

GAMBLING RESEARCH

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Addiction Substitution, Behavioural Change, Social Casino Gambling and Mechanical Turk: An Interview with Andrew Kim About His Diverse Gambling Research Interests



Can you tell us about your academic background and what led to you pursuing a Ph.D. at the University of Calgary?

I'm currently a Ph.D. Candidate in Clinical Psychology at the University of Calgary under the supervision of Dr. David Hodgins. Before coming to Calgary, I completed my Master's of Experimental Psychology at Carleton University in Ottawa with Dr. Michael Wohl. My thesis examined novel ways to increase readiness to change among disordered gamblers. Specifically, I examined self-discontinuity (i.e., the notion that the self has undergone fundamental changes as a result of gambling) and nostalgia as facilitators of behavioural change. Prior to that, I completed a post-graduate certificate in Addiction and Mental Health at Durham College and worked in the Toronto region as an Addictions Counsellor specializing in gambling disorders.

What is the focus of your Ph.D. research? How might your findings contribute to existing research in that area?

My research focuses on addiction substitution. Addiction substitution occurs when an individual who quits one addictive behaviour later

The primary aim of the Alberta Gambling Research Institute, a consortium of the Universities of Alberta, Calgary, and Lethbridge, is to support academic research related to gambling.

MISSION

To facilitate evidence-based broad research that informs gambling public policy and educates Albertans and the wider audience about the effects of gambling.

starts to engage in another one. For example, an individual who quits gambling may then substitute to alcohol. This might lead the person to experience negative consequences as a result of their drinking. Unfortunately, research into addiction substitution is minimal, and unsurprisingly it is poorly understood at both practical and theoretical levels. I'm currently a member of a research team in the midst of completing a systematic review of addiction substitution. To date, we've found few articles in the addictions literature relating to addiction substitution involving disordered gambling. My Ph.D. dissertation utilizes a qualitative-quantitative mixed-method approach to understand the process of addiction substitution. It also examines the differentiating characteristics of gamblers who substitute addictions and those who do not. My hope is that by further understanding this research area, it will be possible to develop more effective treatment, recovery, and prevention initiatives.

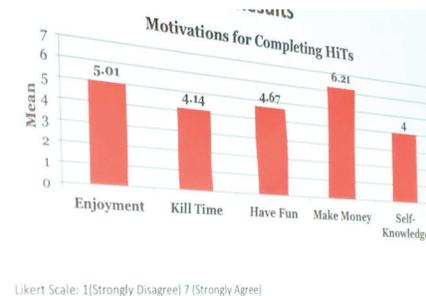
What other lines of gambling research are of particular interest to you and why?

I think it's easier to answer what I am not interested in! Broadly, however, I have two other main lines of research interest. The first continues the work I started at Carleton using novel constructs to increase readiness to change as well as actual behavioural change. Recently, Dr. Wohl, Melissa Salmon, Dr. Diane Santesso, and I extended my M.A. thesis and found that self-discontinuity and nostalgia increases readiness to change and also appears to increase behavioural change... even overcoming known barriers to change such as stigma! I first became interested in increasing behavioural change after learning that the concept of continued engagement in a behaviour, despite experiencing continued harms, is one of the hallmarks of addiction. I realized that it was particularly important to assess methods being used to encourage change in those individuals living with an addiction.

A second line of research I'm working on examines the relationship between social casino games (i.e., free gambling-like games played online via Facebook) and future gambling behaviour. Social casino games are interesting as they're ubiquitous on social media sites and it's reported that they generate billions of dollars in revenue despite being free-to-play. My preliminary investigations have found that there is potential for social casino games to act as a gateway

to actual online casino gambling participation. Free social casino games may, however, be beneficial for the cohort of disordered gamblers who use them as a substitute for wagering real money at online casino sites.

Thirdly, I'm also involved in assessing crowdsourcing platforms like Amazon's Mechanical Turk and CrowdFlower for the recruitment of addiction populations. I, along with Dr. Hodgins and Dr. Daniel McGrath, intend to further our investigations that test the utility of these tools for collecting neuropsychological data.



You've published¹ and presented² research findings on using the Internet to recruit and collect data from gamblers. Are there existing challenges associated with non-Internet data collection from gamblers?

