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Special Issue

Futures of Gambling Studies: Showcasing Early Career Research

Guest Editors: Eva Monson and Jennifer Reynolds



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EDITORIAL

Early Career Research in the Gambling Field: A Reflection on Existing Challenges and Opportunities for Change

Eva Monson, Jennifer Reynolds

We are incredibly proud to present this special issue on early career research for *Critical Gambling Studies*. As two early career researchers (ECRs) in the field, leading this project has been an honour and an incredibly rewarding experience. A first of its kind, we believe this special issue is an important contribution to gambling literature. With this in mind, the views expressed in this editorial are our own and are by no means meant to be representative of all ECRs in the gambling field. However, our perspectives have not only been shaped by personal experience but also reflect years of conversation with our peers, many of whom feel conflicted, overlooked, expendable, and isolated (now more than ever), and who are reaching their breaking point.

The Broader Context to ECR Challenges

Across all fields, ECRs struggle. Indeed, they show a higher level of emotional exhaustion than their more senior colleagues (Gonzalez & Bernard, 2006; Watts & Robertson, 2011). Constant expectation of high productivity and performance (e.g., publish or perish culture) coupled with low occupational job security for both research and teaching greatly contribute to early career burnout and excessive attrition of talented ECRs (Salimzadeh et al., 2017; Watts & Robertson, 2011). Moreover, Nir & Zilberstein-Levy (2006) argue that these pressures can lead to research that lacks originality and to a decreased willingness to use innovative research methods.

ECRs in Gambling Studies

The field of gambling studies is not immune to these problems. Indeed, since being appointed as guest editors for this special issue, one of us has left the gambling field to secure more stable employment. Situations like this are, unfortunately, all too common, with ECRs leaving the field for a variety of reasons. As in many fields, resources and opportunities are spread thin, but early career *gambling* scholars struggle with

additional complexities, such as securing ethically sourced and sustainable funding, and navigating a field rife with fierce and sometimes unpleasant divisions (e.g., disputes about the best way to measure gambling-related problems). Early career scholars must also survive in an academic field where gambling operators have significant and sometimes direct influence over funding decisions and often control access to data and venues for data collection. The role of industry has resulted in claims that the field of gambling studies has become too 'safe': rewarding conformity and marginalizing critical voices (Cassidy et al., 2013; Cassidy, 2014; Young & Markham, 2015). This reality is 'felt most acutely by early career researchers' (Cassidy et al., 2013, p. 346).

With this in mind, we would be remiss not to specifically acknowledge a major issue within the field concerning problematic power dynamics that, as recent events have demonstrated (Nicoll & Akçayır, 2020), have yet to be duly addressed. Success and career trajectory—from getting a job, to funding, to publishing—are often shaped, if not dictated, by a select few senior members of the community, which leaves ECRs vulnerable to problematic and potentially predatory relationships. As ECRs in this field, we could easily add some of our experiences to the existing examples of egregious power abuses in gambling studies. Unfortunately, this editorial will not further rock the boat because, in order to speak truth to power in this situation, we would knowingly be putting ourselves at risk, given the precarity of the positions we hold and our status within the field. Indeed, the hierarchical nature of academia, amplified by the insular and politically charged context of the gambling field, make it almost impossible to be critical without some form of repercussion. Since we do not feel safe or comfortable writing about our specific experiences, we will focus on what can be done to create a better future for the field by highlighting opportunities to support and promote ECRs. We offer these thoughts not as a critique of

specific people or organizations, but rather as a call to action for the field as a whole.

A Call to Action

In their recent blog post for *Critical Gambling Studies*, Nicoll and Akçayır (2020) proposed specific strategies to disrupt existing ‘hierarchical systems’ that have proven problematic. Their strategies include moving away from problematic, hierarchically organized, group research projects that privilege already powerful voices; cultivating space for sole-authored publications, as well as genuine interdisciplinary collaboration; and supporting ‘more independent fora for early career researchers.’ We would like to build on these ideas and provide specific, tangible suggestions that, if implemented, could greatly improve existing power dynamics: (1) Promotion of and advocacy for ECRs and their work; (2) Mentorship; and (3) Creating dedicated spaces for ECR collaboration and community building.

Promotion and Advocacy

While change within the field might have to be primarily driven by ECRs, it will be greatly accelerated with the support of more established researchers. Recognition of the existing power imbalance is essential, and senior researchers can advocate alongside ECRs by speaking out and pushing back against the status quo to improve conditions for the next generation of gambling scholars.

Researchers in more stable positions within the field (e.g., tenured professors) have an opportunity to support, uplift, and make space for ECRs. Beyond reading, disseminating, and citing their work, and inviting them to present as keynote speakers and expert panelists, promotion can mean involving them in grant review committees as well as editorial and conference boards. Including ECRs in these positions of relative prestige and power not only provides them with insights into how decisions are made, but it also demonstrates respect for their expertise. Ensuring representation also normalizes their participation in the field’s decision-making process. Publishing is imperative for ECRs and editorial leadership positions are incredibly rare and that is why opportunities like this special issue put forth by *Critical Gambling Studies* are invaluable moving forward.

Mentorship

Good mentors, who are mindful of power dynamics and who find ways to subvert the hierarchical nature of academic relationships, make an incredible difference in the lives of their mentees. We have both been incredibly privileged to have mentors who were conscious of the legacy that they leave behind; not only in terms of research output, but in terms of what they

have done to nurture the next generation of emerging scholars. They have gone out of their way to create spaces where ECRs feel secure and valued, and, as a result, have been able to develop critical thinking capacities and take risks that might not otherwise be possible. Mentors have fought on our behalf when the field was unjust and helped us navigate the politically charged minefield that is gambling studies. Some mentors have even shared their own varied experiences and struggles; this level of transparency both humanizes them and has allowed us to learn from their past mistakes. In the long run, we feel this type of mentorship will lead to more epistemological and methodological diversity, and cultivate openness to new paradigms and approaches to gambling research.

Creating Dedicated Spaces for ECRs

Nicoll and Akçayır’s (2020) blog demonstrated evidence that: ‘success in gambling studies requires very strong networks of collaborators.’ In 2017, through multiple conversations with ECRs, it became apparent to us that, while there existed many traditional avenues to network, such as attending conferences and through mentors, there lacked specific opportunities for ECRs to build collaborative relationships with their peers. In response, we created the Research And Networking for Gambling Early-career Scholars (RANGES) community with the aim of fostering the interaction, capacity, and growth of early career scholars in gambling studies. Created by ECRs for ECRs, RANGES aims to bring together individuals from different disciplines (e.g., gambling/gaming studies), conceptual/methodological backgrounds, and institutions to promote innovative methodological approaches and to adopt a broad and interdisciplinary vision for the future of gambling studies.

As a part of the RANGES mandate, we secured funding for and organized an inaugural international conference that took place in September 2019 at the Université de Sherbrooke in Quebec, Canada. The conference was a success. It hosted over 60 participants from six countries (Australia, Canada, France, Germany, New Zealand, and United Kingdom). One of the major achievements of our conference was the deliberate rejection of typical power dynamics that are so often embedded within traditional academic conferences, including the creation of dedicated spaces for ECRs to openly express themselves among their peers. This allowed for a level of openness in our discussions that we think surprised us all, and it facilitated the creation of lasting, genuine, high-quality collaborative relationships. More information about the organization of this conference and its specific goal of creating dedicated spaces for ECRs can be found in a forthcoming blog post for *Critical Gambling Studies*¹.

¹ *Critical Gambling Studies Blogs* can be accessed here: <https://criticalgamblingstudies.blogspot.com/>

Integrated within the planning of the RANGES conference was a call for papers by ECRs in the gambling field. Those papers now make up this special issue. Furthermore, as a direct result of discussions that took place at our conference, others have developed additional ECR networks. The growth of these types of networks will greatly increase opportunities for lateral collaboration among ECRs, which is essential for the future of gambling studies.

Conclusion

In view of the issues identified above, this editorial and special issue signify a step in the right direction for the broader field of gambling studies. If these suggestions are acted upon, we can create a better future for the next generation of ECRs and potentially slow the exodus of talented researchers from the gambling field. Yet, while we have highlighted important actions we can take at the individual level, we understand that there remain systemic issues that will require a broader commitment to change from the field as a whole.

Article Summaries

The articles in this special issue of *Critical Gambling Studies* clearly point to a diverse set of topics and cross-cutting themes of importance to ECRs in the gambling field. The definition of 'critical' was broadened for the purposes of inclusivity, and to showcase and promote a variety of ECR work, epistemologies, and methodologies.

The first paper in this special issue, 'A Critical Analysis of Interventions for Women Harmed by Others' Gambling' (Palmer du Preez et al.), examines the underrepresented topic of family members and others who are affected by gambling harm. Using a feminist post-structuralist lens, the study provides insight into how women family members and affected others position themselves and their support needs in relation to gambling harm and recovery. Findings highlight how powerful constructs, practices, and implied values alienate women from gambling support services. The article argues that women and families affected by gambling harm require support that includes advocacy, community development, and services that take a more client-led and gender-aware approach.

'The Musings of "Evil Bastards": Perspectives from Social Casino Game Professionals' (Reynolds) examines a dimension of social casino games that has been largely unexplored in the existing literature: the experiences of the game professionals who design and develop the games. The convergence between gambling and gaming has important implications, not only for players, but also for the professionals who create these products. The results highlight a very real ethical struggle felt by social game professionals as a result of the dark design patterns underlying these games. The author shows the need for future research

to examine how game design education addresses the convergence of gambling and gaming.

'Patterns of Disciplinary Involvement and Academic Collaboration in Gambling Research: A Co-Citation Analysis' (Akçayır et al.) uses bibliometric methods to examine a selection of gambling-related publications during the last five years. Mapping out unique citation patterns relating to disciplinary concentrations and academic collaborations, the authors found key clusters among the studies analyzed. Patterns reveal that gambling researchers primarily cited authors from the disciplines of neuroscience, psychology, health science, and psychiatry, with fewer citations from social sciences or humanities. Given that the findings indicate that gambling research is dominated by a medical and psychological focus on problem and pathological gambling, the authors highlight the need for greater collaboration between scholars in underrepresented disciplines, while also focusing on broader political and social contexts that influence gambling behaviour and regulation.

In 'General and Gambling-Specific Types of Control: Extending Mental Health Theory and Concepts to Problem Gambling,' Stark boldly expands our understanding of control and loss of control. Through in-depth interviews, this study highlights how different understandings of control, drawn from mental health research, can interact with and influence gambling-specific beliefs. Findings illustrate the heterogeneous ways that gamblers subjectively experience and attribute meaning to control in their lives, thereby increasing our understanding of gambling problems.

In 'Health Promotion Strategies to Address Gambling-Related Harm in Indigenous communities: A Review of Reviews,' Whitty et al. present a systematic review of reviews of health promotion strategies relevant and applicable to addressing gambling-related harm in Indigenous communities. This timely review draws our attention to the importance of improving the health and well-being of Indigenous communities when addressing gambling-related harms. Findings illustrate the challenges of developing appropriate gambling-related health promotion strategies with, and for, Indigenous communities.

The paper by Fu et al., 'The Relationship Between Unexpected Outcomes and Lottery Gambling Rates in a Large Canadian Metropolitan Area,' is a refreshing take on the relationships between external contingencies and gambling behaviour. Exemplifying the varied methodologies and datasets that ECRs are using in their work, Fu et al. examine the daily fluctuations in lottery sales in Toronto, Canada, as a function of 'prediction errors' for weather (i.e., sunshine) and sports outcomes. The results partially replicate findings from similar datasets in the United States, but also demonstrate the malleability of lottery gambling behaviours in response to incidental events between geographies and cultures.

'Gender Equality in Gambling Student Funding: A Brief Report' by Leonard and Violo tackles the important issue of gender disparity in academia. Drawing from the Alberta Gambling Research Institute's (AGRI) master's- and doctoral-level scholarship recipients, the authors sought to explore gender equality in graduate-level scholarship award distribution. Findings illustrate that, from 2009–2019, AGRI distributed graduate-level scholarships equally across genders. In line with this special issue, the authors suggest that future research should examine the career trajectories of these award recipients.

