

AGRI Conference Poster Presentations

Friday, April 7, 2017

3:30 – 5:30 pm, Max Bell Building

Posters will be available for viewing until April 8, 2:50 pm



Listed by presenter (in bold)

1	Exploring the Effects of a State Monopoly Operator on Québec’s Online Gambling Market	<p>Nicole Arsenault ¹ Sylvia Kairouz ¹ Ingo Fiedler ² Eva Monson ¹</p> <p>¹Concordia University, Research Chair on the Study of Gambling ²University of Hamburg</p> <p>nicole.lauren.arsenault@ gmail.com</p>	<p>Recent expansions in legal offerings to include online gambling across Canada have been undertaken among animated debate regarding the potential impacts of this legalization. Changes in online gambling participation and gambling patterns before and after the opening of Espacejeux, the state-operated gambling website in Québec, Canada are examined.</p> <p>Information on gambling participation and patterns was drawn from two repeated cross- sectional surveys conducted with samples representative of Québec’s general adult population in 2009 (N=11,888) and 2012 (N=12,008). Behavioural data were retrieved from the Online Poker Database of the University of Hamburg (ODP-UHH) for 4,591,298 (2009/2010) and 2,909,562 (2013) unique real money poker identities. The prevalence of Internet gambling remained stable with only 1.5% of the population gambling online in 2012 compared to 1.4% in 2009. In 2012, 82.5% of players continued to gamble on unregulated sites and data from OPD-UHH revealed that 90% of all real money online poker players still bet on unregulated sites in 2013. Gambling patterns are discussed.</p> <p>The combination of both survey and behavioural data clearly show that the introduction of a legal offering by the state monopoly into Québec’s online gambling landscape was not associated with significant change in gambling participation or patterns.</p>
2	Biasing Visual Perception Decisions with Frequency of Flashing Lights	<p>Jennifer Bertrand ¹ N.J. Wispinski ² A. Singhal ² K. E. Mathewson ² C.S. Chapman ¹</p> <p>¹Faculty of Physical Education and Recreation, University of Alberta ²Department of Psychology, University of Alberta</p> <p>jbertran@ualberta.ca</p>	<p>Walking into a casino it is difficult to ignore the stimulus overload, from the sound of a spinning roulette wheel, to the smell of restaurant food, to the flashing lights from rows of slot machines. As a visually dominant species, visual stimuli are particularly salient. What happens if our visual perception is biased, leading us to perceive some visual items incorrectly? How might these perceptions impact gambling behaviour?</p> <p>Over a hundred years ago Brucke (1867) showed that flickering a light at specific frequencies has a significant impact on how bright it is perceived. Here, we replicated this study, and extended it to judgements between two flickering stimuli. We attempted to link this visual perception bias to oscillatory networks in the brain by recording the electrical activity of the brain using electroencephalography (EEG). In two experiments we replicate the behavioural effect of the frequency of flicker biasing brightness perception. Ongoing EEG analysis is focusing on a way to link biased perceptual behaviour to the recorded brain oscillations. By uncovering how these neural oscillations affect our perceptual judgments, we can better understand how our vision may lead us astray in complex scenes like casinos, and perhaps extend our understanding of, and ability to bias, value--based judgements.</p>

3	Disordered Gambling and Psychosis: Prevalence and Clinical Correlates	<p>Briana D. Cassetta¹ Hyoun S. (Andrew) Kim¹ Daniel S. McGrath¹ David C. Hodgins¹ Hermano Tavares²</p> <p>¹ University of Calgary, Department of Psychology ² Faculty of Medicine, University of São Paulo (Brazil)</p> <p>bcassett@ucalgary.ca</p>	<p>Preliminary evidence suggests that disordered gambling and psychosis are highly comorbid disorders. Such comorbidity is associated with important clinical implications, such as increased relapse rates and early therapy termination. Unfortunately, this dual diagnosis population remains highly understudied, with only a handful of studies examining the prevalence rates and characteristics of individuals with both disordered gambling and psychosis. Moreover, conflicting results have been found in the literature to date, suggesting that more studies are needed in this area. The poster presentation will present results examining the prevalence rate of psychosis in a large sample of treatment seeking disordered gamblers in Sao Paulo, Brazil. Of 349 individuals with gambling disorder, 8% met diagnostic criteria for psychosis, according to the Mini International Neuropsychiatric Interview (MINI). Further demographic and clinical correlates (gambling severity, psychiatric comorbidity, impulsivity, personality characteristics) of disordered gamblers presenting with psychosis will be presented. Results from this research will provide a greater understanding of factors that increase vulnerability to psychosis in disordered gamblers.</p>
4	Feasibility of Using Custom Built Board Games and Video-Game Level Editors to Measure the Impact of Theme and Medium on Risky Decision Making	<p>Craig S. Chapman¹ C.M. Davis¹ J.K. Bertrand¹ E.B. Lavoie¹ J. Sawalha¹ N.J. Wispinski²</p> <p>¹ Faculty of Physical Education and Recreation, University of Alberta ² Department of Psychology, University of Alberta</p> <p>c.s.chapman@ualberta.ca</p>	<p>At its heart, gambling is a risk-reward tradeoff – the player must decide how much money to risk for the chance to win more money back. However, a significant challenge faced by researchers is a failure to emulate the actual risk encountered during real-world risky decisions. Here we present our attempt to mitigate this problem by using game-playing: a context where participants have a keen awareness of risk-reward tradeoffs and are invested in the outcome of their decisions, even if the real-world impact is low. Games also provide an easy tool to manipulate the decision context – here we alter both the theme (e.g. calm vs threatening) and medium (video vs board game) in which the same risky decision is confronted. In one study, the risky-decision was implemented in a video game (Mario Maker) and we show the prototype for a second study where the identical risky-decision is embedded in a board game. Our preliminary video game work has revealed that simply by changing the look and sound of a game level, participants modulate their risk-reward tradeoffs. We hope this project serves as a test bed for further prototypes of easy to create scenarios where participant engagement and motivation is high.</p>
5	Ethical Gambling: A Necessary Ethical Commitment of Democratic Societies to Prevent Pathological Gambling	<p>Mariano Chóliz</p> <p>Faculty of Psychology University of Valencia (Spain) Advisory Council of Responsible Gambling General Directorate of Gambling Regulation (Spain)</p> <p>choliz@uv.es</p>	<p>For gambling companies, gambling is a business in which the profit (Gross Gambling Revenue) is derived from gamblers' losses. At the same time, gambling is designed in such a way that the mathematical expectation is favorable for the company that manages the game; that is, the more money played, the greater the profits obtained. Conversely, the paradox of gambler is that the more one gambles, the greater the losses. But gambling is not only a business; according to APA, gambling is an addictive activity which induces a serious mental disorder. One of the most important effects of this disorder is that it induces excessive gambling and, consequently, huge losses for pathological gamblers, but important gains for gambling companies. In fact, a very important part of the gambling companies' profits come from the losses of problematic and pathological gamblers. This evidence has created an ethical dilemma for democratic societies today: gambling companies encourage excessive gambling because it is profitable for them. However, at the same time, excessive gambling is the primary cause of a very important health problem.</p> <p>Ethical Gambling is a model of gambling regulation which tries to solve this conflict of interests by means of gambling policies which should be implemented by governments of democratic societies. The main goal of</p>