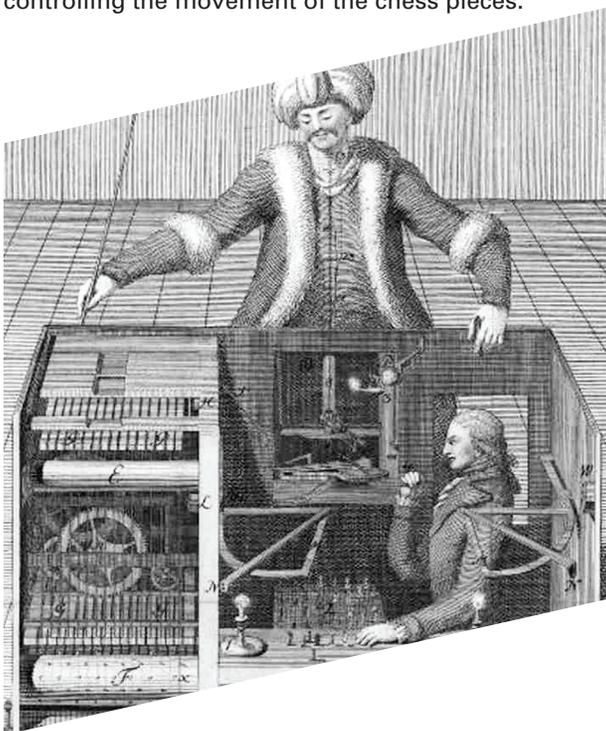
The short answer is yes, there are tremendous challenges in recruiting gamblers using traditional in-person or telephone methods. In fact, gamblers are known to be a difficult population to recruit. It isn't unusual to take several years to find 50 to 100 disordered gambler participants. Our best successes have involved recruitment of gamblers in casinos though permission from the provincial lottery commission is required. Given that each Canadian

*Andrew Kim
presenting
at the 16th
International
Conference on
Gambling & Risk
Taking, Las Vegas,
June, 2016.*

province has different regulations for the provision of legalized gambling, this can also pose a challenge. Traditional recruitment is also expensive and our past efforts using newspaper advertisements, flyers, and Google AdWords met with mixed success.

One particular tool you've examined for Internet data collection has been Amazon's Mechanical Turk. For those unfamiliar with it, what exactly is it, and what is its purpose? How did you get the idea to incorporate Mechanical Turk into your own research investigations?

Mechanical Turk, or MTurk for short, is a crowdsourcing platform created by Amazon Web Services in 2005. It's an online marketplace which provides a way for individuals, businesses, and researchers to post "Human Intelligence Tasks" – commonly known as HiTs – which people can choose to accept and complete. The name Mechanical Turk originates from an actual 18th century European device that was touted as being an automated chess-playing machine able to defeat human players. Unbeknownst to suspecting opponents, a chess master was actually hiding inside the machine and controlling the movement of the chess pieces.



By choosing the name Mechanical Turk, Amazon is implying that the speed, cost, and efficiency of the work being completed is computer-like even though humans are actually completing these tasks. As an example of MTurk's potential in recruiting participants, one study we ran on MTurk consisted of recruiting 421 gamblers. We were able to collect the full sample in under 12 hours at a total cost of US \$560. Furthermore, we were able to obtain usable data from a very respectable 414 of 421 total participants!

What motivates individuals to sign up and participate in surveys and tasks offered via Mechanical Turk? Who are these people?

A seminal study by Burhmester³ and colleagues, published in 2011, found that MTurk participants – called MTurkers – were primarily intrinsically motivated. That is, they completed MTurk surveys and tasks for enjoyment. More recent studies, including my own co-authored with Dr. Hodgins, have found that MTurkers are primarily motivated to complete surveys to make money. However, MTurkers being financially motivated might, in fact, be a good thing. MTurk puts in safeguards to ensure that participants are held accountable for doing high-quality work. Specifically, completed tasks can be rejected if of poor quality. If completed work is frequently rejected, MTurkers are limited in their ability to access better-paid and higher-quality tasks in the future.

Interestingly, I'm frequently asked the question 'Who are these people?' I also wanted to know this when I first began using MTurk. Fortunately, there is a growing academic literature on the demographics of MTurkers⁴. It's important to note that, although there is great diversity of participants on MTurk, it is not a representative sample of U.S. residents. In comparison to the U.S. population as a whole, MTurk participants tend to be young, female, well-educated, less likely to live alone, and less religious. MTurkers are more likely to report lower personal incomes and are more likely to be under- or un-employed. That said, the majority of MTurk workers report being employed full-time. Lastly, Asian and European Americans are overrepresented while Hispanic and African Americans are underrepresented.

