge, this study is the first to investigate the structural characteristics of scratch cards and the physiological and psychological experiences they evoke in the player. These results should provide a foundation for the frustration account of near-misses in scratch card games.
20	Assessing Transitions in Problem Gambling in a Longitudinal Study: A Qualitative Approach: Preliminary Findings.	<u>Rodney Steadman</u> Kristy R. Kowatch Laura Gongora Benjamin Kim Troy Swanson	There has been limited research examining specific reasons for transitions in gambling behavior, over time, in the same individuals. The present study set out to examine participant perspectives on changes in gambling behaviour over a two year period. Eleven young adults (mean age 22 years with 45% female) and 30 adults (mean age 50 years with 53% female) were selected from waves 4 and 5 of a seven-year longitudinal study in the province of Alberta (the Leisure, Lifestyle, and Lifecycle Project). Reliable change indexes were calculated

		<p>David C. Hodgins</p> <p>University of Calgary</p> <p><a href="mailto:rsteadma@ucalgary.ca">rsteadma@ucalgary.ca</a></p>	<p>for the Problem Gambling Severity Index (PGSI) (<math>\geq \pm 3</math> for adults), and Fisher DSM-IV-J-MR (<math>\geq \pm 2</math> for participants who were adolescents at wave 4 and young adults at wave 5). Interviews were conducted by phone and consisted of questions exploring gambling behaviour and changes in gambling behaviour. Interviews were analyzed and coded with NVivo software. Phenomenology and grounded theory informed the analysis, culminating in the emergence of themes and theories depicting an understanding of participants' lived experiences. Data analysis is ongoing and preliminary findings will be presented.</p>
21	<p>Language Content as a Predictor of Outcome in an Internet-based Motivational Intervention for Disordered Gamblers</p>	<p><a href="#">Jennifer L. Swan</a></p> <p>David C. Hodgins Holliston J. Logan Lewis A. Horwood Mark L. Canuel</p> <p>University of Calgary</p> <p><a href="mailto:jswan@ucalgary.ca">jswan@ucalgary.ca</a></p>	<p>The present study aims to build on research examining the processes by which motivational interviewing (MI) is an effective treatment for disordered gambling. This is being done by examining the relationship between language content (i.e., change vs. sustain talk) and outcome in a motivational intervention for disordered gambling delivered in an Internet-based format. The online motivational intervention is a text-based, self-directed program including numerous pre-programmed responses and open-ended items. Data for the current presentation are being drawn from an ongoing randomized trial comparing a group completing the online motivational intervention to a group completing a control intervention. As such, analyses for the current presentation will focus on outcomes from a preliminary subset of the first group. Fifteen Internet-based MIs with disordered gamblers (mean age = 42.40, 47% female) are being transcribed and coded for both language content and strength. Outcome data (days and dollars gambled) are being collected at 1, 3, 6, and 12 months post-intervention. Data analysis is ongoing and preliminary findings will be presented</p>
22	<p>Knowledge Translation and Exchange in Gambling: A Researchers Guide</p>	<p><a href="#">Travis Sztainert</a></p> <p>Hyoun (Andrew) Kim Michael Wohl Melissa Salmon</p> <p>Carleton University</p> <p><a href="mailto:tsztaine@connect.carleton.ca">tsztaine@connect.carleton.ca</a></p>	<p>In recent years, Knowledge Translation (KT) – the process of taking knowledge and turning it into action – has planted itself squarely in the middle of the gambling field. Despite the recent interest, most gambling researchers have only a vague understanding of KT and the role it can play in advancing responsible gambling. The purpose of this poster is to provide gambling researchers with the information and steps necessary to conduct KT. Specifically, this poster will provide information to help gambling researchers navigate through the KT process, and will focus on the implementation of responsible gambling based KT initiatives. Coverage will include best-practices to (a) identify KT stakeholders and end-users, (b) engage the KT process to uncover issues that need consideration (c) choose appropriate KT strategies, (d) develop KT products, and (e) evaluate the KT initiative. It is hoped that this poster will facilitate KT innovation among gambling researchers and by doing so, help advance responsible gambling to relevant end-users.</p>