			<p>gambling policies based on the principles of ethical gambling is to prevent the occurrence of pathological gambling, a serious mental disorder due to gambling.</p> <p>The proposal for the regulation of gambling that we present is built around three core ideas, which include the principal variables responsible for gambling addiction whose addictive potential could be reduced by means of adequate gambling policies: a) The regulation of advertising and promotional strategies; b) The regulation of opportunities to gamble, whose most relevant variables are the availability and accessibility of gambling activities, and c) The regulation of the structural characteristics of gambling activities themselves, with the aim of reducing the addictive potential of gambling.</p>
6	<p>Factors Influencing Decision Making by an Australian Pokie Machine Regulator</p>	<p>Louise Francis Charles Livingstone Angela Rintoul</p> <p>Department of Epidemiology and Preventive Medicine, School of Public Health and Preventive Medicine, Monash University (Australia)</p> <p>louise.l.francis@monash.edu</p>	<p>Gambling expansion is commonly justified in public discourse by claims of community benefit, increased employment and capital investment. Compared to other jurisdictions, the Electronic Gambling Machine (EGM) license process in Victoria, Australia, is relatively assessed factors relevant to EGM license decisions made by Victoria's gambling regulator between 2007 and 2014. During the period under review, the regulator granted 144 of 154 applications, finding that approving these applications would not be detrimental to relevant communities. Most commonly cited factors supporting approvals were commitments to undertake capital works, contribute to community purposes and increase employment. The regulator overwhelmingly agreed that supportive factors would balance harms, such as problem gambling, high levels of expenditure or socioeconomic disadvantage. This research demonstrates the difficulty of balancing apparently quantifiable benefits against less readily measurable gambling-related harms in regulatory decision-making. The study found that harms were poorly conceived and understood inadequately and supportive factors frequently overstated. This process may lead to unnecessarily high levels of community harm, contradicting the purposes of the relevant legislation. The study suggests that better, more consistently applied principles are required to ensure the more rigorous scrutiny of supportive factors and improved understanding of gambling harms.</p>
7	<p>Losses Disguised as Wins in Multiline Slots: Can Losing Money Be Reinforcing?</p>	<p>Candice Graydon Mike J. Dixon Madison Stange Jonathan A. Fugelsang</p> <p>Department of Psychology and the Gambling Research Lab, University of Waterloo</p> <p>candice.graydon@uwaterloo.ca</p>	<p>Multiline slots are available worldwide and can pose problems for a subset of players. A concern for problem gambling is that many small "wins" in these games are less than one's spin wager (e.g., bet \$2, win back \$1), but are still accompanied by winning sights/sounds, making them losses disguised as wins (LDWs). We previously found that players somatically, psychologically, and behaviourally miscategorize LDWs as wins.</p> <p>We also found that LDWs encourage prolonged slots play (persistence) during a losing streak, but it depends on the game's reinforcement rate -- there appears to be a "sweet spot" with moderate numbers of LDWs. We extend the latter findings with more naturalistic play by interspersing LDWs (net losses) in to the losing streak. Community participants were given \$20 to play 100 spins on a simulated machine with a moderate number of LDWs (16%). All spins thereafter were monetary losses with either few (6%) or moderate (16%) numbers of LDWs interspersed in the streak. Participants who experienced moderate numbers of LDWs persisted for significantly longer than participants who experienced fewer LDWs during the streak. We conclude that LDWs may be a concern for problem gambling because they can exacerbate gambling persistence despite financial loss.</p>

8	<p>Gambling-Induced Stimulant Craving in Regular Stimulant Users: A Cross-Priming Study</p>	<p>Brittany Horiachka ¹ Daniel S. McGrath ¹ Zarrin Ghaferi ² Megan Cowie ² Pamela Collins ² Martin Zack ³ Sherry H. Stewart ²</p> <p>¹ Department of Psychology, University of Calgary ² Department of Psychology, Dalhousie University ³ Department of Pharmacology & Toxicology, University of Toronto</p> <p>sstewart@dal.ca</p>	<p>Amphetamine cross-primes gambling craving in problem gamblers, suggesting common neural mechanisms underlie the two addictions (Zack & Poulos, 2004). This study examined whether a bout of gambling can cross-prime stimulant craving among regular stimulant users. Participants comprised two groups: regular stimulant users (N = 11) and healthy controls (N = 9). Participants self-reported subjective stimulant craving and provided heart rate samples as a physiological index of craving, twice pre- and twice post-15 minutes of video lottery terminal (VLT) play. A 2 x 4 repeated measures ANOVA on heart rate revealed the predicted group x time interaction, $p = .039$. While the stimulant users showed the expected heart rate increase to VLT play, healthy controls showed a linear decrease in heart rate over time suggesting habituation. A parallel ANOVA on subjective craving revealed a marginal effect of group, $p = .061$, and a main effect of time, $p = .007$, with stimulant craving increasing with VLT play. The lack of expected group x time interaction for subjective craving may be due to inadequate power (the study is ongoing) or to stimulant users entering the session in a state of withdrawal, leading to stimulant craving at baseline, thereby creating a ceiling effect.</p>
9	<p>Gambling Patterns and Problems of Gamblers on Licensed and Unlicensed Sites in France</p>	<p>Sylvia Kairouz ¹ Jean-Michel Costes ² Eva Monson ¹ Vincent Eroukmanoff ² Nicole Arsenault ¹</p> <p>¹ Research Chair on the Study of Gambling Concordia University ² Observatoire des Jeux</p> <p>sylvia.kairouz@concordia.ca</p>	<p>In 2010, France enacted legislation to regulate supply and consumption of online gambling with the aim to protect citizens from gambling-related harm. This study aims to assess differences in gambling patterns and related harm between online gamblers who use licensed versus unlicensed sites.</p> <p>Participants (N=3,860) completed a self-administered online survey on gambling practices. Pairwise logistic regressions examined the association between the legal statuses of gambling sites people patronized and demographic variables and gambling types. Multivariate logistic regression models explored associations between gambling patterns and related problems according to the legal status of sites people have gambled on.</p> <p>Overall, 53.7% of online gamblers report gambling exclusively on licensed sites. Those who bet on regulated activities on unlicensed sites, versus licensed sites, are more likely to be female, younger, less educated, inactive in the labor market and are more likely to perceive their financial situation to be difficult. Gambling on unlicensed sites is associated with more intense gambling patterns and more gambling-related problems compared to licensed sites. Findings demonstrate that gambling activities carried out on state licensed sites are associated with less overall harm to gamblers. Implications of these findings on future policy are discussed and prospective research directions are outlined.</p>
10	<p>To Accept or Not to Accept: Ethical Issues, Potential Benefits and Guidelines for Funding of Gambling Research</p>	<p>Hyoun S. (Andrew) Kim Keith S. Dobson David C. Hodgins</p> <p>Department of Psychology, University of Calgary</p>	<p>Recently, the field of gambling studies has recently come under criticism for accepting funding from the gambling industry. At the heart of the issue is whether accepting research funds from the gambling industry is ethical, given that disordered gamblers account for as much as 40-50% of total gambling revenues. Secondly, questions arise whether accepting such funds creates a conflict of interest. The poster presentation will provide an overview of the ethical issues (e.g., conflict of interest, suppression of research, disclosure) and the potential benefits (e.g., knowledge translation) of accepting such funding. We also provide a summary of best practice ethical guidelines to guide in the ethical decision making process in accepting or declining funding from gambling industry To this end,</p>

		hyoun.kim@ucalgary.ca	the Canadian Code of Ethics for Psychologists will be used as a framework to situate our guidelines and recommendation (e.g., ensuring full autonomy of research including dissemination, considering both potential risks and benefits of accepting funds). Given Canadian researchers have a long history and continue to contribute valuable knowledge in the field of gambling studies, it important for gambling researchers to be aware of the ethical considerations and issues related to funding from gambling industry.
11	“Stop the (Button) Presses”: How Stop-button Use Alters Player Responses to Winning and Losing Outcomes, and May Foster Erroneous Cognitions	<p>Mike J. Dixon Chanel J. Larche Candice Graydon Jonathan A. Fugelsang</p> <p>Department of Psychology, University of Waterloo</p> <p>cjlarche@uwaterloo.ca mjdixon@uwaterloo.ca</p>	<p>Many slot machines feature a stop-button- a device when depressed stops the spinning reels sooner than in games without stop-buttons. Research has shown that some players possess erroneous, skill-related beliefs about the stop-button, and that stop-button use prolongs gambling behaviour (Ladouceur & Sévigny, 2005). Here we sought to examine how erroneous cognitions pertaining to the stop-button impact players’ arousal levels – an important reinforce in gambling. Arousal was indexed by both Skin Conductance Responses (SCRs) and the force with which players depressed the spin button.</p> <p>We predicted more robust SCRs, and force, following wins in a stop-button slots game. A total of 132 gamblers from an Ontario casino played two versions of a slots simulator: one with a stop-button and one without a stop-button. SCR and force data were collected during play and erroneous cognitions pertaining to the stop-button were assessed following play. Results showed that a small but meaningful percentage of players held erroneous cognitions about the stop-button (13.6%). Players also depressed the spin- button harder, and had larger SCRs for all outcomes when using the stop-button. Findings suggest that the stop-button encourages an erroneous perception of skill during play, thus highlighting the need for responsible gambling strategies that effectively combat these misperceptions.</p>
12	Short Term Dopamine D ₃ Agonist Administration Increases Motivation but Does Not Generate Addiction in Rats	<p>Catherine S. Laskowski¹ K. M. Ward¹ D. R. Christensen² D. L. Dorchak¹ K. G. Fisher¹ D. R. Euston¹</p> <p>¹Department of Neuroscience, Canadian Centre for Behavioural Neuroscience, University of Lethbridge ²Faculty of Health Science, University of Lethbridge</p> <p>catherine.laskowski@uleth.ca</p>	<p>Patients prescribed dopamine agonists for treatment of Parkinson’s Disease have reported spontaneous emergence of gambling and other behavioural addictions. Drugs with a high affinity for D3 receptors appear to be the most problematic. In this study, we investigated whether dopamine agonist administration exacerbates addiction symptomatology in rats after long term exposure to gambling-like schedules of reinforcement. Rats received increasing doses of the D3 preferring dopamine agonist, pramipexole dihydrochloride, for 10 days after completing several weeks of training under random or fixed ratio schedules of reinforcement. Animals were assayed for “addiction” via a battery of behavioural tests both before and after receiving the drug.</p> <p>Rats in both the random and fixed ratio groups were willing to work harder over longer periods of time to obtain reward, but pramipexole treatment did not interact with reward schedule. Further, the drug had no significant effect on other behaviours related to addiction, such as persistent responding in spite of aversive outcomes. Overall, our results suggest that short-term dopamine agonist administration increases motivation to work for food reward, but does not cause animals to disregard environmental cues or result in a loss of control over behaviour.</p>