Hahmann & Monson's article, 'Rationalization as a Dissonance Management Strategy among Electronic Gambling Machine Players,' provides an analysis of gambling behaviour that goes beyond conventional, cognitive behavioural paradigms by centring the internal logic that informs and shapes the behaviour of electronic gambling machine (EGM) players. Using a theoretical model anchored in the social scientific study of religious responses to prophetic disconfirmations, the authors find that EGM players use a similar approach to dissonance management as members of religious groups. Their qualitative findings offer key insight into the complexity of dissonance management strategies that could be of benefit to gambling researchers, and prevention and treatment specialists. While cognitive behavioural therapy is the foremost therapeutic approach used to treat problem gambling, more holistic approaches might warrant consideration in light of findings here that emphasize the significance of spiritual and religious beliefs about morality, God, and supernatural forces.

Jääskeläinen et al.'s study examines residents' perspectives on a new urban casino in Tampere, Finland, in 'Ambiguity and Abjection: Residents' Reactions to a New Urban Casino.' Using qualitative focus groups with residents prior to the opening of a new casino, findings reveal several incompatibilities between casino gambling and the daily lives of the locals who reside in Tampere. Four key dimensions were identified: residents' self-understanding; the contract between the municipality and local residents; Tampere's city image; and the evaluation of the pros and cons. The authors conclude that gambling locations should take into consideration relevant cultural-spatial contexts, including those of the local residents whose daily lives will be impacted.

Our final paper, 'A Genealogical Analysis of the Medical Model of Problem Gambling' (Wilcox), calls attention to the powerful effect of framing problem gambling through the lens of the medical model on gamblers' subjectivity and their relationship to gambling. This historically rich critical investigation applies Foucault's genealogical method to reveal the cumulative effect of medical framings on people's sense of self.

Finally, this special issue includes two reviews of Rebecca Cassidy's latest book, *Vicious Games*:

Capitalism and Gambling (2020). In keeping with the theme of this special issue, we chose to ask two researchers, Annie-Claude Savard and Garry Smith, who are at different stages in their careers (early career and senior researcher, respectively) to write parallel reviews of *Vicious Games* in the hopes of cultivating different perspectives on this interesting and highly anticipated book.

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Jennifer Reynolds is an applied researcher and knowledge broker. Trained in Public Health at the University of Toronto, she has over 15 years of research experience on the topic of gambling problem prevention, with an expertise in youth. Reynolds co-developed the first set of best practices for youth gambling problem prevention and has produced two documentaries, along with many other arts-based initiatives as gambling prevention/education resources. Her current interests focus on using participatory action approaches to engage young people in arts-based knowledge mobilization.



A Critical Analysis of Interventions for Women Harmed by Others' Gambling

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Abstract: At present, gambling studies literature has multiple understandings of family and others affected (FAOs) by gambling harm and their support needs in play, each with different possibilities and constraints for harm reduction engagement with women. Individual psychological approaches have been privileged, eschewing the social and relational situation of gambling and harm in women's lives. In Australasia, the majority of those seeking support in relation to a significant others' gambling are women. Gender has been posited as a shaping force in the social stratification system, distribution of resources, and gambling and harm within society. There has been minimal engagement with the lived experiences of FAOs, which limits gambling harm reduction service development and planning. This research critically engaged with gambling harm reduction studies for FAOs, alongside interviews with eight women FAOs who presented to community services from a social constructionist perspective. The aim was to provide insight into how women FAOs position themselves and their support needs in relation to gambling harm and recovery. Data was analysed using thematic analysis informed by feminist poststructuralist theories of language. Results suggested that this small group of women were subject to intersecting patriarchal constraints and economic determinants of gambling harm. Powerful normative and moral constructions of 'good/bad' mothers operated to individualise some women's responsibility for addressing harm in families and to alienate these women from gambling support services. These findings suggest that gambling services must support women and families in ways that go beyond personal functioning, extending into the social and political conditions of possibility for harm and recovery. Critical psychology and coherent gender analysis may offer opportunities to expand the role of gambling support to include advocacy, community development, and more client-led and gender-aware practices with women affected by gambling harm.

Keywords: gambling, families, concerned significant others, treatment, support

Introduction

Two recent systematic reviews of population, clinical, and community-based research have positioned the gambling harm experienced by family and affected others (FAOs) as an urgent issue to address (Kourgiantakis et al., 2013; Riley et al., 2018). Partners and children especially suffer both mental and physical health problems connected to living in fear, anger, guilt, despair, loss, and uncertainty, as well as loss of safety and financial security. Intimate relationships and family environments can be characterised by conflict, breakdown in interpersonal communication, and confusion of roles and responsibilities (Dowling et al., 2009; Hodgins et al., 2007; Kalischuk et al., 2006). These issues can linger long after the gambling has stopped, as encapsulated by the notion of 'legacy gambling harm' (Langham et al., 2015).

Women and men are similarly identified as FAOs in population studies internationally (e.g., Svensson et al.,

2013), however the majority of FAOs seeking support in Australasia are women (e.g., Hing et al., 2013; Ministry of Health, 2018). Gender has been posited as a shaping force in the social stratification system, distribution of resources, and gambling and harm within society (Holdsworth et al., 2012; Nuske et al., 2016). Dowling (2014) noted that male partners of problem gamblers were far less likely than female partners to engage in gambling treatment and research processes. Women are increasingly seeking support around their own gambling in relation to the availability of electronic gaming machines and online gambling (Wardle, 2017), however the literature on gambling harm reduction for FAOs continues to mainly involve and address itself to women (Riley et al., 2018).

Enhancing the quality, effectiveness, and breadth of support provided for family and affected others harmed by gambling is a nascent area in gambling studies. At present, there are multiple and potentially conflicting

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understandings of FAOs and their support needs in play: Individual psychological, social-relational, and social-cultural perspectives give rise to different possibilities and constraints for harm reduction practice (P. J. Adams, 2016; Selbekk & Sagvaag, 2016). Intervention research has focussed mainly at the level of the individual in psychological therapies; for example, women have largely been seen as adjunct to the psychological treatment and support needs of gambling men, such that: 'If they are able to hinder the rehabilitation process, spouses of pathological gamblers are also able to foster change in their partners' (Bertrand et al., 2008, p. 397).

Given their involvement in promoting or hindering the recovery processes, women have emerged as key 'intervention allies.' Concepts such as 'denial,' 'conformism,' and 'social desirability' (e.g., as deployed by Cunha et al., 2015), and 'codependence' (see critiques by Calderwood & Rajesparam, 2014; Orford, 2014) have been drawn on to position women as negligently avoiding and/or contributing to the gambling problem (see Cunha et al., 2015). Tools and recommendations for improving FAOs' abilities to support their gambler's recovery have been developed; for example, the CRAFT program adopts therapeutic techniques developed for FAOs of substance abusers, helping to persuade the gambler to enter treatment, reduce gambling behaviour, and assisting FAOs with their own personal functioning (Makarchuk et al., 2002). Via these programmes, women are invested with key modifiable indicators of individual psychological health and well-being (e.g., emotion regulation, motivation to care, and communication techniques), and the main focus is on gambler behaviour change (e.g., Hing et al., 2013; Rodda et al., 2013).

There are many reports of FAOs seeking advice and support from psychological professionals, specifically to assist the gambler in their lives (e.g., Hing et al., 2013; Rodda et al., 2020; Rodda et al., 2013)—a recent study suggested around 50% of the help-seeking FAO population is seeking help for the gambler (Rodda et al., 2020). FAOs report experiencing relief and a sense of validating authority through their ability to promote gamblers' recovery (see Kourgiantakis et al., 2018). Critical research has pointed out that these interventions may also reify gender role stereotypes; for example, women as naturally caring and as responsible for their family members' recovery. This tendency has been commented on in relation to addictions support where: 'In short, loyal women have been integral to recovery' (Ferentzy et al., 2010, p. 488). Encouraging women to engage in behavioural contingency planning around partners experiencing addiction is problematic given the association of addiction with domestic abuse (Brem et al., 2018; Galvani, 2006) and sexual violence (Florimbio et al., 2019) against women. That being positioned as an 'intervention ally' can also be experienced as deeply oppressive is suggested in some accounts in gambling studies, for example:

Is the family who lives with or leaves the gambler the problem too? Where does it end ... this 'problem'? ... There was nothing I could do about my husband's gambling. The problem gambling support services focussed on trying to get me to help my husband. It was soul destroying. Inside me there was a small voice trying to scream out that we needed help. Us. The family. ('Anna,' interviewed by Borrell, 2008, p. 231)

Such experiences suggest that if gambling services uncritically foster the expectation that women can or should take responsibility for supporting or shaping gamblers' recovery, they might run the risk of inadvertently exacerbating gambling-related harm for women.

Another body of literature focusses on individual psychological well-being of the FAO (without necessary reference to the gamblers' needs). This work positions FAOs as 'under strain' (e.g., Kourgiantakis et al., 2013; Riley et al., 2018). Drawing on a stress-strain-coping-support (SSCS) model of addiction (Orford et al., 2010; Orford et al., 2005), this position advocates that FAOs become the focus of help and support in their own right. For example, a '5-step' intervention for family members of those with gambling problems emphasises: identifying stressors, increasing knowledge and understanding of gambling, evaluating and improving coping resources, identifying and developing ongoing social support networks (Copello et al., 2012). The role of professional support is to facilitate this process (Orford, 1994).

Positioning FAOs as 'under strain' has explicitly created space for women to describe how their relative's gambling problem is affecting them and others in their own terms (see, for example, Holdsworth et al., 2013). Women may also be more able to place respectable limits around their capacity to care: 'One of the main things that (my therapist) had said to me was that I'm not his therapist' (family member interviewed by Kourgiantakis et al., 2018, p. 301). This validation of women's personal boundaries and safety concerns seems important in light of persistent findings that people with gambling issues tend to downplay and/or deny the impact that their behaviour has on their significant others (Cunha et al., 2015; Landon et al., 2018; Patford, 2009). The question of whether or not to leave an abusive and/or violent relationship is highlighted as a key struggle for women with gambling partners, particularly those with children (Kourgiantakis et al., 2018; Patford, 2009).

A social model emphasises addiction and recovery as a process of social identity transition carried out in relationship with others (Best et al., 2016; Borkman et al., 2007). Rather than conceptualising support from the perspective of 'recovery' (which implies a journey undertaken by an individual), 'reintegration' has been promoted as a concept that centralises the

social/relational determinants of addiction and recovery (P. J. Adams, 2007) and focuses on creating opportunities for quality relationships within a social system (Copello & Orford, 2002; Simmons, 2006). Formalised addictions intervention approaches include behavioural couples therapy (BCT) (Epstein & McCrady, 1998) and social behaviour and network therapy (Copello et al., 2006). These perspectives are also operationalised in peer social support practice, family harm reduction/support groups, and some Indigenous-based approaches (P. J. Adams, 2016; Huriwai, 2002). Critical scholars of intervention practice have argued that a traditional focus on individual psychological approaches to mental health issues has limited the development and study of social-relational approaches to supporting FAOs (P. J. Adams, 2016; Selbekk & Sagvaag, 2016). For example, BCT has tended to be explored as a means of influencing addictive behaviours (rather than FAO well-being) (Walitzer & Dermen, 2004). The extent to which women have the emotional capacity or willingness to engage in this way remains underexplored (O'Farrell & Clements, 2012).

Social models of addictions also draw attention to wider cultural and environmental influences on biological, psychological, and other factors, with implications for both the experience of and interventions to address harm (Becker et al., 2016; Griffiths & Delfabbro, 2001; Sharpe, 2002). In this work, gender is understood as constituted through sociocultural processes that shape men ('masculinity') and women ('femininity') (Becker et al., 2016). Claudia Bepko's (1991) collection of work on feminism and addiction was one of the first attempts to make the family treatment of addiction relevant to women, engaging with issues such as gender socialisation and gender-based violence, to position 'addiction' as attempts by individuals 'to have control over their own experience ... a metaphor for the imbalances of power in the larger social arena' (Bepko, 1991, p. 1). Viewed in this way, it is possible to identify gender inequality as shaping addiction-related harm in important ways; for example, through women's social responsibility for family and child well-being, and experiences of poverty, discrimination, trauma, and harassment. From this perspective, quality and effective services for families should acknowledge, understand, and respond to the lived experience of women and families in a patriarchal society (Creswell, 2016).

