



GAMBLING RESEARCH REVEALS

Cognitive distortions and skill assessment among poker players: An interview with Terri-Lynn MacKay

Terri-Lynn MacKay is a PhD Candidate in Clinical Psychology at the University of Calgary. Ms. MacKay and co-investigators Dr. David Hodgins (Department of Psychology, University of Calgary) and Dr. Michael Bowling (Department of Computing Science, University of Alberta) received an Institute-funded grant to support their research investigation entitled, "Calling Their Bluff: Investigating the Accuracy of Skill Assessment Among Poker Players" (#S23). She provided the following answers to questions related to their in-progress investigation:

Q: Why study poker?

In the 21st century the game of poker has experienced unprecedented growth and popularity, largely because of the advent of online poker and televised poker championships. The major distinction between poker and many other forms of gambling is that poker involves an element of skill. As such, many people assert that they can make a profit playing poker¹. The observation that some players retain an obvious disregard for the luck component in poker indicates that there may be erroneous and false beliefs that serve to preserve an irrational sense of control over gambling situations. Notwithstanding this fact, researching the poker gambling environment necessitates consideration that poker can be profitable. Without first understanding whether some poker players actually influence outcomes based on their game play assumptions, researchers cannot yet make conclusions about the relationship between cognitions and behaviour.

¹ A recent Ontario Gambling Prevalence study found that one in 10 Ontarians agreed with the statement: "Playing poker is a good way to earn extra money." Poker players were also more likely to agree with the statement when compared to non-poker players (20% vs. 5%). Forty two percent of online poker players agreed that poker was a good way to make money.

The Alberta Gaming Research Institute is a consortium of the Universities of Alberta, Calgary, and Lethbridge. Its primary purpose is to support and promote research into gaming and gambling in the province.*

OUR MISSION

To significantly improve Albertans' knowledge of how gambling affects society



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Q: Why did you decide to investigate cognitive distortions among poker players?

The primary focus of my doctoral research has been to investigate demographic, cognitive, psychological, dispositional and medium-related factors that could differentiate online and land-based gamblers. In the first part of that line of study, I found online gamblers were more likely to have cognitive distortions and that their primary gambling activity was poker. We also know from previously published studies that online gamblers are more likely to be problem gamblers. When I subsequently examined my data for problem gambling and cognitive distortions, poker players were significantly elevating both scores.

It is my assertion that, when investigating gambling at poker, it must be recognized that it can be a profitable activity for some players. We cannot conclude that these players are making erroneous assumptions without considering that these assumptions may indeed be accurate. Thus, how do we actually determine whether someone is truly a skilled player or one who is simply distorting aspects of play?

Rather serendipitously, I met Dr. Michael Bowling at the Alberta Gaming Research Institute's conference on Internet Gambling in 2009. Dr. Bowling heads the University of Alberta Computer Poker Research Group and has been involved in the development of a simulated poker program that has been able to beat the world's best poker players². In addition, his program has the capacity to tease out luck-based and skill-based components of play to give an estimate of a participant's true skill. It provides a computational analysis of how much a player should expect to win or lose relative to an automated computer opponent. This analysis provides a far more accurate estimate of a poker player's skill than the amount of money that was actually won or lost.

After some conversation, [Dr. Bowling and I] decided to form our unique research collaboration and apply for an Institute research grant. Studies like ours that examine actual play are uncommon in the gambling literature as the majority of research methodologies use self or collateral reports. Collaborations between researchers in the computer science area with those interested in gambling from a psychological perspective has allowed for a unique opportunity to directly study aspects of game play in poker.

Q: What kinds of research questions does your investigation seek to answer?

In our current research investigation, study participants played 75 hands of Texas Hold'em poker against a computer opponent. They were then asked to rate how well they *thought* they had played to determine a player's accuracy of skill estimation. Using this data, we will be able to answer questions such as: Does a skillful player who loses money estimate correctly they were actually playing well but were unlucky? Does an unskilled player who wins money estimate correctly they were playing poorly and were lucky?

Our study also sought to determine which specific variables influenced the accuracy of a poker player's self-assessment to provide insight into questions such as: Are players with more experience better at assessing their performance? Is there a gender difference in skill assessment? Do problem gamblers have less accuracy in skill estimation? Study participants were also required to complete two measures examining gambling-related cognitive distortions in general to determine how these distortions affect skill estimation. Though data analysis has not yet occurred, we have plans to assess level of cognitive distortion (i.e., actual vs. perceived skill) by problem gambling score.