13	The Role of Cognitive Biases and Gambling Fallacies in Problem Gambling	<p>Carrie A. Leonard ¹ Jennifer N. Arthur ²</p> <p>¹ Department of Psychology, University of Lethbridge ² Department of Psychology, University of Adelaide</p> <p>carrie.leonard@uleth.ca</p>	<p>The cognitive model of problem gambling asserts that erroneous cognitions, also known as gambling fallacies, play a key role in the development and maintenance of problem gambling. Research results used to support this model have reported moderate cross-sectional relationships between erroneous cognitions and problem gambling. Elsewhere however, it has been demonstrated that most of the measures constructed to evaluate gambling fallacies have also included the valuation of non-fallacious biases. While gambling fallacies constitute fallacious beliefs about how gambling works, biases are non-fallacious tendencies in thinking. The published results of two recent longitudinal studies provide evidence that fallacious thoughts should not be confounded with non-fallacious biases. In these studies, one of adults and one of adolescents, it was shown that gambling fallacies alone are not a strong predictor of current or subsequent gambling problems. To date there are no studies that have attempted to parse out the differential effects of biases and fallacies on problem gambling. Using a sample of (n = 266) Lethbridge community members and University students, the current research evaluated the distinct effects of both biases and fallacies on problem gambling. The implications of the current results, for the cognitive model and treatment of problem gambling, are discussed.</p>
14	Altered Reward Processing as an Endophenotype for Gambling Disorder: A Functional MRI Study in Unaffected Siblings	<p>Eve H. Limbrick-Oldfield ^{1,2} R. E. Cocks ^{2,3} I. Mick ³ R. S. A. Flechais ³ A. Lingford- Hughes ³ H. Bowden-Jones ⁴ L. Clark ^{1,2}</p> <p>¹ Centre for Gambling Research at UBC, Department of Psychology, University of British Columbia ² Department of Psychology, University of Cambridge (UK) ³ Centre for Neuropsychopharmacology, Division of Brain Sciences, Department of Medicine, Imperial College London (UK) ⁴ National Problem Gambling Clinic, CNWL NHS Foundation Trust, Imperial College London (UK)</p> <p>eve@psych.ubc.ca</p>	<p>It has been shown that gambling disorder is associated with alterations in reward processing. It is unclear whether this pre-dates, or arises as a consequence of, the disorder. To assess the “endophenotypic” (i.e. risk-related) contribution, we investigated reward processing in a group of people with gambling disorder and unaffected biological siblings of people with gambling disorder.</p> <p>We recruited 18 treatment-seeking participants with gambling disorder (all male) and 17 matched controls (all male). We also recruited 15 unrelated biological siblings (7 male) and 16 matched controls (8 male). During functional MRI we used a slot machine simulation to elicit responses to unpredictable financial rewards.</p> <p>All groups showed an extensive network of activity in response to these rewards. Compared to controls, participants with gambling disorder showed no differences in this response, although within the gamblers, win-related activity was negatively correlated with gambling symptom severity. Siblings, compared to controls, showed decreased activity in response to these rewards. Vulnerability to gambling disorder in the unaffected siblings was expressed as reduced activity in the reward network, consistent with an endophenotypic marker. Combined, these results substantiate the reward deficiency hypothesis of addiction.</p>

15	Institutional Entrepreneurship by Marginalized Groups: The Establishment of First Nation Casinos in Canada	<p>Chang Lu School of Business, University of Alberta clu5@ualberta.ca</p>	<p>As institutional scholars shift their interest from the effect of institutions on social actors to how actors shape institution, institutional entrepreneurship has risen as the central concept to address the purposeful creation and development of institutions. However, despite several studies have shown the mechanisms of institutional entrepreneurship accomplished by field or societal level powerful actors, little is known whether and how marginalized groups can play the role of institutional entrepreneur and engage in institutional entrepreneurship as well. In this study, I investigate how First Nations created and developed the Firsts Nation casino gaming field by analyzing over 5,000 pages of historical documents, 22 interviews with both government and First Nation leaders, and ethnographic observations. So far, I found that marginalized actors can accomplish institutional entrepreneurship by capitalizing on marginalization (mobilizing within coherent identities, invoking discrimination and politicalizing entrepreneurial journey) and reluctant conceding (proactively pursuing original goal, overcoming resistance, compromise to the reality of lacking power). These mechanisms are conditioned by the spatial and temporal locations of actions. This study contributes to the emerging literature on institutional entrepreneurship and the imperative call to address grand social challenges by social enterprises.</p>
16	An Evaluation of the Pathways Model of Problem Gambling using the Quinte Longitudinal Dataset	<p>Joel Mader Darren Christensen Rob Williams Brenda Leung Faculty of Education, University of Lethbridge joel.mader@uleth.ca</p>	<p>The pathways model proposed by Blaszczynski and Nower (2002) suggests that problematic gambling may result from three related but distinguishable etiological paths. The present study sought to test the tenets of the model by using the Quinte Longitudinal Dataset (Williams et al., 2015). A latent class analysis was completed using 125 first-time problem gamblers and a three-class solution was found to best fit to the data. The three latent classes identified shared important similarities with the pathways model typologies. There was a group of otherwise normal gamblers who resembled the Behaviourally Conditioned typology, a class of gamblers with elevated antisociality and impulsivity resembling the Anti-social Impulsivist gambler, and a class that shared consistencies, although to a lesser extent than the previous classes, with the Emotionally Vulnerable gambler. Despite these consistencies with the model, anxiety and depression were not found to be significant class predictors. The Behaviourally Conditioned and the Emotionally Vulnerable classes did not appear to be as well differentiated as would be expected given the pathways suppositions. In summary, the findings from the present study do provide support the existence of subgroups of problem gamblers and these subgroups may have important implications for treatment and prevention efforts.</p>
17	Life History Orientation and Gambling	<p>Sandeep Mishra¹ Tyler J. S. Meadows² Andrew Templeton² ¹ Faculty of Business Administration University of Regina ² Department of Psychology University of Regina mishrs@gmail.com</p>	<p>Life history theory is a developmental framework for understanding how organisms allocate their time and energy towards important life functions (e.g., investment in embodied capital; investment in social capital). Life history orientations range on a continuum from “fast” to “slow”. Fast life histories describe individuals who tend to engage in persistent present-oriented decision-making and behavior, whereas slow life histories describe individuals who tend to engage in deliberative, future-oriented decision-making and behavior. We examined whether life history orientation explains variance in problem gambling tendencies. Results demonstrated that individual differences in life history orientation were significantly associated with problem gambling tendencies. Furthermore, a hierarchical regression model indicated that life history orientation explained variance in problem gambling tendencies above and beyond personality traits that have been previously associated with gambling (namely, impulsivity, sensation seeking, and self-control). Taken together, these findings suggest that problem gambling tendencies are associated with relatively “faster” life history orientations. More broadly, the results suggest that life history theory may provide some insight into the developmental etiology of problem gambling tendencies.</p>