Critics of Mechanical Turk and similar crowdsourcing tools have likened the tasks on offer as being “piecework for the information age”⁵ due to extremely low rates of remuneration. Do investigators encounter ethics concerns when using these tools for research studies?

My colleagues and I have not had problems receiving ethics approval for investigation utilizing MTurk. I think this is, in part, due to us providing a far better rate of remuneration than the typical MTurk rate which corresponds to \$1.38/hour. I should, however, caution against using \$1.38/hour as a remuneration guideline regardless of whether it would be passed by ethics boards. There is real potential for MTurkers to be exploited and unfairly compensated. MTurkers have recently spoken out on the issue and have proposed that \$0.10 cents/minute (\$6.00/hour) is an ethical rate of compensation. Although MTurk is a marketplace and MTurkers have the ability to reject or accept tasks as they see fit, I recommend researchers to use \$0.10 cents/minute to fairly compensate participants.

What is it about Mechanical Turk that makes it potentially relevant to gambling research investigations? Why might it be advantageous to use an MTurk-sourced sample of gamblers over a traditionally-sourced one?

The biggest advantage of using MTurk for gambling research is the base rate of gamblers on MTurk. As mentioned, gamblers are a very difficult population to recruit and MTurk makes this process more efficient. Furthermore, there are sufficiently large numbers of both gamblers and disordered gamblers in the MTurk pool, which provides researchers the ability to collect sample sizes with adequate statistical power. There is also a great diversity in gamblers including those with comorbid substance use issues which makes it possible to conduct some very interesting research studies! In addition, data can be collected cost-effectively in a short period of time in comparison to traditional recruitment methods. Amazon also takes care of participant payments via online completion codes so researchers themselves don't need to do this and thereby risk

collecting personal identifying information. Lastly, psychology research has been criticized for relying on W.E.I.R.D samples (see Definitions) to derive most theories of human behaviour. Although MTurk cannot provide a representative sample of the population, samples collected using the tool are much more diverse than undergraduate populations. Thus, it provides an avenue to recruit a broad array of community participants to assess whether findings are generalizable beyond university students.



Your in press article assesses whether data obtained from substance-use participants (including gamblers) via Mechanical Turk are reliable and valid. What did you find? Do you think the data obtained are comparable to other methods of data collection? Do you have cautions for researchers?

We found that the data obtained from gamblers and drinkers on MTurk were of high quality. That is, the data demonstrated excellent reliability and validity, including test-retest reliability. However, the data for cannabis users was less reliable, so I would exercise

caution when recruiting cannabis populations from MTurk. We also found that the participants reported having been attentive and responding honestly and accurately. In fact, only 16.12% of participants' data were deemed suspect based on overt and subtle measures of validity (e.g., unusually fast completion times). We also compared the magnitude of our reliability and validity results to those in the existing literature recruited through traditional samples and found that they were equal if not greater for gamblers and drinkers. For cannabis populations, the magnitude was lower than what has traditionally been found.

While I think MTurk has immense benefits for gambling and addiction research, it's not without its limitations. Here are cautions to be aware of when using MTurk:

1. *Never equate MTurk samples with representative samples.* An MTurk sample is more accurately described as a community convenience sample. MTurkers are self-selected to sign up for MTurk and to self-select into your study.
2. *Avoid the temptation to pay participants less than \$0.10 cents per minute.* While it's possible to collect quality data at a rate of \$0.05 cents per minute, I think MTurkers should be paid ethical rates and psychologists should lead by example.
3. *Include additional attention checks (i.e., fake items like "please leave this item blank") in surveys to ensure collection of high quality data.* Inattention when completing online studies is always a concern even though academic research suggests that MTurkers are indeed attentive.
4. *Be aware that MTurkers are not naïve to well-known psychological manipulations.* Non-naïveté can attenuate effect sizes, so it is important to ensure MTurkers have not completed similar studies or related studies that you are conducting. Workers who have completed your previous studies can easily be excluded.
5. *Use randomized completion codes unique to individuals to reimburse MTurkers.* It is not unheard of for MTurkers to share generic non-random completion codes on MTurk-specific forums. In fact, I had this happened to me once!

DEF-I-NI-TIONS

Amazon Mechanical Turk (MTurk) – a crowdsourcing marketplace on the Internet that provides opportunities for work performing human intelligence tasks.