Morrison and Wilson (2015) illustrated intersectional issues of racism, and women's poverty and positioning as primary caregivers in society, to make sense of gambling harm for New Zealand Indigenous Māori women—living disproportionately in high deprivation neighbourhoods, with low incomes, overcrowded and substandard housing, and carrying the burden of providing and caring for multiple generations (Morrison & Wilson, 2015). Patriarchal norms and culturally defined gender roles have been shown to constrain women's ability to speak about and address gambling

harm in their families (Kolandai-Matchett et al., 2017). For Indigenous families, patriarchal notions, gambling, and violence have been positioned as complex and intersectional issues, exacerbated by the ongoing effects of colonisation and historical trauma (Dyall, 2010; Levy, 2015; Morrison & Wilson, 2015; United Nations, 2014). This literature highlights enhancing women's social capital as important for gambling harm reduction (Nuske et al., 2016) in ways that involve 'challenging sexism and traditional societal ideas of women's place in the world' (Lesieur & Blume, 1991, pp. 193–194).

The brief review above highlights that multiple constructions of harm as well as the purpose and intended outcome of support for FAOs are in circulation, with important implications for the well-being of women harmed by gambling. Research oriented to inform gambling harm reduction service planning and delivery for FAOs is scarce and severely limited by minimal engagement with the lived experiences of FAOs (Riley et al., 2018). Little is known about the needs of gambling FAOs who do not contact formal gambling services (Hing et al., 2013; Landon et al., 2018; Riley et al., 2018). Barriers to help-seeking have been found to include lack of knowledge/understanding of help available, procrastination, and shame (Bellringer et al., 2008; Hing et al., 2013). Engagement with the experiences of women who do not present to specialist gambling services might provide some insight into how support for FAOs could be enhanced. Here we present an exploratory study of how eight women FAOs approaching community support services positioned themselves and their needs in relation to gambling harm. The research questions were: How do women FAOs who present to community services define gambling-related harm and intervention needs? What are the implications for gambling support service design and delivery?

Methodology and Methods

Theorising Gambling Harm and Gender

The theoretical position taken in this study was social constructionism: 'addiction' is seen as a social and historical construct and product of the social and political processes that produce culturally specific knowledge about addiction (e.g., Reinerman & Granfield, 2014; Truan, 1993). For example, 'gambling' has been constructed within public health discourses as a potentially dangerous practice (a harmful activity), and within economic discourses as an ordinary consumer activity (a contemporary form of consumer culture) (Wardle, 2017). Psychological, biomedical, and public health discourses have offered different configurations of problem and/or pathological gambling as: 'a mental disorder, a physiological syndrome, or sometimes a (calculable) combination of all of these things, expressed as factors of risk' (Reith, 2007, p.38). We can consider 'gambling,' 'problem gambling,' and 'gambling harm' to be objects of

knowledge that are continually being constituted and transformed through language and discourse. All of these constructions have made various activities/actions in relation to gambling possible; such as, specialist gambling counselling, the building of casinos, and public health promotion activities. The lived experience of addiction-related harms, organisations and systems for addressing harms, and the culturally available frameworks for making sense of 'addiction' are held to be entangled (P. J. Adams, 2008; Reinerman & Granfield, 2014).

Gender categories were seen as the effects of 'dominant cultural discourses and their underlying master narratives—be they biological, medical, legal, philosophical or literary' (de Lauretis, 1987, p. 1). Gavey (2005) describes how poststructural feminism provides a way of understanding how particular practices and knowledge systems 'which are highly gender-specific—make possible different kinds of desires, and way of being, to women and men' (p. 86). This perspective draws attention to the social landscapes that both produce and shape gender. Gender is understood as both socially constructed and performed in relation to norms (Butler, 1990).

Participants, Recruitment, and Data Collection

Recruitment was carried out with support from an urban women's centre and a transitional housing service in Auckland, New Zealand. Participants were four women who accessed a support group for single/un-partnered mothers (through the women's centre) and four women currently residing in the transitional housing service. The women volunteered by responding to flyers advertising the study in these community-support spaces. Participation was open to any women who self-identified as having experienced harm from someone else's gambling. The women were aged between 27 and 39 years, six were of New Zealand European ethnicity, and the remaining two were each of Indian and Indigenous Māori descent. All eight women had children under the age of 15. All self-identified as having been harmed by the gambling of a family member and had experienced the impact of gambling mostly through male partners, though one woman discussed the legacy impact of a grandparent's gambling. Semi-structured, face-to-face interviews were conducted at the community centres using an interview topic guide in order to elicit and document the experiences and views the participants had around gambling harm, as well as how gambling harm could be addressed. The topic guide consisted of series of open-ended questions, such as: 'Can you tell me about the role of gambling in your life?' Interviews lasted between 30 minutes and one hour. Upon completion of the interviews, they were transcribed verbatim, and pseudonyms were assigned.

This research was approved by the Auckland University of Technology Ethics Committee (Approval numbers 17/208 and 17/181).

Data Analysis

Data were analysed using a reflexive, theoretically informed, thematic approach (Braun & Clarke, 2019). Thematic analyses may be underpinned by a diverse range of ontologies (Terry et al., 2017). Analysis was informed by feminist poststructuralist theories of language (e.g., Gavey, 1989; Weedon, 1987). Feminist poststructuralist analysis of written text typically includes an 'analysis of the socially constructed nature of human behaviour, deconstruction of the assumptions within language and the processes of producing subjectivities' (Gavey, 1997, p. 62). Language was viewed not as merely 'reflecting' social practices (thoughts, beliefs), but rather as constitutive, drawing on and referencing available ways of making sense of phenomena (Weedon, 1987). 'Language and discourse constitute meaning, and hence, particular discursive resources enable and constrain people's choices for how to be and act in the social world' (Braun et al., 2003).

Sections of interview transcripts that contained content referring to gender (as defined by poststructural feminist theories) and/or the intersection of gender with gambling harm were selected as data. Data were coded into themes through a process of repeated reading, which resulted in the initial identification of a number of patterned representations of gambling harm for women affected by the gambling of others. Initial themes were reworked and refined in relation to the whole dataset as the analysis progressed, and further subthemes were coded and identified.

Results

The interviewed women positioned themselves as subject to economic disadvantage, and patriarchal systems, practices, and implied values, which exacerbated and constrained their ability to influence gambling and harm in their families. In seeking to position themselves as 'good mothers' the women referenced powerful normative and moral constructs about selflessness and producing child health and well-being as core attributes of womanhood. These constructs alienated women from support services in general, and gambling support services in particular.

Subject to Patriarchal and Economic Determinants of Gambling Harm

Gambling harm was constructed as both produced and exacerbated by two macro-social determinants: gender inequality and poverty. Patriarchal family structures and communities were described by two women who told how their refusal to provide funds for gambling would result in physical violence from their partners. Traditional gender roles of men as 'decision makers' limited the ability of four women to raise gambling as an issue both within and outside the family context:

In his family, it is what a man should do—drink, talk, gamble all with his friends, so it is quite

destructive for me [impossible] to challenge ... I think it's like the dark side of the moon, because he would show he was decisive and determined, capable, caring, but there was also the other side because he thought that women were not as strong as men and they should be obedient, so he should be the one to make decisions. (Caroline, single mother support)

Also referenced was the gendered expectation that women would perform the majority of domestic and emotional labour within the home: Anna described how 'from a man's point of view ... they got to see their missus coming home ... cooking food, cleaning up the house.' This gendered construction of caring produced the expectation that women would address gambling harm in their family and take responsibility for holding the family together:

All the time you're confronting them because you've found things, there's never an admission that they've got a problem, and I would ask his parents for help for him and basically, not in these words, but their attitude was you've made your bed with him so lie in it. (Amy, single mother support)

Individual responsibility for addressing gambling harm in the family could be experienced as deeply oppressive and as incompatible with women's ability to take care of themselves and their children. Anna was brought up by her grandmother. Anna's grandmother was allocated a small allowance by her husband to buy food for the household's consumption, which constrained her ability to entertain/host or shop for her personal needs. She developed a gambling problem that eventually forced the sale of the family home. Anna described her grandmother's financial dependency on her husband, and corresponding lack of financial literacy, as shaping the gambling harm in her family, the legacy of which contributed to her own financial deprivation:

My grandmother, I think once women who are allowed next to nothing [by their husbands] get money, it's pretty much easily addictive. I mean, the women go out, and you know, when money comes it's like ... cha-ching, cha-ching in their eyes. (Anna, housing support)

The four women accessing housing support emphasised poverty as a key driver of gambling behaviour in their families, such that excessive gambling in their families could be seen as a reasonable response to circumstances of deprivation:

We grew up in a life that money was power. Only that was gonna take you from such other shit, that it was a good distraction from it. You know?

The high of just winning something—everybody likes to win stuff to have stuff. (Sam, housing support)

With my grandparents ... I can see it now, the way that they were trying to get money [by gambling] was because they were trying to save for me. To do it for schooling, or anything, like for Christmas presents and stuff like that. (Anna, housing support)

In this way poverty, combined with gambling industry marketing practices emphasising the possibility of great financial gain, were highlighted as producing and shaping gambling harm.

Caroline (single mother support) succinctly described the implications of patriarchal and economic determinants for women's gambling harm reduction: 'Any financial help was the most important because otherwise I wouldn't be able to leave him because he supported the family.' Economic empowerment was seen as vitally important to enable women to determine the course of their lives. The women also discussed community development activities as central to addressing and preventing women's gambling harm:

I always feel that when there's a problem that maybe there was a way to prevent the problem you know. What is it really about is when you try to feel good for the material stuff actually instead of some spiritual stuff and cultural stuff ... kapa haka, and church. So, for kapa haka, it's about unity, and culture, and connection, and singing, and performing. (Sam, housing support)

Kapa haka (Māori performing arts) contribute towards well-being and identity as processes for Māori, that can be utilised in Māori health promotion (Paenga, 2008). Women who described addressing and preventing gambling harm through community connectedness also referenced the Māori notion of kaitiaki. A kaitiaki is a guardian, and the process and practices of protecting and looking after the environment are referred to as kaitiakitanga. As a concept, kaitiakitanga can align with a public health focus on shaping the environments in which health is produced (Wilson, 2008). For all of the women in this study, a holistic discourse of health and well-being seemed to allow for discussion of intervention beyond individuals, invoking a political space where women could recognise the structural and social determinants of gambling harm:

I went to the Salvation Army, they did counselling for people affected by other people's addictions ... you just get so bamboozled by it all and so confused. Then after that I started going to the Women's Centre, and that was really the

only support I had. I didn't necessarily talk about what was going on, but it was somewhere to go and just be ... So that to me is a concern, that we started to change, that there's nowhere to be. (Amy, single mother support)

I just love the structure, and the safety of being involved in community work, and just because they're helping me actually figure myself out without trying to ... we're helping all of us understand ourselves together, I guess, and it's giving me the tools I need to have a better life, be a better mother, and be a better role model to my children. (Caroline, single mother support)

From this perspective it was possible for these women to resist efforts to position their problem as an individual phenomenon via 'counselling for people affected by other people's addictions.' These women could articulate the need for change in broader systemic drivers of gambling behaviour and harm, such as gender inequality, poverty, low levels of social cohesion, and access to community facilities appropriate for women.

'Good Mothers'

The women in this study were careful to claim and defend a position as 'good mothers.' Good mothers were held to consider the well-being of their children first and foremost, taking responsibility for shielding them from gambling-related harm.