18	Assessing Problem Gambling: Convergence and Divergence of the Problem Gambling Severity Index (PGSI) and the Diagnostic Statistical Manual of Mental Disorders (DSM-IV-TR)	<p>Eva Monson Sylvia Kairouz Frédéric Dussault Nicole Arsenault Samantha Ilacqua</p> <p>Research Chair on the Study of Gambling, Concordia University</p> <p>eva.monson@gmail.com</p>	<p>Two common instruments for the assessment of problem gambling are the Problem Gambling Severity Index (PGSI) and the Diagnostic Statistical Manual of Mental Disorders (DSM-IV-TR). Within gambling literature, there remains a dearth of comparative psychometric validation of both scales as screening tools for problem gamblers in population studies. Kappa and phi coefficients are commonly used to assess agreement between tests, but can underestimate actual agreement when the prevalence of a disorder is very low.</p> <p>Integrating novel approaches, including the relative improvement over chance (RIOC) statistic that corrects for the mismatch between base rate and selection ratio, this study compares the PGSI and DSM-IV-TR assessments within a population of gamblers.</p> <p>Data were drawn from a 2009 representative sample (N=11,888) of individuals aged 18 and above from Quebec, Canada. Participants' (n=179) gambling habits were assessed using the PGSI and a clinical interview using the pathological gambling criteria of the DSM-IV-TR.</p> <p>Agreement between the PGSI and DSM-IV-TR was measured with kappa and phi coefficients and the RIOC statistic. Different cutoff criteria for problem and pathological gambling were evaluated to determine where improved classification accuracy could be obtained. Comparisons of convergence and divergence on issues of false positives and negatives were explored.</p>
19	Do Disordered Gamblers Become Problem Substance Users Upon Recovery? A Systematic Review of Addiction Substitution	<p>Hyoun S. (Andrew) Kim Iman Musani Sunaira Tejpar Daniel S. McGrath David C. Hodgins</p> <p>Department of Psychology, University of Calgary</p> <p>hyoun.kim@ucalgary.ca</p>	<p>According to clinical lore, when people engage in recovery from an addictive disorder such as gambling, they are at risk of increasing a secondary addictive behavior (e.g., alcohol, nicotine, other drug use). This clinical phenomenon is known as addiction substitution. Unfortunately, addiction substitution may increase the risk of gambling relapse or result in the development of a new addiction. Although addiction substitution is assumed to be a risk of recovery, it is unclear how much empirical evidence exists that validates the concept. We present findings from a systematic review of peer-reviewed published literature assessing addiction substitution, including among disordered gamblers. The search strategy identified 11,179 separate articles and, upon full-text review, 46 articles were retained for synthesis. Only three of these articles assessed addiction substitution among gamblers and the results were mixed. Specifically, a case report of a patient whose gambling became disordered upon recovery from a substance use disorder supported the concept. Conversely, a longitudinal study of treatment-seeking gamblers (N=169) found that only 5% had substituted to a psychoactive substance in a 12-month follow up. Lastly, a cross-sectional study (N=51) found that while some disordered gamblers reported their substance use increased following a decrease in gambling, others did not. Implications and future directions are discussed.</p>
20	Working Group on Online Gambling – Five Recommendations to Increase Government Revenue and Protect At-Risk Gamblers	<p>Louise Nadeau¹ Sylvia Kairoux² Catherine Paradis³</p> <p>¹ Department of Psychology, Université de Montréal ² Research Chair on the Study of Gambling, Department of Sociology and Anthropology, Concordia University</p>	<p>In 2010, the Government of Quebec announced the development of a public offering of online gambling administered by Loto-Québec. Key stakeholders publicly opposed the decision. In this context a Working Group on Online Gambling was created by the Minister of Finances. On the basis of facts collected over four years, the Working Group produced a Report with five recommendations¹ directed at best practices in online gambling. In short, they stated: 1) limit the responsibility of Loto-Québec to the management of online gambling offerings and establish an independent foundation with a mission of prevention and knowledge production; 2) adapt treatment and support that take into account the co-occurring issues encountered by individuals with gambling-related disorders; 3) create a regulatory body responsible for the monitoring of advertising, responsible offering, security and integrity of online and other gambling activities of all operators in the province; 4) change the Criminal Code to enable the provinces to issue online gambling licences to private operators and implement subsidiary measures to</p>

		<p>³ Canadian Centre on Substance Abuse</p> <p>louise.nadeau.2@umontreal.ca</p>	<p>ensure the efficacy of the licensing system; 5) pursue the monitoring system put in place by the Working group. These policy recommendations will be the focus of the poster.</p>
21	<p>Reducing Distress and Increasing Treatment Readiness: A Brief 6-Step Intervention for Individuals Calling a Gambling Helpline</p>	<p>Jane Oakes ¹ Victoria Manning ^{1,2} Simone Rodda ^{1,3,4} Dan Lubman ^{1,2}</p> <p>¹Turning Point, Eastern Health Melbourne (Australia) ²Eastern Health Clinical School, Monash University (Australia) ³School of Public Health and Psychosocial Studies, Auckland University of Technology (New Zealand) ⁴School of Psychology, Deakin University (Australia)</p> <p>janeo@turningpoint.org.au</p>	<p>Many gamblers seeking help are in crisis and experiencing intolerable distress. This can impact on their capacity to learn and engage in behaviour change, thus helpline counsellors' must aim to reduce this distress prior to intervention. Therapies that promote behaviour change are particularly effective when delivered at the 'teachable moment', often driven by a related event, in this context a gambling crisis.</p> <p>To increase the uptake of help-seeking, a single brief evidence-informed intervention was developed to reduce distress. This brief intervention was informed through consultation with in-take workers, helpline/online counsellors and a literature review. It built on existing interventions for crisis management and treatment readiness used with other clinical populations, as well as experiences of the team who have expertise in the field of gambling research and both gambling treatments and relapse. This intervention involved six steps to be followed when distress has been identified; (1) acknowledge and measure distress level, (2) normalise and reduce distress (3) optimise motivation for change (4) provide a sense of hope (5) re-measure distress level (6) explore treatment/support options.</p>
22	<p>Facilitatory Cognitions and 'Gambling Sense' Underpin the 'Merry-Go-Round' of Repeated Relapse in Electronic Gaming Machine Problem Gamblers</p>	<p>Jane Oakes ¹ Rene Pols ³ Sharon Lawn ³ Mariastella Pulvirenti ⁴</p> <p>¹Turning Point, Eastern Health Melbourne (Australia) ²Eastern Health Clinical School, Monash University (Australia) ³Flinders Human Behaviour and Health Research Unit, Department of Psychiatry, Flinders University (Australia)</p>	<p>Little is understood about repeated relapse in electronic gaming machine (EGM) problem gambling. There is usually a prolonged delay in problem gamblers (PGs) presenting for treatment, despite seriously distressing consequences. They persist in repeated relapse apparently unable to stop this cycle of harm despite frequent intentions to stop this behaviour.</p> <p>This study provides an understanding about the phenomenon of repeated gambling relapse and why gamblers continue to relapse despite the harm. The study comprised of (n= 54) participants purposefully selected who participated in either 1 of 5 focus groups (n=35) or in- depth interviews (n=19) to examine relapse from multiple perspectives, and ascertain how the process of relapse occurs.</p> <p>PGs described cognitions used to justify decision making and reasoning about gambling via what several described as 'gambling sense' a non-logical decision-making framework of interacting cognitions, which resulted in recurrent relapse and failure to learn from the loss experience. The compulsive, destructive and repeated relapse behaviour leads to a hopeless 'merry-go-round' where relapse becomes a way of life, and where behaviour change, and learning to cease gambling, become extremely difficult. EGM PGs' cognitive processes during relapse seem more complicated than previously considered which has important implications for recovery and treatment.</p>