Approval Rating on MTurk – a rating system for MTurkers based on the percentage of completed human intelligence tasks submitted that were approved for payment by a requestor. It is used by requestors to measure the ability of workers to complete tasks accurately.

Completion Codes – specific confirmation codes received by MTurkers after completion of HiTs which they use to obtain payment for completion of work; completion codes should be randomly-generated and unique to each participant (e.g., a randomized 10-digit number).

Convenience Sample – data collection from population members who are conveniently available to participate in a study; these samples may not represent the population as a whole.

Crowdsourcing – enlisting the paid or unpaid services of people to provide information or input into a particular task via the Internet.

Human Intelligence Tasks (HiTs) – work offered by requestors to MTurkers for completion; normally consisting of tasks (e.g., research surveys) that are not suitable to be undertaken by computers.

Mechanical Turk – an 18th-century chess-playing machine also known as the Automaton Chess Player. Unbeknownst to observers, the Turk was being operated from within by a human chess master.

MTurkers – a term used to describe workers who select and complete available human intelligence tasks for monetary payments on the Amazon Mechanical Turk marketplace.

Reliability – a check to ensure that research questionnaires produce consistent results when applied to the same population over time.

Requestors – individuals, businesses or researchers who post HiTs to be completed by MTurkers.

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What's next for your program of gambling research?

I plan on continuing my line of research on increasing readiness to change, assessing the influence of social casino games on gambling behaviours using objective measures, and exploring addiction substitution. I'm also excited to push the boundaries of using MTurk to move beyond simple surveys. For instance, I'd like to assess whether neuropsychological data can be successfully collected and determine if online treatment interventions can be used with MTurk participants. Furthermore, my research is starting to move towards understanding transdiagnostic factors (e.g., emotional dysregulation, impulsivity) that contribute to addictive disorders (including gambling) and moderators that predict how the same factors express as an alcohol use disorder or gambling disorder. As well, I'll be continuing my work with Dr. Hermano Tavares in Brazil which involves expanding the transdiagnostic factors to examine impulse control disorders and addictive disorders that share etiological, clinical, and conceptual similarities. Ideally, the results of this research will inform our understanding of the nosological boundaries between impulse control disorders and addictions.

1 Kim, H. S., & Hodgins, D. C. (in press). Reliability and validity of data obtained from alcohol, cannabis, and gambling populations on Amazon's Mechanical Turk. *Psychology of Addictive Behaviors*.

Self-Report – a method of gathering data from individuals using a survey or questionnaire in which respondents answer themselves.

Validity – a check to ensure that a study measures or examines what it claims to measure or examine.

W.E.I.R.D. Population Sample – a group of research participants who are overwhelmingly Western, Educated, and from Industrialized, Rich, and Democratic countries; typically college students from Canada and the United States.

- 2 CCGR Workshop on Digital Engagement (2016, April 7); International Conference on Gambling & Risk Taking (2016, June 9).
- 3 Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3-5. <http://dx.doi.org/10.1177/1745691610393980>
- 4 MTurk participants are usually from the United States and India.
- 5 There's a Problem With 'Crowd Labor' (<https://www.thenation.com/article/mechanical-turk-gigifies-the-knowledge-economy/>)

The Growth of eSports and Its Relevance to Gambling by Rhys Stevens

What exactly are eSports?

If you haven't heard about eSports you're most likely not part of the millennial generation nor are you likely to be a regular video game player (i.e., "gamer"). To get up to speed on eSports, it is key to understand that eSports is an "umbrella term" used to describe organized competitions between professional video gamers (Cooke, 2016). These eSports gamers compete for prize money individually or as part of a team. Matches are typically held before live audiences which also attract significant viewership from spectators tuning in online. The

"I expect eSports to surpass Ice Hockey, in terms of bet count, by the end of 2016."

– Head of Trading, Pinnacle Sports

most popular games at eSport competitions include League of Legends (LoL), Counter Strike: Global Offensive (CS:GO) and Defense of the Ancients 2 (Dota 2). Each of these games allow individuals and teams to distinguish themselves from competitors with the skillfulness of their gameplay.



How Popular are eSports? Who Watches Events?