² See article, "Poker and artificial intelligence" in the April / May 2009 issue of the Gambling Research Reveals newsletter.

From a public health perspective, legalization and promotion of new gambling forms like Internet poker should be based in factual information about the potential harmful effects.

Q: A tool to capture poker players' actual behaviour was developed in collaboration with the University of Alberta Computer Poker Research Group. How might researchers use it?

In the past, much poker research focused on long-run aggregate data, which is sensible given the high variances involved in the game. Not captured in an aggregate cumulative analysis however, are the nuances that occur in short time frames such as “tilting” behaviour³, timing of play, or attention versus disinterest. For example, in order to answer the question of whether problem gamblers are more likely than non-problem gamblers to go on tilt or be on tilt for a longer period of time, one requires a decision-by-decision analysis. This necessitates having a tool that can capture player behaviour while they engage in the activity itself. Without a decision-by-decision collection of data and a method for separating poor play from unlucky play, these kinds of questions could never be studied.

Q: Does researching poker players have implications for problem gambler treatment or prevention?

Poker presents additional challenges to researchers because, unlike slot machines and VLTs, the outcomes are not entirely random. The perception of glamour and financial success through the media coupled with the experience and skill component has also increased the complexity of developing responsible gambling messages. Jon Kelly, CEO of the Ontario Problem Gambling Research Centre, noted that, “the challenge lies in creating clear and useful messages that address the unique characteristics of games like poker, which contain an element of skill.” From a public health perspective, legalization and promotion of new gambling forms like Internet poker should be based in factual information about the potential harmful effects. It is incumbent upon us as researchers to investigate the ways in which novel gambling opportunities influence gambling severity so we can develop appropriate responsible gambling initiatives.

The next logical phase of our future research is to have study participants receive feedback during game play about their actual performance and to determine whether feedback ultimately changes subsequent play. Additionally, it would be interesting to explore what kinds of messages are most effective in influencing player behaviour.

³ Tilting refers to the phenomenon of a player dealing poorly with frustration that comes from bad luck.



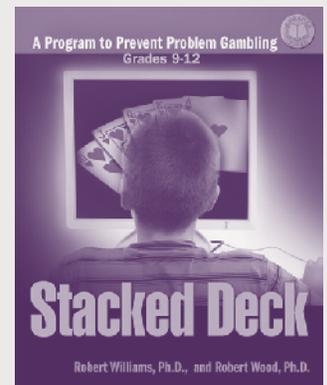
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Masood Zangeneh, Editor-in-Chief of International Journal of Mental Health and Addiction (IJMA) has generously granted written permission for the Institute Library to host hard-to-find articles from Volumes 1-3 (2003-2005) of this publication. Articles are hosted via the Institute’s Research Repository and are accessible from www.abgaminginstitute.ualberta.ca/ecomunity.cfm

Problem Gambling Prevention Program for Grades 9-12

The evidence-based gambling prevention curriculum “Stacked Deck: A Program to Prevent Problem Gambling” (2010) by Dr. Robert Williams and Dr. Robert Wood is now available for order from Hazelden. Stacked Deck uses math, decision-making, and problem-solving skills to prevent the onset of gambling issues in youth. The program incorporates findings from the Institute-funded research investigation “Prevention of Problem Gambling: A School-Based Intervention” (#29). Publication details available from www.hazelden.org



First Nations Gambling in Québec

A recently published report entitled “Gambling Problems in First Nations and Inuit Communities of Québec: A Brief Status Report” (2010, February) provides a useful overview of the data on gambling habits and problems in First Nations and Inuit communities of Québec. It was authored by Élisabeth Papineau and published by Institut national de santé publique du Québec (INSPQ). Available online from www.inspq.qc.ca/pdf/publications/1072_ProblJeuPremNationsVillagesInuits_VA.pdf

Institute Brochure: “A Decade of Achievement”

Chronological highlights of the Alberta Gaming Research Institute’s activities since its inception in 1999 are included in the brochure *A Decade of Achievement*. This publication was first distributed in April, 2010 at the Institute’s 2010 Conference and is available online from www.abgaminginstitute.ualberta.ca/pdfs/AGRI_Milestone_Brochure_2010.pdf

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(vickii.williams@ualberta.ca)

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- University of Alberta:
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INSTITUTE LIBRARIAN

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Your comments and queries are welcome either by E-MAIL: abgaming@ualberta.ca PHONE: 780.492.2856

Terri-Lynn MacKay and Rhys Stevens	Writers
Vickii Williams	Editor
Epigrafix	Design/Layout
Media queries	780.492.2856

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