I just don't want my kids to go through what I've been through with the gambling ... 'Cause I've made a promise to myself that I'll look after my kids, I've promised myself that I'll be a good mother, and I've promised myself that they'll be well looked after, well cared for. (Anna, housing support)

For all of the women interviewed, being a good mother necessarily meant putting some degree of distance between the gambler and the family, whether that was living separately (avoiding the streets at all costs), dividing finances, or severing the relationship entirely. Three of the four women accessing support for single mothers cited gambling as the main reason for their separation from their partner; one woman mentioned violence associated with gambling:

I said to him, you've got to pull your head in, but he wasn't willing to put his family life first. So, he gets [daughter] every second weekend. (Belinda, single mother support)

I think I had less tolerance for it all [gambling and violence] after my girls were born. I realised that I had something else to look after, and I didn't

want them seeing that. (Danika, single mother support)

Compensating for fathers' absences, as well as seeking to preserve a positive connection between the child and their father, were discussed as essential to child well-being. These notions correspond with current New Zealand family law and policy, emphasising that preserving a relationship with both parents is usually in the best interests of children (Tolmie et al., 2010). This often meant orchestrating a delicate balancing act, which produced additional financial and emotional strain for the women:

He'll come up and see his son, and he'll say 'oh I've got no money to get home [as a result of gambling]' ... even though we're not together you're still affected by it when you've got a child, you're still caught up in this world of craziness. (Amy, single mother support)

In positioning themselves as 'good mothers,' these women provided glimpses of the social situation of 'bad motherhood' against which they were required to defend themselves. Women accessing community support for single mothers particularly emphasised social stigma around being unable or choosing not to be in paid employment:

I think there's just so much stigma associated with being a single mother in New Zealand I never appreciated how it is to be in work and income support. I stayed at home with my son before I went back to university and did a postgrad. How depressing it is going to [work and income support service], feeling like, you're bludging off society and you're not worthy of being a member of the community. (Amy, single mothers support)

Belinda who accessed single mother support contrasted financially independent 'normal happy families' with 'broken homes' like hers to describe how notions of the 'good nuclear family' excluded her single-mother family. Caroline contrasted 'perfect motherhood,' as she imagined it would be, with her current situation as a single mother on a benefit:

If you say you are a single parent, there's judgement from people, and it's like you can't explain what happened because it's just too hard. And then his gambling, drugs, as well as his debts ... You know, you think an educated woman in my 30s, you just don't think you're going to be in that circumstance. There's that stigma there, I didn't think I would be like this. I didn't think I would be in this situation. (Caroline, single mother support)

The struggle to maintain 'good motherhood' placed the women in a precarious position, in relation to seeking gambling support. For example, Amy (single mother support) described her fear of being positioned as a 'bad mother' because she is not always able to protect her son from harm caused by her ex-partner's gambling:

I think there's a lot of shame with regards to admitting that there's a problem, especially with gambling, and the whole 'why did you have a child with someone who's got this problem?' ... So I never told the day care that this was happening or, you know, that there were other things going on that could affect my son's behaviour. (Amy, single mother support)

Women described how the threat of being cast as 'irresponsible mothers' encouraged them to take on sole responsibility for addressing gambling harm in their families and constrained their ability to speak about gambling issues:

Well [gambling] caused me to become a single mother. I think that meant there was less support, and maybe a little bit more judgement ... I really struggled when I had to come home and go on the single parent benefit for a few years until I got back on my feet ... I found it hard to talk about it, especially to friends, I didn't want to get judged. (Danika, single mother support)

I would never talk about the gambling. I did talk about it once with a friend and then she never really spoke to me again. So, I think it was seen as kind of my problem, I took that as in, it's your problem to sort out, she didn't want to know. (Amy, single mother support)

The women associated 'good motherhood' with powerful traditional social and cultural expectations around the nuclear family as a social and economic unit, femininity, and women's roles as caregivers in the family. 'Good motherhood' was positioned as largely incompatible with experiencing gambling harm in the family, constraining women's access to social, familial, and professional support.

Discussion

This study provides some illustration of how gender-related issues may be linked to gambling harm and harm reduction by women accessing community support services. These women constructed the gambling harm they experienced as a socio-cultural and gendered phenomenon. Poverty, gender inequality, and the struggle to maintain 'good motherhood' in a social environment considered hostile to both beneficiaries and non-nuclear families were all identified as important facets for intervention by these

women. Gender norms were described as operating in broader society to reward women who are able to position themselves as capable wives, mothers, and carers, and stigmatise or punish those who are cannot—discouraging help-seeking. Just as Schüll (2012) argued with respect to women who experience problem gambling, gambling harm for FAOs appears in many ways to be 'symptomatic of unresolved anxieties and tensions surrounding the place of care in our discursively individualist society' (Schüll, 2012, p. 2). Järvinen-Tassopoulos (2016) has also shown how traditional gendered roles of spouse and mother can operate to discipline Finnish women experiencing gambling harm, who fear losing their families if their problems become known outside the immediate family. These findings shed light on how the production of familial well-being as women's responsibility could facilitate (even mandate) help-seeking for some women, while constraining help-seeking for others for whom the burden of multiple stigmatised social positions is too great.

Outside of gambling studies, a strong body of literature has highlighted the ways in which women can be subject to intense moralising regulation as wives and mothers, which compromises their health and well-being (e.g., Miller, 2007; Raddon, 2002; Wall, 2001). The current findings relate to a broader critical women's health literature identifying 'the family' as a problematic space for women's health and well-being. Division of labour in the home remains an important gender-equity issue (Choo, 2000; Waring, 1999). Internationally, inequity in the home remains negatively associated with women's mental health (e.g., Lively et al., 2010), restricted access to health and well-being benefits of employment (Schnittker, 2007), and income inequality with men (Kleven et al., 2018). Women continue to be positioned as primary carers in families, through representations of guilt, responsibility, work-family balance issues, and dominant forms of masculinity (Wall & Arnold, 2007). In New Zealand, women still spend 2–3 times as much time as men on unpaid household and caregiving work (Fursman & Callister, 2009). Consequently, boys and men can experience profound difficulties participating actively in families and sharing the tasks of providing emotional intimacy or personal care that are integral to family life and well-being (M. Adams & Coltrane, 2005).

The foregoing raises important considerations for gambling harm reduction. Gender dynamics should be carefully considered to avoid adding to women's social burden and exacerbating harm. Gender-aware family and community interventions would work with families and communities to identify and challenge gender narratives that may be experienced as restrictive, and find and advocate for creative ways to redistribute responsibility for providing care (Lesieur & Blume, 1991). Gambling interventions should find ways to include men in conversations about gender equality in the provision of care, in the home and in broader

society. To date, there has been very little engagement with men in gambling harm prevention and reduction research and practices for families (Riley et al., 2018).

The current findings suggest that gambling services target FAOs in relation to their 'own personal functioning' (e.g., Makarchuk et al., 2002), which is problematic for some women to the extent that they are required to identify themselves as 'dysfunctional' or 'not coping' (at the level of the individual) to access support. In the addictions treatment field, Aston (2009) explored the ways in which women have struggled against similar addiction treatment ideologies that have required them to identify as 'addicts' in order to access support:

While acknowledging her need to address her temporary inability to stop using drugs, Susan refused to accept an identity based on powerlessness and composed of character defects. ... Susan saw the world in terms of power, privilege and difference; claiming powerlessness was 'what women have been doing for years' (Aston, 2009, p. 622).

Addictions treatment and self-help services (as well as researchers, government departments, and other stakeholders) produce authoritative knowledge statements about 'addictions' and 'addicts' in families. These constructions may or may not align with women's lived experience, and can even unwittingly exacerbate experiences of disempowerment or worthlessness (Aston, 2009).

Traditional psychological and health sciences have tended to focus on support for individuals harmed by gambling or, at most, the inner workings of families (Orford, 2014). In the limited gambling FAO intervention literature, the clinician's role tends to be narrowed to 'identifying stressors' followed by 'advantages and disadvantages of how they respond' to stress and the need to provide psychoeducation (e.g., George & Bowden-Jones, 2015, p. 167). These approaches reflect the dominance of cognitive behavioural and motivational interventions (Meis et al., 2013) and converge around three particular components of family interventions in mental health and addictions that are regarded as essential: providing information about the addiction/mental illness, coping skill development, and support from professionals. (Kourgiantakis & Ashcroft, 2018; Lucksted et al., 2012). In engaging with affected women, the current findings support social-relational and sociocultural perspectives on gambling harm/reduction seeking to '[alter] the focus of treatment from the individual to the social context within which the addictive behaviour takes place' (Copello & Orford, 2002, p. 1362).

Two of the women interviewed in this study articulated a need for collective social action as an appropriate response to the harm they experienced. The perspectives of these women challenge dominant

(uncritical) psychological interpretations of harm and their support needs by maintaining a dual focus on individual and collective social issues. Interventions have been developed for women's health concerns in ways that bridge the individual-social (e.g., Ussher et al., 2002). These approaches encourage clinicians to collaborate with community, advocacy, and social justice groups in addressing the needs of their clients, including promoting social action leading to health-promoting cultures and environments (Prilleltensky & Prilleltensky, 2003). As yet, there is little evidence in the literature of critical psychological work in the area of gambling harm reduction for women. Critical psychology may offer opportunities to expand the role of gambling services to include community development and more client-led practice.

The women also referenced collaborative and Indigenous mental health therapeutic activities, and the need to challenge patriarchal family structures in ways that are culturally nuanced. In New Zealand, a Whānau Ora approach is a strengths-based intervention strategy with the capacity to support this kind of gambling harm reduction for women. It includes a focus on supporting broader family and community systems to conceptualise and address issues that are complicated and interrelated (Levy, 2015; Ministry of Health, 2015). From this perspective, engagement with women's own definitions and practices of wellness and autonomy is identified as vital. For example, some Māori women view safety and well-being as a holistic concept involving confidence that their community supports and accepts them as Māori women, as well as a strong sense of connectedness with other women (Wilson et al., 2016). This definition suggests initiatives focus on challenging problematic narratives about Māori women (e.g., as 'at-risk,' powerless, or troubled) and on strengths-based community development work with women specifically (Wilson, 2008; Wilson et al., 2016).

The current research supports the notion that efforts to reduce gambling harm for women 'requires a feminist sensitivity to the reality of women's lives' (Boughton, 2003). This involves developing interventions with and through research that engages the social and cultural conditions of possibility for women's gambling harm and recovery (Holdsworth et al., 2012). This links back to early definitions of gambling as a public health issue and the need to address 'not only the biological and behavioral dimensions related to gambling and health, but also the social and economic determinants such as income, employment and poverty' (Korn & Shaffer, 1999, p. 291). To this list must be added gender power dynamics in families and communities (Hammarström, 2007).

Limitations

This research engaged with a small group of women who were all mothers engaging with two community services. These women were also of mostly similar, New Zealand European, cultural backgrounds. Considering a

wider range of women's experiences in conversation with gambling studies would help determine where and how FAOs might have been inadvertently excluded or alienated by the discourses of gambling support, and should shed further light on how support for FAOs could be enhanced for women.

Conclusion

Dominant conceptualisation of FAOs' support and interventions tend to ignore or downplay factors external to the family that help to produce and exacerbate gambling harm. Intervening to reduce gambling-related harm for women and affected others necessitates engagement with women's lived experiences and the broader conditions under which women live. For women in this study, this reality included marginalisation caused by poverty, gender inequality, and the struggle to maintain 'good motherhood' in a social environment considered hostile to both beneficiaries and non-nuclear families. Critical psychology and coherent gender analysis may offer opportunities to expand the role of clinicians, services, and researchers to include advocacy, community development, and more client-led and gender-aware engagement with women.

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The Musings of 'Evil Bastards': Perspectives from Social Casino Game Professionals

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Abstract: Technology has blurred the lines between gambling and gaming. While the convergence can be witnessed on many different levels, social casino games on social networking sites and mobile apps illustrate just one example. Much of what we currently know about social casino games focuses on player behaviour, with little understanding about this genre from the perspective of social game professionals. This paper aims to fill the gap in our understanding of social casino games through interviews with the professionals who design them.

In-depth interviews were conducted with 14 professionals from the social casino games industry. Interviews were analyzed using thematic analysis. Findings illustrate that tensions exist between the two fields of gambling and gaming; however, both are trying to separate themselves from the stigmatized 'dirty secret' that is gambling. Further, as a result of social casino games residing, for the most part, in an unregulated 'grey area,' findings illustrate the ethical struggle felt by social casino game professionals. This convergence has significant consequences, not only for players, but for game developers, designers, and researchers, and highlights the importance of game designer education.

Keywords: gambling, game design, social casino games, free-to-play, stigma

Introduction

While gambling has been a part of the human experience for centuries, new technologies offer a huge potential for expansion. Social casino gaming is a concomitant convergence of traditional gambling (real money casinos), online gambling (real money online casinos), and social gaming (virtual games played primarily on social networking sites (SNS) and mobile apps). For the most part, these games are largely unregulated and generate revenue from a free-to-play (F2P) business model, where the product (game) is free to access but players are encouraged to use real money to purchase premium features such as upgrades, bonuses, virtual goods/currency, or speeding up actions (Nettleton & Chong, 2013; Paavilainen et al., 2013). Thus, the social casino gaming industry challenges our conventional understanding of gambling, gaming, and regulation. In this article, I present the perspectives of social casino game professionals, whose voices have received little attention to date.