The popularity of eSports has been growing by leaps and bounds over the past several years. An analysis conducted by the market research firm Newzoo (Souza, 2015) revealed that typical American eSports fans are male (70%), between 21 and 35 years old (55%), and employed full-time (>53%). In terms of dollar figures, the worldwide eSports industry in 2015 was estimated at between US \$325 million and US \$748 million which represents growth of 67.5% from the previous year (Arbarbanel & Fielder, 2016). As for viewership, live attendance at the October 2015 League of Legends World Championship in Berlin was 13,000 people, and an additional 36 million unique viewers live-streamed the finals. Closer to home, August 2016 saw the League of Legends North American Championship attract 15,000 attendees to the Air Canada Centre in Toronto (McNeil, 2016).

Can Gamblers Bet on eSports?

Yes, wagering on eSports matches does occur, and there is already a significant market for cash gambling on these events. As with traditional “stick and ball” sports, there are online sportsbook

websites¹ that allow gamblers to bet real money on game outcomes and specific in-game events during match play. Two of the most popular and recognizable eSports sportsbooks are Unikrn (eSports-only sportsbook that has received investments from Mark Cuban & Ashton Kutcher)

“Gaming is what every traditional sports league is desperate to become: young, global, digital and increasingly diverse.”

– Ben Casselman (2015)

and Pinnacle (a private online gambling company based in Curaçao). Two other cash-gambling formats for eSports betting are Fantasy eSports (akin to traditional fantasy sports) and Head-to-Head Contests between opponents who put up their own money

as a prize for the winner. It has been estimated that the cash-gambling market size for eSports in 2016 will total US \$594 million (Grove, 2016).

What Other Items of Value Are Being Used to Gamble on eSports?

One of the differentiators between gambling on eSports versus traditional sports has been for wagers to primarily be made using items known as “skins.” Skins are virtual items that can be used and valued by gamers while playing video games. A skin, for example, might provide a player with the ability to change the colour of a gun in the game Counter-Strike. Game developers don’t allow skins to be



New to League of Legends? Learn the basics with this video about the roles and abilities of the champions.

eSport Game: League of Legends

“If I were to describe League of Legends to my mom I’d say it’s like Chess meets UFC and Football.”

– **Rahul Sood, CEO, Unikrn**

League of Legends (LoL) is a team-oriented online strategy game created by Riot Games and first released in 2009. It is played monthly by 67 million players and at peak times attracts over 7.5 million people playing at the same time.

Gameplay involves players selecting their particular “champion” from a roster of characters with unique abilities. They then join a team and guide their champions around an online battle arena to accomplish specific objectives. The most significant of which involves destroying an entity known as the “Nexus” which is controlled by the enemy team. Matches typically last between 20 and 60 minutes.

Top LoL players are frequently recruited to join sponsored teams which compete for significant monetary prizes in eSports matches, tournaments and leagues.

directly exchanged for cash but secondary “skins gambling” (also known as game-mediated betting) markets have been created that essentially allow allowed players to convert skins to cash. Until a crackdown on the transferability of skins between players in July, 2016, the value of items wagered on eSports skins betting was expected to have been US \$7.4-billion in 2016. Another type of virtual currency for betting on eSports has been developed by Unikrn and has been named Unikoin. Unikoin are an alternative to cash betting and can be earned by performing tasks and redeemed for prizes.

What Might Be Next for eSports Gambling?

Anecdotal evidence (e.g., Internet search interest, additional leagues and events, increased coverage by major media companies like ESPN, etc.) suggests that eSports viewership and interest in eSports betting is likely to continue its growth trajectory. Interestingly, the land-based casino industry has also taken notice of the eSports phenomenon and the Downtown Grand casino gambling property in Las Vegas, Nevada, has recently integrated it within their casino floor. As the eSports universe continues to grow and evolve, it’s also anticipated that regulators will be taking a keen interest in the somewhat murky legal and regulatory questions² that surround the fairly new eSports gambling industry.

1 Loto-Québec launched its eSports betting offerings in August, 2016. See <http://www.esportsbettingreport.com/loto-quebec-esports-betting-service/>

2 For example, Grove (2016) posed the following four questions related to regulatory and legal uncertainty:

- (1) Is skin gambling legally the same as cash gambling?
- (2) Will eSports betting be regulated like sports betting?
- (3) What about minors as consumers and players?
- (4) Where’s the enforcement?

FOR MORE INFORMATION:

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Important Dates

July 1, 2016

Dr. Fiona Nicoll appointed as Institute Chair in Gambling Policy @ the Department of Political Science, University of Alberta.

November 15, 2016

Institute's 2015-16 Annual Report to be published.

April 6-8, 2017

Institute Conference 2017 to take place at The Banff Centre, Banff, Alberta.

Mark your calendars!

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