23	<p>The influence of acute alcohol intoxication on Gambler's Fallacy</p>	<p><a href="#">J. Tobias-Webb</a><sup>1, 2</sup>, <a href="#">E. Limbrick-Oldfield</a><sup>2</sup> <a href="#">L. Clark</a><sup>1</sup></p> <p><sup>1</sup>Centre for Gambling Research at UBC, <sup>2</sup>Department of Psychology, University of Cambridge</p> <p><a href="mailto:jit40@cam.ac.uk">jit40@cam.ac.uk</a></p>	<p>BACKGROUND: Alcohol use is widely associated with maladaptive gambling behaviours (Stewart &amp; Ellery 2014 <i>Psychology of Addictive Behaviors</i>). The present study sought to investigate alcohol's influence on gambling-related cognitive distortions, focusing on Gambler's Fallacy: the belief that runs of one outcome (i.e. black) must be followed by a different outcome (i.e. red) in games of chance. METHODS: Male university students (19-27 years) were randomly assigned to a placebo (n=18) or alcohol (n=18) condition. Participants in the alcohol condition consumed 0.08g/kg of alcohol in the form of vodka and flavoured tonic. Participants performed a simulated roulette task to quantify Gambler's Fallacy (see Studer et al 2014 <i>Journal of Behavioral Decision Making</i>). Using logistic regression, red/black choices (choice same as last outcome) were modeled as a function of prior outcome run length (short/long), prior feedback (win/loss), feedback streak length (short/long), and group (alcohol/placebo). RESULTS: Gambler's Fallacy was observed, colour choice (i.e. red) decreased after longer runs of that colour (Odds ratio; 0.41; <math>p &lt; .001</math>). Alcohol group did not interact with outcome run length (<math>p &gt; .05</math>), however, a significant group x feedback interaction (Odds ratio: 0.42; <math>p &lt; .001</math>) was observed. In the placebo condition, participants followed a win-stay, lose-shift strategy that was attenuated under alcohol. A significant group x feedback x streak length interaction (Odds ratio: 1.57; <math>p = .049</math>) also revealed alcohol enhanced shifting behaviour after longer losing streaks. CONCLUSIONS: Alcohol's influence on gambling choice behaviour as a function of previous decision feedback is broadly consistent with the alcohol myopia model (Steele &amp; Josephs, 1990 <i>American Psychologist</i>).</p>
24	<p>Reach dynamics during risky and ambiguous decision</p>	<p><a href="#">Nathan J. Wispinski</a><sup>1,2</sup>, <a href="#">Christopher R. Madan</a><sup>3,4</sup> <a href="#">Craig S. Chapman</a><sup>2</sup></p>	<p>Gambling involves deciding between options that can have several potential outcomes (risk), when information about the likelihood of these outcomes is sometimes uncertain (ambiguity). In this experiment, we investigated biases in making these decisions while recording several behavioural measures. Participants chose between</p>

	making reveal gambling-related cognition	<sup>1</sup> Department of Psychology, University of British Columbia <sup>2</sup> Faculty of Physical Education and Recreation, University of Alberta <sup>3</sup> Department of Psychology, University of Alberta <sup>4</sup> Department of Psychology, Boston College <a href="mailto:nathanjwispinski@gmail.com">nathanjwispinski@gmail.com</a>	<p>shapes on a touchscreen that paid points with differing probabilities (25%, 50%, and 75%) that were either stated or learned. Both explicit (choices, gambling personality questionnaires, and probability estimates) and implicit (reaction times and reach trajectories) measures were recorded, and each revealed distinct results: probability estimates were relatively accurate; initial choices were biased by novelty-seeking and later choices by ambiguity aversion; and reaction times and movements were primarily driven by reward and expected value, respectively. Importantly, individual differences in choices and reaching movements were correlated with gambling-related personality scores. This critical finding suggests that a careful analysis of people's choices <i>and</i> how they move to make them can be diagnostic of gambling-related tendencies. Our research makes two key points: (1) only through the integration of multiple methods can we construct a complete view of gambling behaviour, and (2) using this comprehensive suite of methods we may be able to predict gambling traits from simple choice tasks.</p>
25	Effectiveness of a voluntary casino self-exclusion online self-management program	<p><a href="#">Igor Yakovenko</a>  David C. Hodgins</p> <p>University of Calgary</p> <p><a href="mailto:iyakoven@ucalgary.ca">iyakoven@ucalgary.ca</a></p>	<p>Providing information and support through individual voluntary self-exclusion (VSE) programs offers an entry point into the treatment system for individuals who are reluctant or uncomfortable with taking that step. The presented study is an investigation of the effectiveness of a voluntary casino self-exclusion online self-management program compared to an existing in-person workshop-style program in Alberta, Canada. The new online program was designed to facilitate access to the required VSE support, include motivational and self-management tools, and encourage ongoing assessment and evaluation. 180 VSE enrollers were randomly assigned to either the existing face-to-face VSE program or the new online alternative. Participants were followed up for 12 months with assessments at 3, 6, and 12 months to compare the groups using problem gambling levels, treatment-seeking and engagement, program satisfaction, and completion rates as outcomes. Initial results showed that most individuals enrolling in VSE tended to gamble often and spend a lot of money. For a large proportion of enrollers, this was their first attempt at getting any help for gambling problems. The online workshop engaged a lot of enrollers and was well liked, but had high attrition between beginning and end evaluation portions. Comprehensive group comparison results and feedback from program completers will be presented. Results will be discussed in the context of VSE policy implications.</p>