The growing body of literature about social casino games focuses on the player, with relatively little

research to foster an understanding of how these games are designed and of their potential impact on player behaviour. Natasha Dow Schüll's seminal work, *Addiction by Design* (2012), illustrates the importance of understanding how commercial gambling activities, business models, and environments create, and actually encourage, the behaviours of individual players and influence gambling-related harms. Before Schüll, very little discussion of gambling addiction took into consideration the role of slot machines, particularly slot machine technology and the underlying industry practices.

Previous research informs us that professionals have worrying concerns over the F2P model, feeling that the revenue model is exploitive and unethical (Alha et al., 2014). Reynolds (2019) highlights the ethical and risk concerns about game mechanics and the use of big data to personalize players' gameplay to optimize engagement and monetization. Finally, Paavilainen (2016) illustrates that F2P game developers emphasize key F2P design principles, such as: fair play, player equality, scalable game design, the constant drive for new content (especially for players who

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spend a lot of money in the game; i.e., whales), the ability for players to achieve within the game (at least in theory), and the preference for a loose economy rather than a tight one.

When we examine the literature on player behaviour, there is a growing body of research about the associations between social casino gaming and gambling that warrant attention. In 2018, a survey reported that 12% of Canadian adolescents in three provinces played social casino poker in the preceding 3 months (Veselka et al., 2018). A study of young gamblers (12–24 years) reported 20–35% play casino-style gambling games on SNS (Stark et al., 2016). Factors associated with social casino gaming among youth indicate that being male, parental gambling, having friends that gamble, and increased screen time are associated with gameplay (Veselka et al., 2018).

Of concern is the potential transition of players from casino-style games found on SNS, to real-money gambling (Derevensky et al., 2013; Gupta et al., 2013; Kim et al., 2015; King et al., 2014; Lewis et al., 2012). Previous research found that youths aged 11–15 years who play free-to-play gambling games show a greater propensity to engage in real-money gambling, suggesting that ‘children may get the same buzz from playing free games as gambling for money’ (Ipsos MORI, 2011, pp. 3–4). Evidence demonstrates that social casino gaming influences the migration of play over to monetary gambling (Gupta et al., 2013; Kim et al., 2015).

Moreover, regression models confirm that ‘exposure to or past involvement in simulated gambling activities was a significant predictor of pathological gambling risk’ (King et al., 2014, p. 310), while engagement in micro-transactions was also found to be a unique predictor to transitioning over to real-money gambling (Kim et al., 2015). Finally, and most importantly, claims that social casino gaming sites ‘teach young people to gamble’ (Lewis et al., 2012, p. 6) are beginning to be substantiated (Kim et al., 2015; Reynolds, 2016). This is of particular concern for youth who might not otherwise have gambled at such a young age. The proliferation of gambling opportunities is now embedded in the daily lives of young people, offering youth more opportunities to gamble and foster migration of their gameplay over to

real-money gambling sites once they develop a level of experience and skilled play (Kim et al., 2015). Given the absence of monetary reward, these games might not legally be considered gambling, but many youths perceive social casino gameplay as a form of lower-stakes gambling (Reynolds, 2016). Finally, in a recent guest editorial, Kim & King (2020) highlight the struggle of research to keep up with the pace of technology, call for future research to focus more globally, and consider how the convergence of gambling and gaming operates and affects gambling participation across various cultural and sociocultural contexts.

Methodology

Located within a constructivist paradigm, this study focuses on how professionals in the social games industry perceive casino-style games and explores the larger ethical issues surrounding them. In total, 14 game professionals were interviewed following a semi-structured interview format. In-depth interviews were conducted in person, lasting from 1.5 to 2.5 hours. Professionals did not receive an honorarium for their participation in the study.

A professional was broadly defined as an individual engaged in an occupation that is tied to social casino games in some manner. Specifically, game professionals identified specializing across a variety of industry roles and in-game areas, such as monetization, user experience, data analytics, and live operations, from three different social casino game companies located in Montreal, Quebec, Canada. The game companies are currently leaders in the social casino games industry, and are similar in size, business operations/goals, and scope of the games they develop. Therefore, it can be assumed that professionals were similar with respect to their professional behaviour. Professionals were recruited through a purposeful sampling strategy, selecting participants because of their characteristics and knowledge of social casino games. At the end of each interview, I encouraged professionals to share my contact information with their colleagues. See Table 1 for the breakdown of all game professionals.

Table 1
Description of Participants

Number of Participants	Professional Area of Expertise	Location	Gender	
			Male	Female
2	Operators/producers	Montreal	2	0
8	Game designers (monetization, UX)	Montreal	4	4
2	Analysts	Montreal	2	0
2	Live-op managers	Montreal	2	0

In-depth interviews were analyzed using thematic analysis (Braun & Clarke, 2006). To ensure the trustworthiness and authenticity of my findings during the analytic process, I followed Braun & Clarke's 15-point checklist of criteria for good thematic analysis, which consists of criteria to examine during all stages of the process (i.e., transcription, coding, analysis, write up). Despite the diversity of game professional roles, overall thematic saturation was obtained. Ethics protocol was approved by the Human Subjects Ethics Review Committee, Concordia University, 2017.

Analysis

Convergence of Play

Despite jurisdictional regulatory differences, all professionals agreed that social casino games represent a blurring of lines between gambling and gaming, a perfect illustration of the convergence that is happening between the two fields. 'The mechanics are exactly the same. If you win, you're going to accrue chips, bet them again, in the hopes to keep winning.' The difference is that players cannot directly take money out of the game; this slight difference is why these games do not fall under the gambling laws in many jurisdictions, as it is not gambling per se. As one game designer articulates, 'this makes the games similar, but also different because we [game designers] can do things that would be morally unacceptable.'

Social casino games fall in a grey area that is mostly shielded from regulations, which gives operators an opportunity to exist and profit in the absence of independent oversight. As one professional states:

It's an interesting problem for regulation because things don't operate like a dichotomy, or binary between games and gambling. It operates more as a spectrum of things. You can clearly say that putting money in a slot machine is gambling ... as you move further along the spectrum, you have people putting in money in loot boxes. You're putting in your real money because you want a hat or a fancy yellow gun so that you can show to other people.

Several game designers claimed that loot boxes are essentially 'the equivalent of a slot machine into a normal game.'

There are some implications to the convergence and lack of clarity around how social casino games are conceptualized. Previous research shows how young people consider social casino games as a form of 'gambling lite' (Reynolds, 2016). Similarly, most game professionals interviewed often referred to social casino games as 'gambling-ish.' This convergence adds to the confusion surrounding the casino-style games sector and, according to social casino game designers, results in stigmatization.

Stigma

These findings illustrate that stigmatization can be witnessed on multiple levels. First, interviews support previous findings that tensions exist between the two industries of gambling and gaming (Abarbanel, 2018). It seems that both industries are trying to separate themselves from the stigmatized 'dirty secret' that is gambling. There is a distinct feeling that while gambling falls under the larger umbrella of games (Juul, 2003), framing gambling games as gaming is deceiving and 'a lot of people who are in gaming, as opposed to gambling, really look down on gambling.'

Gambling has always been a very loaded term: for some, it continues to be associated with the illegal gambling operations run by organized crime in the twentieth century; others observe how gambling losses transformed Las Vegas from a desert outpost into one of the world's top tourist destinations (Schwartz, 2006). It has only been over the past couple of decades that gambling has begun to be seen as a socially acceptable leisure activity, largely because of the powerful, deliberate, and misleading reconstruction of gambling as gaming by the gambling industry (Derevensky, 2012).

When people say 'gaming,' it's like one of those 'What do you mean?' moments. 'Oh, you're talking about gambling. Yeah, that's like a different thing.' ... I would say it's [gambling] sort of like the dirty secret. In the games industry, no one wants to talk about gambling.

It's [stigma] really is just an extension of the moral approbation of the rest of society. It's more like someone you're related to, right? You're like 'Pfft, that's really bad, please don't associate me with my brother ... because he is the bad sibling, and I am the okay sibling. I'm trying to work my way towards respectability.' Gaming, as opposed to gambling, is really obsessed with respectability ... Being associated with gambling is really bad for that. It's like having the cousin who reveals that you come from a non-classy background, while gaming is trying to be 'No, no, we're not like that. We're a totally different type of person.'

Social casino game designers also reveal a second level of stigma that is occurring. Specifically, that there is significant stigma for game designers of casual and 'free-to-play' games, associated with the underlying business model of many casual and free-to-play games that 'exude a priority of profit over a truly fun game experience.' This result reflects previous findings from game professionals (Alha et al., 2014). As one game designer says:

there is a lot of stigma in the field ... you will find a ridiculous amount of articles talking about whether or not they [social games] are games. To

this day, when I tell people I work in social games, I'm always like [whispering] 'I'm in social games, and it's in gambling. But I can do REAL design, I swear I can.'

As this quote indicates, oftentimes the stigma can lead to an internal struggle. For many social casino designers, there is a struggle that resides with their 'desire to make good games.' As a couple of game designers explain:

Triple A companies look down to people in casual games. And for some game designers, we felt it was a punishment to be assigned on a casual game project. There is really a stigma, still today. People want to make good games; they want to work on the games they want to play.

I have to provide for my family. In a way, I accepted doing a free-to-play game, it's become a job. It's a job I think I'm good at, but it's not my true calling. The [game] market has evolved like this. At one point, you have to adapt or find another craft ... In the end, you try not to think about it because at one point, it's like, what are you going to do? Risk losing your job?

'Dark Design': Designer Ethics and Being 'An Evil Bastard'

Across the board, game designers understand that what they do can significantly impact people. A topic candidly discussed in almost all the interviews was the notion of 'dark design.' Dark design is about the tweaks, notifications, cues, and pushes that designers specifically incorporate into the game. As one designer articulates, 'dark design is a rabbit hole you [designers] can go down. It comes originally from slot machine design, not from game design. It's basically design patterns that abuse what we know about human psychology.' The 'dark design' of social casino games weighs heavily on almost all designers and highlights an area that is rarely discussed—designer ethics and corporate social responsibility. It encompasses everything from the types of data that social casino game developers are collecting, to the ways that the data are used to 'profile, nudge, whatever.' A powerful discourse within the game design community focused on the self-identification of the social casino designer as an 'evil bastard.'

Social casino game designers acknowledge that the games they are producing reside in an unregulated 'grey area' and, consequently, feel an ethical struggle. Two game designers explain:

Ethically speaking, you're always a bit tough on yourself. It's actually so close to a real gambling that the company basically hired psychologists to work with them full time to understand the psyche of their players ... It can impact people

drastically because you play on the psychological effect. Some people are susceptible to fall into it [gambling] more than others. Many studies are there to illustrate it. So, in the end, you turn into a kind of evil bastard.

I see people get highly addicted and will play forever until they are literally bankrupt. Which, as a game designer, I do not want on my conscience. I don't think any game designer does.

As game designers, they want to be 'proud of their work.' But all acknowledge that 'very few games make good money without resorting to poor impulse control.' As one designer indicates, 'when designers start making a game that they are not proud of, they are really sad.' Another designer confirms this when he says, 'some days there is a lot of self-loathing.' At which point, the reality of being a free-to-play game designer sinks in: 'we need to constantly negotiate our values.'

Almost all of the game designers I interviewed spoke about being good at their job. This adds an additional level of internal conflict. One social casino game designer said it best: 'my job is to best figure out how we can get a little bit more sneaky [with respect to monetization].' He goes on to say,

The problem for me personally, is that I got very good at it [monetization]. At work I would say 'oh yeah, we should do this,' and then we do it. And then the player will pay this here and there. But then I would go to events with friends about gaming or whatever, and then they would talk about bad monetization practices and all that, and I am like, 'oh shit, that's me they're talking about' ... I feel dirty, but I am very good at it.

One designer sums up the current monetization practices of free-to-play games like this:

Game designers are the bad guys in all of this. Companies specifically hire people to inject microtransactions into their games, but we [designers] know what we are doing, we are good at it. It's evil. It's like we are mercenaries. We are going to do all the dirty work.