		<p>⁴Discipline of Public Health, Flinders University (Australia)</p> <p>janeo@turningpoint.org.au</p>	
23	<p>Lower Severity Gambling and Associated Harms in the Tasmanian Population</p>	<p>Odedeji Odeloye Darren Christensen</p> <p>Department of Health Sciences, University of Lethbridge</p> <p>odedeji.odeloye@uleth.ca</p>	<p><i>Background:</i> Problematic gambling poses a public health threat for individuals, families, and the community at large. Although most of the harms experienced by problem gamblers are well documented, less is known about the harms that are experienced by other groups of gamblers such as low and moderate risk gamblers. The purpose of this study is to examine the relationship between lower severity gambling (low and moderate risk), and other issues such as poor health and substance abuse compared to problem gamblers.</p> <p><i>Method:</i> Logistic regressions of lower gambling severity against quality of life, substance use, financial difficulties, life events and health related harms was conducted on data from the Second Social and Economic Impact Study of Gambling in Tasmania 2011 (Australia). Demographic variables were used as base-line predictors.</p> <p><i>Findings and Conclusion:</i> The measures that distinguished lower severity gamblers from problem gamblers were quality of life (physical and environment) and health related harms (lung diseases and stroke) in the presence of demographic factors. Overall, demographic factors play significant and diffuse roles in the relationships between lower severity gambling and gambling related harms.</p>
24	<p>The Relation of Gambling Accessibility with Gambling Behavior and Problems: A Comparison, Integration, and Development of a Multifactor Model</p>	<p>Samuel Ofori Darren Christensen</p> <p>Faculty of Health Sciences, University of Lethbridge</p> <p>oforidei@uleth.ca</p>	<p>Previous theoretical models of gambling accessibility are too simplistic to capture the variety of mechanisms underlying how accessibility factors influence gambling participation and problems. For instance, existing models of gambling accessibility neglect to show how sociodemographic and psychosocial factors create differential levels of individual and community vulnerabilities to the risk of problem gambling.</p> <p>Using cross-sectional data from Alberta and Tasmania, this study addresses the above knowledge gap by developing and testing a multifactor model to identify and examine the mechanisms underlying the relationship of gambling accessibility to gambling participation and problems. The study addresses two questions: (1) To examine the individual and interactive effects of gambling accessibility factors (e.g., the distribution, proximity, and density of gaming venues) on the prevalence of gambling participation and problem gambling, and 2) To what extent does sociodemographic and psychosocial factors affect the impact of gambling accessibility factors on participation in gambling.</p>
25	<p>Gambling Participation and Problem Gambling among Icelandic Football Players: Examining the Potential Risks of Game Fixing</p>	<p>Daníel Þór Ólason¹ Hafrún Kristjánsdóttir² Kristján Gunnar Óskarsson¹ Tryggvi Þór Einarsson²</p> <p>¹ Department of Psychology, University of Iceland ² Department of Sports Science, University of Reykjavík</p>	<p>Studies on gambling behaviour among athletes are rare and no studies have been published on football players. Aims of the current study were to examine prevalence of gambling and problem gambling among semi-professional and amateur players in all divisions of the Icelandic Football Association. Secondly, to examine gambling behaviour that might increase risks of game fixing. In total, 2,170 players were registered for competition in all five divisions of Icelandic football during the year 2016 and responses were obtained from 725 players, 547 males and 178 women. About 66% had gambled at least once in the past year and most gambled on sports (predominantly football), poker and scratch tickets. Problem gambling (8+ on PGSI) was 2.4%, 3.3 % for men and 0.6% for women. Risks of potential game fixing was examined and 23% of players knew about fellow players gambling on own games and 13.5% on in-play events. More importantly, 7% actually gambled on their own games and 3.6% gambled on in-play events in their own games. There was a significant association between gambling frequency and betting on one's own game</p>

		dto@hi.is	but not with problem gambling. These results suggests that risks of match fixing is a relevant issue for Icelandic football as elsewhere.
26	Risk and Protective Factors for Family Violence in a Problem Gambling Help-seeking Population in New Zealand	<p>Katie Palmer du Preez Maria Bellringer Janet Pearson Nick Garrett Jane Koziol-McLain Denise Wilson Max Abbott</p> <p>Gambling and Addictions Research Centre, AUT University</p> <p>katie.palmerdupreez@aut.ac.nz</p>	<p>Anecdotally, problem gambling and family violence have been reported by problem gambling treatment providers to be highly co-existing. However, there is limited published evidence for the co-existence of the two phenomena and no robust research pertaining to the New Zealand context. This study investigated the links between problem gambling and family violence in a population of gamblers seeking professional help for their own gambling. Gamblers (n = 370) accessing national problem gambling treatment services took part in a survey on gambling and family violence and abuse. Family violence was measured using the HITS screening tool covering physical and sexual violence as well as psychological, verbal and emotional abuse. Additional questions assessed financial abuse. The measurement of family violence in this study did not capture patterns of coercive control. Multiple logistic regression analyses demonstrated a relationship between problem gambling and violence, such that gamblers who experienced more negative effects from problem gambling had a higher risk of being victims of violence. An additional risk factor for family violence victimisation was having children younger than 18 years living at home. Protective factors for violence victimisation included being unemployed. In relation to gamblers' perpetration of family violence, risk factors were having family members who had a mental health issue in the prior 12 months, having an eldest child with behavioural issues, and cohabitating as a couple. Protective factors for family violence perpetration included being an ex-smoker, having self-excluded from gambling venues, experiencing greater material social support, and having had gambling problems for a moderate (three to six years) or long (13 years or more) length of time. Some limitations and implications of the risk and protective factors identified in this research are discussed, with suggestions for clinical practice and further research.</p>
27	Assessment of Progressive Ratios as a Method to Evaluate Near Miss Function	<p>Jeffrey M. Pisklak Joshua J. H. Yong Marcia L. Spetch</p> <p>Department of Psychology University of Alberta</p> <p>pisklak@ualberta.ca</p>	<p>A "near miss" occurs when the cues in a casino game suggest to a player that they have almost won. These have long been presumed to make people gamble more than they otherwise would. Formally, this means that near misses are thought to conditionally reinforce the gambler's betting response. Most tests of this near miss effect have focussed on the persistence of responding during extinction (i.e. when wins no longer occur). While theoretically valid, these have tended to produce inconsistent findings across laboratories suggesting a need for more robust measures. One common method for measuring the effect of a reinforcer is the progressive ratio (PR) procedure.</p> <p>Traditionally, this procedure has only been applied to unconditional forms of reinforcement, such as the reinforcing effect of drugs in self-administration studies. However, its utility in measuring conditional forms of reinforcement (such as winning and near miss cues in gambling) is unknown. In this set of experiments we evaluated the use of a PR procedure for measurement of conditional reinforcement in 10 pigeons. Results showed a clear reinforcing effect of cues signalling a shorter delay to food, demonstrating the PR procedure's sensitivity to conditional reinforcement and promising application to animal models of gambling.</p>

28	Public Stigma of Gambling Disorder: A Qualitative Analysis of Community Attitudes and the Role of Culture	<p>Jennifer L. Prentice Leanne Quigley David C. Hodgins Keith S. Dobson</p> <p>Psychology Department, University of Calgary</p> <p>jlprenti@ucalgary.ca</p>	<p>It is well known that individuals with gambling problems are stigmatized; however, little is known about why this stigma exists, what beliefs and attitudes constitute this stigma, and how this stigma may be reduced (Hing et al., 2014). Qualitative investigations of community members have the potential to yield more in-depth knowledge about the beliefs that people hold about gambling problems that contribute to public stigma and the reasons why these beliefs are held. Twenty Calgary community participants from major ethnicity groupings (i.e., European; Asian; Middle Eastern; African; and South American) will comprise the sample. Culture is formally operationalized (i.e., self-construals and acculturation), and data will be analyzed for themes (c.f. Braun & Clarke, 2006) related to participants' knowledge of gambling disorder and its symptoms, what characteristics may make a person more likely to develop a gambling disorder, what causes gambling disorder, beliefs about treatment for and prognosis of gambling disorder, and perceptions about stigma related to gambling disorder, including why it exists and how it might be reduced. The implications of the results for understanding of and future research related to stigma of gambling disorder and the role of culture will be discussed.</p>
29	Stigma and Problem Gambling: An Examination of Individual Difference Factors	<p>Jennifer L. Prentice Leanne Quigley David C. Hodgins Keith S. Dobson</p> <p>Psychology Department, University of Calgary</p> <p>jlprenti@ucalgary.ca</p>	<p>A largely unexplored question concerns whether certain demographic groups hold stigmatizing attitudes toward gambling problems more strongly than others. There is indication from past research that certain demographic variables (i.e., marital status, ethnicity, and age) are related to gambling-related attitudes and beliefs (Cunningham et al., 2011). Other individual difference variables, such as personality factors, are relevant to stigmatizing attitudes towards gambling disorder, but have not yet been explored empirically. The present study examined the relationship among individual difference factors (e.g., demographic characteristics, personality factors) and stigmatizing attitudes and beliefs towards gambling in a sample of 200 community members. Several predictions were advanced in relation to stereotypes, desired social distance, discrimination, perceived stigma, and prognosis and treatment beliefs related to gambling disorder and individual difference factors. A better understanding of the stigmatization of gambling disorder will inform stigma reduction efforts, which in turn should improve rates of treatment-seeking and recovery and enhance the well-being of individuals struggling with gambling problems.</p>
30	Motivations for Not Gambling among Lifetime Non-Gamblers	<p>Christina L. Rash Daniel S. McGrath</p> <p>University of Calgary, Department of Psychology</p> <p>clrash@ucalgary</p>	<p>While many studies have examined risk factors for gambling disorder (GD; Johansson et al., 2009; Welte et al., 2004), comparatively little research has focused on non-gamblers with the intention of identifying protective factors against GD. In addition, those studies that have examined non-gamblers have tended not to acknowledge potential differences between individuals who have (i.e., current non-gamblers) and have never gambled before in their lifetime (i.e., lifetime non-gamblers; e.g., Lalande et al., 2013). Recent research examining motivations for not gambling has found differences between current and lifetime non-gamblers with regard to open-ended reasons provided for not gambling as well as substance use variables (Rash & McGrath, in press); however, results may have been limited by the use of an undergraduate sample of psychology students (Gainsbury et al., 2014). The present study aims to address this limitation by recruiting a sample of adult lifetime non-gamblers from Amazon's MTurk. Participants provided their top three reasons for not gambling in rank-order, and these responses were coded and categorized based on conceptual similarity. The various categories were then compared on several demographic and psychosocial variables. It is hoped that the present study may assist in future research examining protective factors against GD.</p>