This quote hints at the important role that companies have in using dark design patterns in their games. All designers were in agreement that one of the most challenging aspects of their jobs is dealing with companies' 'higher-ups' and the struggle they have when discussing 'problematic design choices' as a way for the company to 'make a shit-ton of money on a game.' Having worked on a number of social games over many years, two designers explain it like this:

When social games, Facebook games, mobile games become really big, they get bought out by a whole different type of businesspeople. A whole different type of management-level people who have no interest in games and are only there because of the quick gains. And they don't treat games as a form of entertainment, and only want to design them to make money. They treat it as any other business. So, whatever brings them the most money the fastest is what they go for and it doesn't matter if it burns out in three years and they burn through their player base. They don't care. They just take the money and leave when they are done. Fire everyone and they start a new business ... they like whatever is hot at that moment.

The most challenging part is fighting with the higher-ups on wanting to just do whatever in the most abusive approach to making money. I try to convince them of good design that will long term, will bring them more money. Which I proved to them, and they didn't care ... They don't think long term, we only look at something for the first two weeks and they start to panic.

Multiple Currencies

In many countries, social casino games are not considered to be gambling because of the legal coordinates of consideration, chance, and prize (Campbell et al., 2005; Owens, 2010). The latter part of this assumes that prizes must be synonymous with money and that in-game currencies and chips do not hold value outside of the game. Perhaps the key to solving this legal puzzle is to address the real value of virtual currencies.

Findings from my interviews support the need to augment our definition of value with respect to in-game currencies (Castronova, 2005). In particular, currencies and chips *do* have value inside and outside of the game. Games, including social casino games are currently being designed in ways that expand our understanding of currencies. However, from a gambling regulatory perspective, this is often not being acknowledged. For example, one game designer asks if 'in-game XPs (experience points) are a form of currency?' For a player to have to 'grind' their way to a desired level or achievement, they are spending significant amounts of time playing the game. She goes on to explain:

the principle of games is that sometimes you have to grind, so designers try to make the grind interesting so people will do it themselves because it's fun ... But sometimes players pay people to grind for them. Unfortunately, it is a well-known practice when players want to play against others at a higher level and don't have the time or inclination to grind their way to that desired level.

In this instance, buying XPs is a form of currency. It also elucidates an additional important currency: time. Players' time is of value. Two game designers sum it up when they say:

It is important how the players perceive that [paying people to grind] and by not perceiving it is gambling when they lose time. They are at risk of losing too much time. Time then creates this barrier of gambling and gaming, and gambling is perceived as worse. This is really the barrier where games want you to take out your credit card and pay for something [time]. It's like a protective factor to gambling. If players perceive using money as a way to grind through XPs, it becomes a double-edged sword. Players can too easily lose the time, but it helps them to protect against losing money.

Your XP usually gets to level ups. What happens on level up? ... Rewards. It can be anything, hard currency if you have them. This is where we [developers] can be generous with our players. Why? Because you want them to level up. If they level up, it means they are playing and chances are increasing that they will spend. You just want them [players] to come by habit to the game and get their daily adrenaline stimulation. What in the end are we selling? ... Time! With time, you [designers] can basically predict everything that happening in the game. I get them [players] to a tilting point where I can sell them time.

Discussion

'How can they expect people to gamble responsibly when they build machines that make them [players] behave irresponsibly?'

Interviewee (Schüll, 2012, p. 274)

The emergence of casino-style games on game platforms, mobile apps, and social media, such as FB and Steam, challenges our current understanding of gambling and raises considerable concerns, particularly with respect to how these games are designed and their ethical implications. This study presents the unguarded views of social casino games professionals, an absent voice in our current understanding of this genre of games.

To date, the studies of gambling and gaming have had very little to do with each other, despite the fact that they are both areas of study that fall under the larger rubric of game research. Although the two fields are converging as a result of the evolution of technology, casino-style social games, have for the most part, only been examined through a gambling lens. This study allowed me the opportunity to immerse myself within the field of gaming, which is quite

different from gambling with respect to its underlying disciplines and related knowledge.

There is a growing consensus about the need to view gambling from a public health perspective (Bowden-Jones et al., 2019; Hancock & Smith, 2017; Korn & Shaffer, 1999; Livingstone & Rintoul, 2020; Skinner, 1999). Essentially, the key difference between the public health framework and the various other approaches hinges on the role of the individual. The public health approach offers a broad viewpoint on society, moving beyond individual behaviour to the importance of examining the games and the environment in which gambling games occur and the games themselves (Korn & Shaffer, 1999). Despite this interest in framing gambling within a public health perspective, a disproportionate amount of research still focuses solely on the individual and their behaviours. This is, perhaps, unsurprising, given that a disproportionate amount of gambling research originates in the discipline of psychology (Reynolds et al., 2020; Cassidy et al., 2013).

Moving forward, examining this genre of social games from a broader lens and adopting a multiple disciplinary perspective will offer unique opportunities to critically understand, not only players' behaviour, but also the effect of the environment and underlying business models.

The prevailing regulatory knowledge promotes the dualism between social casino games and gambling based on the traditional, and mainly uncontested, legal coordinates—consideration, chance, and prize (Campbell et al., 2005; Owens, 2010). Tensions exist between the two industries; however, both are trying to separate themselves from the stigmatized 'dirty secret' that is gambling. Confusion exists about how to frame social casino games. This confusion illustrates the significant power that industries have in shaping the public discourse and discussion around these games.

The literature in both fields have attempted to define gaming and gambling, and highlight the difficulties in coming to an agreement about these terms. The process is difficult and not unbiased, as it is accompanied by questions of power (Arjoranta, 2014). To date, dialogues about the definition of social casino games have been significantly driven by industry and related key stakeholders, who have set the terms and boundaries for how the discussion is carried out: 'In the liminal spaces between definitions live things that resemble the ones you are trying to fence inside your boundaries, but are faulty in some small way' (Arjoranta, 2014). Traditionally, gambling has been considered a boundary case under the larger rubric of gaming (Juul, 2003). Social casino games have become an example of a similar boundary case, located between gaming and gambling, and challenging the gambling field to ask: 'What kind of purpose the definition is trying to fulfill, what kind of phenomena it is leaving out, and why?' (Arjoranta, 2014).

Examining the regulation of social casino games was beyond the scope of this study, but the industry will be significantly impacted if we begin to define these activities as gambling under the traditional legal definition; specifically, if winning a prize, other than money, holds value. The biggest risk to the industry would be a challenge to their assertion that in-game currency holds no value outside of the game—as soon as value is attributed to it, these games will be defined as gambling, and with that comes regulation. As the game professionals articulated, social game developers maintain a level of freedom that allows them to push the boundaries of game design, usually at an ethical cost to the designer. Despite the dark-design patterns and the related ethical struggle that many game professionals experience, social casino game developers/operators continue to construct these games as just another form of free-to-play entertainment and keep alive the harmlessness discourse (Reynolds, 2019).

Findings illustrate how the concerns of social casino professionals are disregarded in lieu of generating fast money at all costs. Schüll's (2012) work on machine gambling also takes the commercial interests of the game design company into consideration; particularly how players find themselves disconnected and in the 'zone' as a result of game design. As Schüll (2012) articulates,

An understanding of flow is relevant to the design of leisure products and services, he [Csikszentmihalyi] neither elaborated on the profit motives behind the design of user flow nor reflects on how these motives might lead to products and services whose configuration risks drawing users' escape motivations in a 'backwards' direction, such that they lose themselves without self-actualizing gain. (p. 167)

My findings support previous research arguing that there is a need to broaden our understand of currency beyond the monetary value as defined by the real financial economy (Castronova, 2005; Goggin, 2012; Jacobs, 2012; Lehdonvirta et al., 2009; Reynolds, 2016; Schüll, 2012; Zelizer, 1997). What was clear from my interviewees was the notion of multiple currencies; specifically, the importance of time and the design mechanics in place to ensure that players 'lost track of time.' Time playing the game holds incredible value to game companies. In *Addiction by Design*, Schüll (2012) builds on the work of Livingstone (2005) when she writes about players' use of money to 'suspend clock time' rather than represent financial value. As Livingstone (2005) writes, 'Time is liquidated to become an essential currency of the problem gambler ... it may well be the most important and significant currency' (p. 527).

When we begin to examine social casino games, incorporating what we know about the players, the

environment, and the underlying business practices of social casino operators, the concerns about these games are warranted. As history informs us, public health advocates once voiced concerns that packs of candy cigarettes were ‘so real looking it’s startling,’ and that tobacco companies were ‘trying to lure youngsters into the smoking habit’ (Minnesota Tobacco Document Depository, as cited in Klein & St Clair, 2000, p. 363). At that time, public health researchers could not argue that candy cigarettes *cause* experimental tobacco smoking behaviour in children. However, results of studies could support the claim that ‘candy cigarettes provide opportunities for children to engage in smoking-related play’ (Klein et al., 1992, p. 30) and companies are ‘selling the social acceptability of smoking’ (p. 27). This history is particularly interesting because it illustrates the significant power the public health community had on candy cigarettes. Conversely, social casino games are intentionally presented as something entirely different—a harmless form of gaming, distinctly separate from regulated gambling—similar to what the candy cigarette manufacturers did until research began to indicate the need to protect young people from products that promote the social acceptability of smoking and the need for more targeted primary prevention efforts (Klein et al., 2007).

This study’s limitations need to be addressed. First, technological innovation significantly outpaces research in this field. This study also offers only a snapshot of some professional perspectives—future research should seek to build on these important findings. Given the global nature of social casino games, it may be expected that some historical and cultural differences were also not captured in the data. Additionally, my research is grounded in a constructivist approach, seeking to provide a contextualized understanding of social casino professionals’ perspectives. There is some caution required in extrapolating the findings to other digital games and other professionals.

Future studies should work toward an understanding of the environmental context surrounding these games, particularly with respect to the protection and prevention of gambling-related harms to youth. We need to understand how broader social, industrial, and technological forces combine to shape individual behaviours and perceptions. Finally, future research needs to examine if/how game design education addresses the convergence of gambling and gaming.

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Patterns of Disciplinary Involvement and Academic Collaboration in Gambling Research: A Co-Citation Analysis

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Abstract: The purpose of this study was to investigate the current academic research foci in peer-reviewed studies on gambling. The researchers used co-citation analysis as a bibliometrics method. All the gambling-related publications indexed in Scopus and Web of Science were identified, and their citation patterns were analyzed. Our dataset includes a total of 2418 peer-reviewed gambling studies published over the five-year period from 2014–2018. The VOSviewer tool was used to visualize bibliometric networks and reveal key clusters among the studies. The findings indicate that gambling researchers mostly cited authors from the disciplines of neuroscience, psychology, health science, and psychiatry. Only 2% of the cited authors were from other disciplines, such as those in the social sciences and humanities. The most frequently cited sources also reveal the same pattern: that gambling researchers mostly cited articles published in neuroscience, psychology, and health science journals. The publications reviewed deal mainly with the pathological and treatment aspects of gambling. We also discovered some unique patterns of citation and collaboration, focusing on topics such as videogames, social network games, family, business, and tourism.

Keywords: gambling, citation analysis, bibliometrics, academic disciplines

Introduction

As opportunities to gamble have increased over the last several years, accordingly the number of gambling studies has also grown (Dixon et al., 2015). Researchers from different disciplines, such as psychology (Ferrari et al., 2018; Hodgins et al., 2016), health (Williams & Volberg, 2014), and neuroscience (Yücel et al., 2017), have investigated gambling mainly from psychological and medical perspectives. A small number of gambling studies are produced by researchers from other academic disciplines, such as economics (Tymula & Whitehair, 2018) and business (Prentice & Zeng, 2018). The field of gambling research has been described as multidisciplinary (Baxter et al., 2019), according to the disciplinary continuum model that considers multidisciplinary to be 'researchers from different disciplines studying the same topic'; as opposed to interdisciplinarity, which is 'researchers from different disciplines *working together* to study the same topic' (Martin, 2017). Despite the multiple disciplines studying the topic of gambling, there is great concern that it is dominated by researchers in only a few disciplines, such as psychology and other medical fields (Eber & Shaffer, 2000; Hancock & Smith, 2017; Nicoll, 2019). This raises a question: If researchers are unaware of the breadth and

variety of current research because of a tendency to focus on results published only in their own field, could this cause a delay in knowledge transfer across disciplines (Baxter et al., 2019; Rinia et al., 2001)? And more importantly, if a research field is dominated by researchers in only a few academic disciplines, might researchers then tend to focus on common problems only in familiar ways and thus hinder the expansion of the field (Price, 1963)?

Bibliometrics have been widely used as a reliable and valid method to reveal the knowledge structure of a research field (e.g., involved authors, institutions, journals, and disciplines, as well as collaborations among those authors and institutions) (Culnan, 1986; Stehmann, 2020). A major advantage of bibliometrics is its proven capacity to explore, organize, and analyze large amounts of quantitative parameters for citation data from a variety of studies (Garfield, 1979b; Stehmann, 2020). Using a bibliometrics method, this study aimed to measure and analyze certain indicators in the gambling field, such as journals, disciplines, and collaborations among published authors and institutions. To achieve this, the researchers used a co-citation analysis, which identifies relationships between

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papers that are regarded as important by academic authors (Kessler, 1963; Small & Griffith, 1974).

Purpose of the Study

Mapping the research field helps researchers to utilize a birds-eye-view perspective, assists policy makers to identify and prioritize key areas within a research field, and permits readers to see collaborations among authors by viewing broader collections of citations. This study analyses citations across the metadata of peer-reviewed gambling studies in the five countries where most of the literature is produced (Australia, Canada, New Zealand, UK, and USA). The following research questions (RQs) are addressed by means of co-citation analysis:

- RQ1: How concentrated are gambling researchers within specific academic disciplines?
- RQ2: How closely do gambling researchers collaborate within and across academic disciplines?
- RQ3: To what extent are the patterns of citation and collaboration in the field of gambling studies unique in comparison to similar fields of research?

Method

Bibliometrics generally involves counting citations to other publications in a body of literature within a scholarly discipline (Culnan, 1986). This study used a type of citation analysis that is one form of bibliometrics or quantitative bibliography (Pritchard, 1969).

The Article Selection Process

Scopus and Web of Science were searched to identify relevant studies. These databases cover many academic disciplines, such as psychology, health, computer science, psychiatry, business, tourism, and education. We used the advanced search function with the broad search term 'gambl*' to ensure that all relevant studies would be identified. The search parameters used to select articles were: Document Type 'article', Language 'English', and Countries/Regions 'Australia, Canada, New Zealand, UK, USA'. The time span selected was 2014 to 2018 in order to prioritize current collaborations in gambling studies, and because some previous reports (e.g., Cassidy et al., 2013) covered the period up to 2013. The initial search was conducted on 7 August 2019 and yielded 5135 hits. We downloaded bibliographic data for all 5135 citations. All citations were imported into Thomson Reuters EndNote X9 (a reference management software program) and duplicates were excluded by application of the EndNote function 'Remove Duplicates'. One of the researchers then scanned all the articles by reading the abstracts to check whether they were suitable for the purpose of this study. To be included, the article had to be peer-reviewed and have gambling as a primary component (i.e., the central topic of the article). Articles were

eliminated if they mentioned the term 'gambling' but were actually about other topics (such as standard gamble, a medical term) or where 'gambling' was used as a synonym for risk. After implementing these inclusion and exclusion criteria, a total of 2418 peer-reviewed articles published between 2014 and 2018 from (in alphabetical order) Australia, Canada, New Zealand, the UK, and the USA were retained for analysis.

The Systematic Mapping Process

A citation occurs when the author of one paper mentions or refers to another paper (Wang et al., 2016). Over time, scholars have come to accept that documents or authors that are heavily cited have a significant impact on and make significant contributions to the advancement of the field (Hallinger & Kovačević, 2019). To identify top cited sources, associated disciplines, and relationships among papers, citation analysis is used in many disciplines. Citation patterns also have been employed to derive maps of the structure of networks within scientific fields (Gilbert, 1977). While there are several techniques in research literature mapping, co-citation is among the most accurate for mapping scientific fields (Boyack & Klavans, 2010) and is commonly used in various disciplines. Co-citation occurs when two papers are cited together within another paper. Co-citation analyses have a high degree of reliability (Fellnhöfer, 2019) and identify 'invisible colleges' (Gmür, 2003). The degree of co-citation is defined as 'the number of times two documents have been cited together; this] provides a natural and quantitative way to group or cluster the cited documents' (Small & Griffith, 1974, p. 19). Co-citation analysis measures the number of documents that have cited any given pair of other documents (Garfield, 1979a; Small, 1973).

We used the software program CiteSpace (Chen, 2006) to combine the Scopus and Web of Science files. VOSviewer (van Eck & Waltman, 2009) was used to create visual representations or 'network maps' of relationships among the gambling research papers and to cluster identifications based on co-citation. VOSviewer was preferred because it provides clear depictions of the data (Fellnhöfer, 2019) and because previous studies have shown that it provides reliable and valid results (e.g., see Li et al., 2019; van Eck et al., 2010). Each cluster was analyzed and interpreted for similarities to prominent papers, cited references, research areas, authors, journals, and institutions. VOSviewer also supports text mining, which helps to construct the networks by terms extracted from titles and abstracts in the English-written data (Li et al., 2019). To identify the academic disciplines of the authors, we used the first author's affiliated field, which is similar to the approach used by González-Valiente et al. (2019) and Reynolds et al. (2020).

Results

The results of our co-citation analysis are presented visually in Figs. 1 and 2. We discovered 60,077 authors who cited research on gambling for the five year period from 2014–2018. We used VOSviewer to generate a co-citation map that displays similarities in the scholarship of 992 authors; a threshold of at least 20 citations was used for selections (Fig. 1). The map groups the gambling researchers into four main ‘clusters,’ and each cluster is indicated by a specific colour. The co-citation map displays nodes, each representing a different author. The size of the node reflects the number of the authors’ co-citations, and the size of the clusters denote their significance. The links reflect the relationships between co-cited authors. Since the main aim of this study is to identify citation patterns in the academic discipline and not to identify specific authors, the authors’ names were anonymized.

From left to right, cluster 1 (blue) includes 226 authors, mainly from the health sciences or public health disciplines; cluster 2 (green) comprises 239 authors, mainly from psychology; cluster 3 (yellow) includes 81 authors from psychiatry; and cluster 4 (red) comprises 426 authors from neuroscience. In terms of author numbers, cluster 4 is the largest, and most of the authors are in the area of neuroscience. The closer the two clusters, the higher they are related. In other words, gambling studies over the five year period from 2014–2018 have mainly cited researchers from the neuroscience discipline.

Cluster 4 (red) represents the strongest focal citation point related to gambling studies over the five-year period from 2014–2018. This cluster is composed of authors who mainly have a neuroscience background. Within this cluster, the most frequently cited neuroscience studies mostly focused on topics such as the decision-making process, risky decisions, individual differences in decision making, near misses, and impulse control. In cluster 4, researchers used different data collection tools, including but not limited to:

neuropsychological tests to assess basic cognitive functioning, gambling tasks, impulsiveness questionnaires, impulsiveness scales, and MRI- and fMRI-related images. Our findings indicate that neurocognitive researchers were highly cited in recent gambling studies. More specifically, when the distribution of the most cited authors’ disciplines are examined, nearly half (43%) of the top-cited authors are from the neuroscience discipline (Fig. 2). According to the network map (Fig. 1), while researchers mostly cited sources within neuroscience, there are also citation networks linked to the psychology and psychiatry disciplines.

Cluster 2 (green) includes researchers mainly from the psychology discipline. In this cluster, researchers mostly focused on the treatment of pathological and problem gamblers. The authors were also interested in other treatment aspects of gambling, such as the effectiveness of cognitive behavioural therapy, motivational treatments, guidelines for practice in treating gambling-related problems, as well as barriers to treatments and self-help. Twenty-four percent of the highly cited gambling researchers were included in this cluster. According to the network map, researchers in psychology more often collaborate with researchers in the health sciences than neuroscience.

The third largest cluster (blue) mainly includes researchers from the health sciences and public health disciplines. Researchers in this cluster mainly focused on problem and pathological gamblers. They were also interested in issues such as depression, personality disorders, addictive behaviours, and therapy. In this cluster, researchers used data collection tools such as the Canadian Problem Gambling Severity Index and the South Oaks Gambling Screen to identify pathological gamblers. Briefly, this cluster mainly focused on the medical aspects of gambling. There is a strong citation collaboration between the health sciences and psychology. This cluster comprises 23% of the top-cited authors.

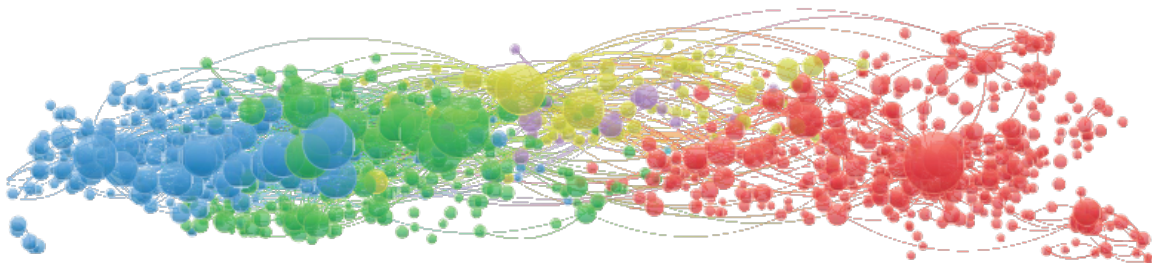


Fig. 1. Citation Network Map for Authors of Gambling Research (threshold of at least 20 citations)

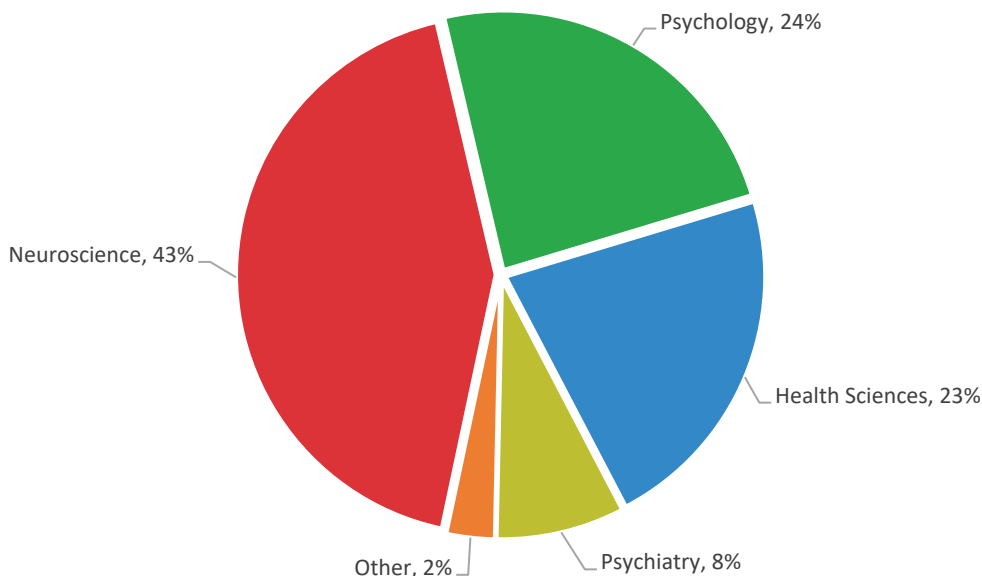


Fig. 2. Disciplinary Distributions in the Cited Sources

Finally, cluster 3 (yellow), gathers researchers mainly from the psychiatry discipline. The researchers here focused on gambling disorders, treatment of gambling disorders and of pathological gamblers, reducing gambling severity, and symptom control. Researchers in this cluster used data collection tools such as the Gambling Symptom Assessment Scale, Structured Clinical Interview for DSM-IV/V, and depression scales. Cluster 3 (psychiatry) acts as a bridge between different academic disciplines in gambling studies. Researchers from psychiatry collaborated with scholars in the health sciences, psychology, and neuroscience. Eight percent of the top-cited authors are in this cluster. According to our results, only 2% of the authors are from other disciplines, such as the social sciences and humanities.

In order to deeply examine the disciplinary distributions, the networks between the sources in the gambling studies were examined. The networks between cited sources also demonstrate the same pattern (Fig. 3). The ten most frequently cited journals in gambling studies are listed in Table 1. We used the

journals’ self-descriptions to assign them to disciplinary categories, except when terms overlapped or were used differently by different journals. This approach and these parameters gave us a comprehensive look at the field’s metadata. These journals originate from disciplines such as neuroscience, psychology, the health sciences, and psychiatry (Table 1). This finding also supports our previous findings that gambling studies are largely based in neuroscience, psychology, psychiatry, and the health disciplines. In a recent bibliometric study on online gambling, Stehmann (2020) examined the most cited studies in online gambling and gaming and identified similar journals, such as *Journal of Gambling Studies*, *Addiction*, *The American Journal of Psychiatry*, *Psychology of Addictive Behaviors*, and *NeuroImage*. Stehmann (2020) concludes that there is a multidisciplinary but not interdisciplinary scope in online gambling and gaming research, especially regarding the areas of psychology, psychiatry, and mental health.