31	<p>Who Steals to Gamble? Assessing Rates and Psychological Characteristics of Brazilian Disordered Gamblers Who Commit Illegal Acts</p>	<p>Christina L. Rash ¹ Emma V. Ritchie ¹ Hyoun S. (Andrew) Kim ¹ Daniel S. McGrath ¹ David C. Hodgins ¹ Hermano Tavares ²</p> <p>¹ University of Calgary, Department of Psychology ² Faculty of Medicine, University of São Paulo (Brazil)</p> <p>clrash@ucalgary</p>	<p>Despite evidence suggesting that disordered gambling (DG) and criminal behavior often co- occur (Blaszczynski & McConaghy, 1994), the DSM-5 removed the ‘illegal acts’ criterion in the diagnosis of DG. This is because research suggests that only the most severe DGs report criminal acts (McBride et al., 2010). Moreover, studies have found that removal of this criterion has little impact on rates or psychometric properties of in making a DG diagnosis (Petry et al., 2013); however, it has been argued that the ‘illegal acts’ criterion may be useful when determining DG severity (Strong & Kahler, 2007). More importantly, DGs who report a history of illegal acts may be qualitatively different from those who do not. The aim of the present study was to examine the prevalence rate and psychological characteristics of DGs who have committed an illegal act in sample of treatment seeking disordered gamblers in Sao Paulo, Brazil. Individuals were assessed using DSM-IV Pathological Gambling criteria between the years of 2011 and 2015. Of the 183 individuals with gambling disorder, 33% reported committing illegal acts in relation to gambling. Results will be presented comparing DGs who report a history of illegal acts to DGs who have not in regards to demographic and psychological characteristics. Results and implications of the present research will be discussed.</p>
32	<p>Responsible Gambling Codes of Conduct: Honoured in the Breach Rather than the Observance?</p>	<p>Angela Rintoul ^{1,2} Julie Deblaquiere ¹ Anna Thomas ¹</p> <p>¹ Australian Gambling Research Centre, Australian Institute of Family Studies (Australia) ² School of Public Health and Preventive Medicine, Monash University (Australia)</p> <p>angela.rintoul@monash.edu angela.rintoul@aifs.gov.au</p>	<p>Responsible Gambling Codes of Conduct (CoC) are used globally to describe electronic gambling machine (EGM) operator commitments to reduce harm from gambling. In addition to the provision of passive product warnings, mandatory CoC in Victoria, Australia describe how venues should assist EGM users displaying signs of problematic gambling. This poster reports real world venue lack of adherence to the active strategies described in the CoC relating to discouraging gamblers from harmful, intensive and extended gambling. The poster presents triangulated data from aspirational statements made by EGM operators; unannounced observations by the research team in 11 EGM venues; interviews and focus groups with 40 gamblers and 20 professionals in Victoria. The weight of evidence demonstrated that venues failed to respond to signs of gambling problems and often encouraged continued gambling in contradiction of their CoC responsibilities. Gambling problems appear to be a normalised feature of EGM use in these venues. To genuinely address this public health challenge, improved consumer protection may be achieved if regulations mandate venue interventions in response to signs of gambling harm. This may include limiting withdrawals of cash, algorithms to identify problematic gambling patterns and binding, universal pre-commitment systems to complement supportive interventions by venue staff.</p>
33	<p>Introducing the International Behavioural Addictions and Impulse Control Disorders Network: A Collaboration between the University of Calgary and the University of São Paulo</p>	<p>Emma V. Ritchie ¹ Daniel S. McGrath ¹ Hyoun S. (Andrew) Kim ¹ David C. Hodgins ¹ Kristin M. von Ranson ¹ Hermano Tavares ²</p> <p>¹ University of Calgary, Department of Psychology</p>	<p>The International Behavioural Addictions Network recently formalized a research collaboration between the University of São Paulo and the University of Calgary. The Impulse Control Disorders Outpatient Unit in São Paulo has been treating and collecting data on individuals seeking treatment for diverse impulse control disorders since 1996. This has resulted in a wealth of data, including a wide range of psychological assessments on 1071 treatment seeking gamblers. Our collaboration provides psychology researchers at the University of Calgary access to a large clinical sample, which are notably difficult to obtain, and offer our depth and breadth of knowledge in further developing research on behavioural addictions in Brazil. This poster will describe research projects that are underway, including studies of psychological characteristics of gamblers who commit crimes and the prevalence and correlates of psychosis among disordered gamblers. We are also planning cross-national studies to examine</p>

		<p>² Faculty of Medicine, University of São Paulo (Brazil)</p> <p>evritchi@ucalgary.ca</p>	<p>similarities and differences between disordered gamblers in Brazil and Canada. This newly formed collaboration has the potential to place our respective laboratories at the forefront of gambling and behavioral addictions research.</p>
34	<p>Implicit Memory Associations and Problem Gambling: Investigating the Relationship Using a Canadian National Panel Study</p>	<p>Gillian Russell ¹ Robert Williams ^{1,2} James Sanders ²</p> <p>¹ Department of Psychology, University of Lethbridge ² Department of Health Sciences, University of Lethbridge</p> <p>g.russell@uleth.ca</p>	<p>Research investigating addictive behaviours often relies strictly on self-report assessment that is susceptible to such issues as self-justification, deception, and social desirability. Measures that assess implicit memory associations are thought to assess processes unavailable to conscious introspection and be less sensitive to these issues. In the present work we evaluate two brief measures of ambiguous word and behaviour associations in a large population-based sample of Canadian adults (N=3078). For the word association task, participants were presented with 10 ambiguous cue words that included: situations associated with gambling; outcomes of gambling engagement; and, associated paraphernalia. The behaviour associate task involved 10 phrases based on common motives for gambling engagement (i.e., to have fun, make money, etc.). Those with greater gambling engagement (as measured by frequency of gambling, money spent, and number of gambling formats engaged in) and more problematic gambling (as measured on the PPGM) responded to both the ambiguous words and behaviour associations with more gambling-related responses. This study has important implications for future gambling research and the importance of implicit memory associations as they may affect or even precede gambling behaviour.</p>
35	<p>Gambling, Gambling-Related Harm and Gambling Marketing Before and After the Merger of the Finnish Gambling Operators</p>	<p>Anne H. Salonen ¹ Sari Castrén ¹ Jani Selin ¹ Matilda Hellman ² Hannu Alho ^{1,3}</p> <p>¹ National Institute for Health and Welfare, Department of Public Health Solutions, The Alcohol, Drugs and Addictions Unit (Finland) ² University of Helsinki, Department of Social Research (Finland) ³ University of Helsinki, Institute of Clinical Medicine (Finland)</p> <p>anne.salonen@thl.fi</p>	<p>This presentation describes the study protocol for an evaluation of a change in the Finnish gambling monopoly system. Previously, Finnish gambling policy was based on a licensed three-party monopoly system. In January 2017, these operators were merged into a single company. The merger has been justified in terms of better mitigation of social and health-related gambling harms. But, it also entails a more versatile game portfolio and a centralized availability of online gambling. This study surveys the gambling, gambling-related harms and exposure to gambling marketing before and after the merger. The aim is to clarify whether the merger affects these three dimensions and what sort of consequences it implies. The randomly sampled population-based data of 18+ year-old Finns (N=20,000) is collected in January–February 2017 and the second wave one year later. The data is collected using web- and postal surveys in three geographical areas. Also, a cross-sectional reference data is collected from help-seeking gamblers. Gambling harms are evaluated using the 14-item Problem and Pathological Gambling Measure and the 72- item Harms Checklist. The perspective of affected other is inquired using a 12-item harms list. Register data will also be used. A supplementary in-depth material is collected in a qualitative study.</p>

36	Gambling Careers, Change Factors, and Harm – Qualitative Interviews with Gamblers in the Swedish Longitudinal Gambling Study	<p>Eva Samuelsson Kristina Sundqvist</p> <p>Centre for Social Research on Alcohol and Drugs, Stockholm University (Sweden)</p> <p>eva.samuelsson@sorad.su.se</p>	<p>Gambling habits and problems change over time and are influenced by a variety of factors. To deepen our understanding of change processes related to gambling habits and problems, qualitative telephone interviews were conducted with 40 gamblers who previously participated in the Swedish longitudinal gambling study, Swelogs. Factors on individual, relational and societal levels were influential for the gambling careers. Personality, well-being, perceptions of gambling, access to money, employment, family situation, life events, maturation, advertising, and accessibility, were interacting factors and should be considered within their contexts. Four typical cases were identified representing various levels of risk and change trajectories. Situations associated with increased gambling were peer-gambling and binge drinking in the 20s, becoming of legal age to gamble, high amount wins, itinerant work situations, negative life events, depression, loneliness, and lack of satisfactory employment. Psychological well-being, supportive relationships and meaningful activities were crucial for overcoming destructive gambling habits or keeping the gambling on a non-problematic level. The characteristics of gambling harm and influence of gambling advertising is further discussed. To repeatedly become interviewed about gambling habits can contribute to increased reflection and awareness of own behaviours and gambling problems overall in society.</p>
37	Development of a Brief Screening Instrument for Behavioural Addictions	<p>Magdalen G. Schluter¹ David C. Hodgins¹ T. Cameron Wild² Jody Wolfe²</p> <p>¹ Department of Psychology, University of Calgary ² School of Public Health, University of Alberta</p> <p>magdalen.schluter@ucalgary.ca</p>	<p>Disordered gamblers with comorbid addictions may spend more time gambling, spend more money, and report greater craving, which has serious implications for development, course, and treatment of problem gambling. However, our understanding of these comorbid addictions is limited by available assessment measures. Current measures are typically too lengthy to be used in population-based research or show heterogeneous item formats and underlying conceptual approaches, making comparisons across behaviours problematic. There is a clear need for an appropriate screening tool with good sensitivity and specificity for measuring a wide array of potentially problematic addictive behaviours in the community. Therefore, using a large Canadian sample (N=6,000), we developed a brief self-report screening measure that fulfills this need. We selected a small, psychometrically optimal set of items which are used across gambling and 9 other target behaviours to ensure measurement of the same underlying construct. Overall, the screener demonstrated excellent internal consistency, predictive validity, and accuracy. The gambling subscale demonstrated good convergent validity with the Problem Gambling Severity Index and a suitable cut-score of 2 was established with good sensitivity and specificity. The results support the utility of the screener with applications in research and targeted treatments for disordered gambling and other excessive behaviours.</p>
38	Trauma, Stress and Coping in People with Problem Gambling and their Relatives	<p>Mohammed Kalathil Shakeel¹ Danielle. C. Lefebvre¹ Vina M. Goghari² David C. Hodgins¹</p> <p>¹ Department of Psychology, University of Calgary ² Department of Psychology, University of Toronto</p>	<p>Problem gambling (PG) is affected by factors including genetics, cognitive styles, stress, and coping strategies. Women with PG also more frequently report a history of childhood trauma compared to men. The current study investigated coping styles (Coping Inventory for Stressful Situations) and history of childhood trauma (Childhood Trauma Questionnaire) in participants with problem gambling (probands; n = 23), their first degree relatives (n = 13), and community controls (n=26). It was hypothesized that probands will show less task oriented, and more emotion and avoidance coping when compared to relatives and controls. It was also hypothesized that probands of both sexes will report higher rates of trauma. Results showed that probands and relatives were significantly less likely than controls to use task-oriented coping, probands (but not relatives) were significantly more likely than controls to use emotion-oriented coping, and there was no difference between the groups for avoidance oriented coping. In terms of trauma there was a significant interaction of group by gender. While women reported more</p>

		<p>mohammed.kalathil@ucalgary.ca dclfebv@ucalgary.ca</p>	<p>trauma than men among probands and controls, men reported more trauma among relatives. Task-oriented coping may reflect a familial component that predisposes a subset of individuals to become problem gamblers.</p>
39	<p>Proactive and Reactive Mechanisms of Response Inhibition in Gambling Disorder</p>	<p>Maryam Sharif-Razi¹ David C. Hodgins¹ Vina Goghari² Dan S. McGrath¹</p> <p>¹ Department of Psychology, University of Calgary ² Department of Psychology, University of Toronto</p> <p>maryam.sharifrazi@ucalgary.ca</p>	<p>Impaired cognitive control is a core feature implicated in the development of gambling disorder. Recent models of cognitive control distinguish between two mechanisms: reactive (“late correction” mechanism triggered by stop-stimulus) and proactive control (“early selection” mechanism required for anticipation of stop-stimulus). Previous studies have solely focused on reactive modes of control in gambling disorder. Thus, the aim of the present study is to assess reactive and proactive control in a sample of disordered gamblers (n=50) and community controls (n=50) using a variant of the traditional stop-signal task. Stop signal reaction time (SSRT) was used to index reactive control while change in reaction time as a function of stop-signal probability was used to index proactive control. Preliminary analyses indicate non-significant group differences in SSRT means, with lower levels of reactive control displayed by disordered gamblers. Regarding proactive control, although no group by stop-signal probability interaction was observed, reaction time increased linearly as a function of stop-signal probability in controls and disordered gamblers. Preliminary findings suggest both groups adopted a more cautious approach when provided with anticipatory cues. Theoretical and treatment implications will be discussed.</p>
40	<p>Gambling Problems and Help-Seeking among Poker Players: Findings from an Online Survey</p>	<p>Will Shead¹ Nicholas Borodenko²</p> <p>¹ Department of Psychology Mount Saint Vincent University ² Prairie Research Associates</p>	<p>Poker players are a distinct subgroup of gamblers. Prior research suggests that motives for gambling, how gambling problems are experienced, and help-seeking among poker players may differ considerably from other types of gamblers. Consequently, assumptions about problem gambling among poker players, including our general understanding of problems, diagnostic tools, prevention, and treatment approaches should be adapted to reflect these unique experiences. Quantitative and qualitative data were collected via online surveys from 601 poker players (75.8% male; mean Age = 39.7 years; mean PGSI score = 3.5). In open-ended responses, participants identified several barriers to help-seeking that point to unique aspects of poker (e.g., “poker is a game of skill so seeking help is admitting you are a bad player”). The importance placed on certain barriers to help-seeking and reasons for reducing/stopping poker play varied with problem gambling (PG) severity and whether or not participants identified as “current” or “former” players. In addition, awareness of strategies and available services to overcome a problem differed depending on PG status and current/former player status. The findings may be useful for the development of prevention and treatment approaches that specifically target poker players with gambling problems.</p>
41	<p>An Examination of the Frequency of Near-Miss Outcomes in Scratch Cards and Their Effects on Gambling Urge and New-Card Purchases</p>	<p>Madison Stange^{1,4} Mike J. Dixon^{1,4} Candice Graydon^{1,4} Daniel G. Brown^{2,4} Kevin Harrigan^{3,4}</p> <p>¹ Department of Psychology, University of Waterloo</p>	<p>Near-miss outcomes are commonly encountered in various gambling forms, but perhaps the most under-researched occurrence of these outcomes is in scratch-card games. We sought to ascertain 1) how often these outcomes occur, and 2) what effects these outcomes have on gambling behaviour. To address these questions, we first analyzed symbol and symbol-pair frequencies in two samples of “Cash for Life” cards – a game in which uncovering three LIFE symbols would yield a top prize. Results indicate that LIFE symbols were the most commonly occurring symbol in these games, and pairs of LIFE symbols (i.e., near-miss outcomes) occurred more frequently than any other symbol pair. Next, we conducted a study to determine the influence of near-miss outcomes on gambling urge, and new-card purchasing behavior. We randomly assigned participants to experience either a regular loss or a near-miss on a scratch-card game. Urge to gamble ratings following near-miss outcomes were</p>

		<p>²David R. Cheriton School of Computer Science, University of Waterloo</p> <p>³Department of Drama and Speech Communication, University of Waterloo</p> <p>⁴University of Waterloo Gambling Research Lab</p> <p>mstange@uwaterloo.ca</p>	<p>elevated, and positively correlated with making an additional purchase, whereas urge ratings following regular losses were lower and uncorrelated with subsequent purchasing behaviour. Collectively, these results suggest that scratch cards are designed to include many near-miss outcomes that may motivate a subset of gamblers to make additional purchases.</p>
42	<p>Comparisons between PGSI Scores and Qualitative Accounts in the Swedish Longitudinal Gambling Study</p>	<p>Kristina Sundqvist Eva Samuelsson</p> <p>Centre for Social Research on Alcohol and Drugs, Stockholm University (Sweden)</p> <p>kristina.sundqvist@sorad.su.se</p>	<p>Prevalence of problem gambling remains relatively stable over time, but might encompass different people who shift in and out of problematic behaviors. To study problem gambling involves using different measures, where quantitative and qualitative methods are complementary. Previous research has revealed discrepancies between quantitative screening instruments and qualitative interview accounts, which could be related to problems with memory recollection, cognitive misinterpretations, social desirability and/or timeframe comprehension. To compare respondents' PGSI scores at previous occasions and current narrative interview accounts, qualitative follow up interviews were conducted with 40 gamblers previously participating in the epidemiological track of the Swedish longitudinal gambling study, Swelogs. Each case was analyzed related to previous and current PGSI scores, interviewer assessment of previous and current risk levels, interview accounts of previous and current habits, problems and harms, typical patterns of discrepancies and various explanations for eventual contradictions. Results and practical implications are discussed. To avoid under and/or overestimation of problem gambling, it is crucial to develop satisfactory methods to measure problem gambling and harm.</p>
43	<p>The Effect of a Computerized Values Card Sort Task with Disordered Gamblers</p>	<p>Jennifer Swan David C. Hodgins</p> <p>Department of Psychology, University of Calgary</p> <p>jswan@ucalgary.ca</p>	<p>Developing discrepancy between client goals and values (e.g., acceptance, honesty) and their current behaviour (e.g., problematic gambling) is one approach used within a Motivational Interviewing framework. The present study examined the effect of a computerized version of the Values Card Sort task on participants' motivation to change their gambling behaviour. Participants (N=547) were recruited through Amazon's Mechanical Turk crowdsourcing platform. Participants were randomly assigned to complete one of three conditions, designed to develop varying degrees of discrepancy and reflection on their gambling behaviour. All participants were presented with 83 values and descriptions and asked first to sort them as important, very important, or not important, and then to narrow to their top three values. Participants in Condition 1 (control) completed only this task.</p> <p>Participants in Condition 2 were asked follow-up questions (close-ended) about how their gambling involvement fit with selected values. Participants in Condition 3 were asked to elaborate even further (open-ended). Follow-up data were collected 1-month post-task. The poster presentation will present results examining differences in self-reported motivation to engage in gambling-related behaviour change across the three groups. Results from the present research will inform the development and evaluation of brief, computer-based interventions for disordered gamblers.</p>

44	<p>Similar Motives? The Relationships between Drinking and Gambling Behaviours</p>	<p>Jasmine Thomas</p> <p>Liquor and Gaming Authority of Manitoba and Department of Sociology, University of Alberta</p> <p>jthomas@LGAmanitoba.ca</p>	<p>Based on previous exploratory research, this study extends models to confirm whether the motives for drinking and gambling behaviours have a similar conceptual structure in a representative sample of adult Manitobans. Given the high co-morbidity of pathological gambling behaviours and alcohol use disorders, it is reasonable to question if similar intentions are implicated in gambling and alcohol-use behaviours more broadly, or if differing reasons play a role. Scholars examining drinking motives have found that the motivations for gambling follow similar conceptual patterns. Instruments to measure the motives for gambling were developed and validated based on questions examining drinking behaviours and motives. Previous research illustrates the importance of three specific motivational concepts (coping, enhancement and social) that influence drinking and gambling behaviours (Stewart & Zach, 2008; Dechant, 2014; Schellenberg, McGrath and Dechant 2016). This study utilizes these instruments (DMQ-R, GMQ and GMQ-F) to test if similar theoretical understandings of motives for gambling and alcohol use apply to this specific sample of adults.</p>
45	<p>Mindfulness As a Treatment for Problem Gambling</p>	<p>Nigel E. Turner</p> <p>Peter Chen Farah Jindani</p> <p>Centre for Addiction and Mental Health</p> <p>Nigel.Turner@camh.ca</p>	<p>Context: There is little research on the application of mindfulness to individuals with problem gambling issues. This poster presents the results of two studies of mindfulness as a treatment for problem gambling.</p> <p>Method: This exploratory study focused on self-report measures (MAAS, DERS), EEG exploratory data and interview feedback.</p> <p>Results: Initial data suggests that mindfulness interventions may be suitable for changes related to attention, emotion and increased alpha power for problem gamblers. Participant narratives are triangulated with study data demonstrating transformed feelings of self-regulation, coping, self-compassion and social connection.</p> <p>Discussion: Mindfulness as a component of problem gambling treatment, has the potential to improved treatment outcomes.</p>
46	<p>Neural Signals of Decision Making While Moving</p>	<p>Nathan J. Wispinski¹</p> <p>Jennifer K. Bertrand²</p> <p>Anthony Singhal¹</p> <p>Craig S. Chapman²</p> <p>¹ Department of Psychology, University of Alberta</p> <p>² Faculty of Physical Education and Recreation, University of Alberta</p> <p>nwispinski@ualberta.ca</p>	<p>Making a decision, like choosing to bet big or play it safe, takes time. Theories of decision making suggest that during this time, evidence for each choice accumulates in the brain until one of the choices wins out. However, these theories largely ignore that decisions are made through movement (e.g., reaching out and placing your chips on red). Analyzing movement is important because past work from our labs shows how people move reflects how confident they are in their decision, and holds promise for diagnosing disorders of decision making.</p> <p>We recorded electrical activity from the scalp of human volunteers while they made simple decisions about which of two circles were brighter. While we saw brain signals that matched evidence accumulation theories, these signals stopped when participants started moving. This surprising result suggests that decisions are more complex than previously thought.</p> <p>Therefore, we propose an extended theory of decision making. By measuring neural signals, and refining theories, we aim to uncover the fundamental process behind how humans make decisions. These results offer a more detailed model so that interventions for maladaptive decision making, like those seen in individuals affected by problem gambling, can be targeted with greater specificity.</p>

47	Comorbidity in Individuals with Disordered Gambling: A Scoping Review	<p>Igor Yakovenko David C. Hodgins</p> <p>Department of Psychology, University of Calgary</p> <p>iyakoven@ucalgary.ca</p>	<p>Individuals with disordered gambling often report at least one other lifetime psychiatric diagnosis. Despite high prevalence rates of co-morbidity, no comprehensive review of the existing research in this area has been conducted in the last two decades. The goals of this study were to broadly summarize and to review the current literature on the extent, range and nature of disordered gambling co-morbidity. Following an initial search and screening of six databases and a number of grey literature sources, 218 articles were included in the final synthesis and evaluation. The results summarize existing co-morbidity evidence across four areas: prevalence studies, efforts to integrate treatment of disordered gambling and co-morbid disorders, efforts to address etiology of disordered gambling and co-morbidity, and the implications of co-morbidity on disordered gambling outcomes. Literature gaps are identified in each area and specific recommendations are provided for future research. In addition, the extracted data is qualitatively compared to co-morbidity research across other addictive behaviors, noting similarities and fruitful future directions.</p>
48	Human Capital in a Prehistoric Gambling Economy	<p>Gabriel Yanicki</p> <p>Institute of Prairie Archaeology, University of Alberta</p> <p>yanicki@ualberta.ca</p>	<p>At Chournos Springs, a 13th-century AD settlement on the shores of Utah's Great Salt Lake, charred seeds, broken millstones, and pulverized, boiled animal bones show residents' attempts to extract every possible calorie from their wetland home. At the nearby Promontory Caves, big game hunters meanwhile appear to have had so much food that they could simply burn grease-rich bison bones for fuel. The conspicuous display of excess at the caves may have been related to feasting activity, in which the caves' wetlands neighbours took part, accompanied by ceremony and, on a scale unprecedented in the archaeological record, gambling.</p> <p>With such disparity in resource wealth, it is reasonable to question what balance of stakes could be offered in intertribal wagers. The answer may lie in economies of scale.</p> <p>Precarious wetlands could swiftly be overexploited even by small groups. Communal hunting, meanwhile, could yield tremendous surpluses, but capture and processing required considerable human resources. If, on one hand, hunters could bet with excess food, the most valuable commodity gamblers experiencing food shortage had to offer was themselves. Debt slavery, with resulting movement of people between groups, was a transaction that could have had enduring effects on archaeologically visible processes of culture change.</p>