Table 1
Top Cited Sources

Source	Citations (2014–2018)	Discipline
<i>Journal of Gambling Studies</i>	6392	Interdisciplinary
<i>Addiction</i>	2619	Health
<i>The Journal of Neuroscience</i>	1716	Neuroscience
<i>International Gambling Studies</i>	1579	Interdisciplinary
<i>Psychology of Addictive Behaviors</i>	1459	Psychology
<i>The American Journal of Psychiatry</i>	1354	Psychiatry
<i>Addictive Behaviors</i>	1151	Psychology
<i>International Journal of Mental Health and Addiction</i>	1142	Health
<i>Psychopharmacology</i>	1109	Health
<i>NeuroImage</i>	1082	Neuroscience

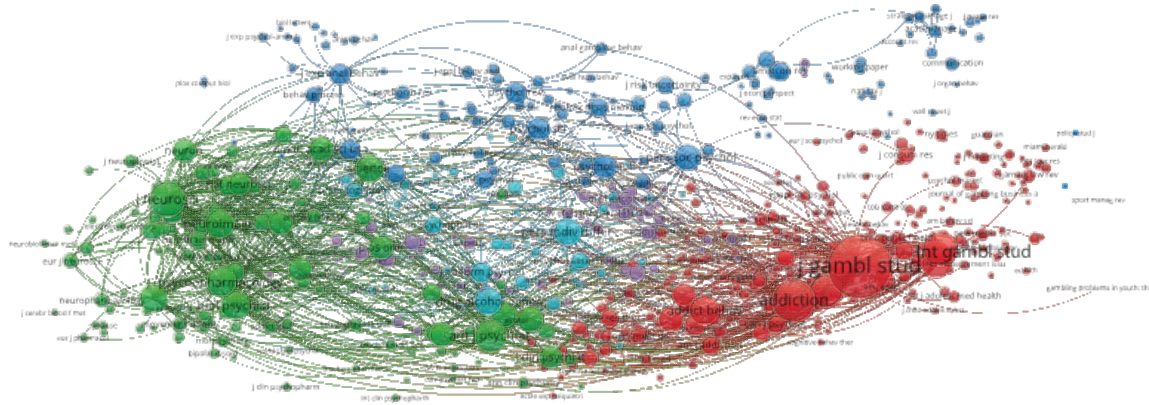


Fig. 3. Citation Network Map for the Sources of Gambling Research (minimum number of citations per source: 20)

Notably, the editors of the journals we examined also have backgrounds in the same disciplines. Most of the most frequently cited journals in Table 1 publish clinical and treatment research, mainly conducted in laboratory settings. *The Journal of Neuroscience*, for example, publishes topics of interest to those who work on the nervous system. Likewise, *The American Journal of Psychiatry* publishes a full spectrum of topics related to mental health diagnoses and treatment research. We could not find a leading education or socio-cultural studies journal that comprehensively focuses on gambling. It should be noted that new gambling journals, which focus on socio-cultural, educational, historical, political, and other aspects of gambling, might have been launched after 2018 (e.g., *Critical Gambling Studies*).

We find that some of the patterns of citation in the field of gambling studies are unique. First, the increase in online gambling has led some researchers to migrate from videogaming and/or social gaming studies to gambling studies. We identified many citations in (relatively) different (or uncommon) journals, such as *Computers in Human Behavior* (426 citations) and *Cyberpsychology, Behavior, and Social Networking* (352 citations). Some gambling researchers from the social sciences examined the connections between game addiction and problematic gambling; for example, gambling studies in *New Media & Society* (124 citations) focused on videogaming and problematic social network games. Migrations of researchers from social network games research (i.e., Facebook games) to gambling has occurred recently, as is evident in the aforementioned journals. This is partly because social network games and some videogames appear to replicate the basic structural design of gambling activities and are free to play; the prizes awarded are generally virtual currency. There is a growing concern about changes in the way that videogames are played. Namely, there is potential for

videogame or social network game players to be exposed to factors (e.g., in-game purchasing) that might encourage problematic gambling. This has also motivated social science researchers to study gambling (Macey & Hamari, 2018). At the same time, there has also been significant migration of gambling researchers to videogaming studies.

We also discovered 64 citations to *The Journal of Gambling Business and Economics*, which was launched in 2009 for academics and practitioners who have an interest in the economic and business aspects of the rapidly growing international gambling market. Similarly, we identified 38 citations from the *Journal of Marriage and Family*, which publishes gambling studies focusing on the social aspects of betting and gambling. These were by researchers in various disciplines, such as gender studies. Other citations, to tourism journals such as *Annals of Tourism Research* (81 citations) and *Tourism Management* (97 citations), which focus on tourism and travel perspectives of gambling (such as the effects of casino gambling on a community and tourism development in cities), were made by researchers mainly in the social sciences.

Discussion and Conclusion

The co-citation analysis techniques and visualizations in this bibliometric study allow us to examine the disciplinary distributions of cited authors and sources in gambling studies over the last five years. This study reveals that medical and psychological factors dominated researchers' collective focus in the recent literature. These results are consistent with previous bibliometric studies (e.g., Baxter et al., 2019).

Our findings support and update those of Cassidy et al. (2013), who concluded that 56% of editorial board members from the two leading gambling journals have backgrounds in psychology, psychiatry, or medicine. The majority of those who self-identify as Gambling Studies scholars are psychologists by training (Cassidy

et al., 2013). Our study also supports previous findings that the gambling field is still dominated by scholars in the neuroscience, health, and psychology disciplines, which mainly focus on diagnostic and treatment aspects of gambling (Cassidy et al., 2013). In a previous metadata study, Shaffer et al. (2006) examined the prevalence of primary keywords in gambling citations and found that 'pathological gambling' was by far the most commonly used term, followed by 'risk taking', 'decision making', and 'addiction'. According to their findings, 'pathology', 'risk-taking', 'decision making', and 'addiction' have dominated gambling research. This mirrors our findings that the pathological aspects of gambling are highly studied, and the field is mostly dominated by neuroscientists and health-discipline researchers. Overall, gambling research continues to be dominated by a focus on 'problem or pathological gambling.' These results indicate that other areas may need more attention.

To enhance our understanding of gambling, greater collaboration is needed with underrepresented disciplines, such as those within social sciences and humanities. As Cassidy et al. (2013) also highlighted, the tradition that gambling studies are conducted in laboratory settings (and commonly use psychology students as their subjects) might miss the real-world gambling context. Interviews with senior gambling addiction researchers such as Garry Smith (Nicoll & Johnson, 2018) and Robin Room (Room & Nicoll, 2020) point to the important perspectives that sociology might bring to gambling studies by focusing on the broader political and social contexts in which people and institutions provide, consume, and regulate gambling. Genuinely interdisciplinary gambling studies would see researchers from medicine and health sciences collaborating with experts on culture and education within the social sciences to focus on relatively unexplored aspects of gambling spaces, practices, and products. Without this new work, our understanding of the benefits and harms related to gambling will remain limited by the methods and theoretical frameworks of psychiatry, neuroscience, and psychology.

Limitations

Our review covers gambling articles whose primary authors are based in Australia, Canada, New Zealand, the UK, and the USA, and which are indexed in the Scopus and Web of Science databases. These five countries have all experienced significant deregulation of gambling over the past three decades, and there is significant collaboration between researchers through conferences, journal editorial boards, co-publications, and think tanks. For future studies, different research databases might be included in the co-citation analysis. Though VOSviewer has been validated as a reliable networking map tool, our categorizations are solely based on the VOSviewer outputs.

Cluster interpretation is one challenging aspect of co-citation analysis (e.g., Fellnhöfer, 2019) because the borders between clusters can be rather vague, making interpretation difficult. In our study, we assigned disciplines to a particular cluster based on most of the researchers' background fields. However, it is very possible that researchers within a cluster also might publish articles in different academic disciplines. For example, a researcher placed in the psychology discipline might have published an article within the neuroscience discipline, either solely or collaboratively. Finally, authors might be affected by several factors when citing publications, such as the academic reputation of the source or author, accessibility and the type of article, and/or requirements from peer-reviewers (Canavero et al., 2014; Cronin, 1984).

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General and Gambling-Specific Types of Control: Extending Mental Health Theory and Concepts to Problem Gambling

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Abstract: *Rationale:* A key factor in our understanding of problem gambling is control: over gambling outcomes (illusion of control) and behaviours (gambling self-efficacy). Research in the gambling field rarely looks beyond these gambling-specific types of control to more general types when identifying predictors of gambling problems. This work begins to integrate control concepts from the mental health and problem gambling fields by examining the importance of a more general type of control from the Stress Process Model: sense of control over life events. *Methods:* Closed-ended questionnaire and open-ended interview responses from 30 frequent (weekly or more) gamblers were used to examine whether general and gambling-specific types of control are linked as predicted in a conceptual model of control. *Results:* For some people, beliefs about one type of control are extended to inform beliefs about another type of control. In many cases, understandings of outcomes in life inform beliefs about controlling gambling outcomes and behaviours. *Conclusions:* Different types of control work together, and general understandings can translate into gambling-specific beliefs. Future work is needed to confirm and specify these relationships and clarify their importance to understanding the development of gambling problems.

Keywords: sense of control; illusion of control; gambling self-efficacy; Stress Process Model

Introduction

A key factor in our understanding of substance and behavioural issues is control. Consider the definition of problem gambling: “persistent and recurrent maladaptive gambling behaviour” characterized by *an inability to control gambling* [emphasis added], leading to significant deleterious psychosocial consequences: personal, familial, financial, professional and legal’ (APA 1994, as cited in Blaszczynski & Nower, 2002, p. 487). The concept of problem gambling is largely defined through a loss of control, and problems are experienced because the person has lost control of their gambling. Loss of control is the guiding principle behind screening tools (Reith, 2007) and is central to the public stigma perceived by those experiencing gambling problems (Hing et al., 2016).

Part of the lack of control is gambling self-efficacy: ‘an individual’s belief as to whether or not they could resist an opportunity to gamble in a given situation’ (Casey et al., 2008, p. 230). Another type of control frequently implicated in the development of gambling problems is illusion of control: ‘the belief

that one can increase the probability of winning, and the belief that the probability of a win, having been increased, is greater than it really is’ (Goodie, 2005, p. 482). Research repeatedly finds that low gambling self-efficacy and high illusion of control are related to gambling harm, as will be reviewed below.

Gambling research rarely looks beyond these gambling-specific types of control to more general types when identifying predictors of gambling problems. This may be due in part to the limited use of broad mental health theories to understand gambling behaviours and harm. Sense of control is the ‘learned generalized expectation that outcomes are contingent on one’s own choices and actions’ (Mirowsky & Ross, 2003, p. 174) and is an important concept in mental health research. While gambling self-efficacy is about (gambling) behaviours, sense of control and illusion of control are about (general and gambling-specific) outcomes.

Could sense of control help us understand the development of gambling-related problems? Because it is generalized, sense of control might influence both illusion of control and gambling self-efficacy. If so,

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experiencing harm from gambling might be the result of a combination of different levels of general and gambling-specific types of control. To date, limited theory and research has focused on how these types of control might work together. Further, although control is a defining aspect of problem gambling, relatively few researchers have examined the various types of control qualitatively, meaning the presence or loss of control is understood as one universal experience across gamblers (Fu & Yu, 2015; Tang & Wu, 2010).

This work aims to integrate control concepts found in mental health and problem gambling theory and research by articulating the relationships between the more general sense of control and the gambling-specific illusion of control and gambling self-efficacy. This integration can be beneficial to both areas: broadening the scope of mental health research to include problem gambling and improving the understanding of problem gambling onset. This study advocates for the use of mental health theory and concepts in the examination of gambling harm by examining how general and gambling-specific types of control correspond to each other using in-depth interviews. In considering these types of control together and qualitatively, this study shows the diversity in how frequent gamblers experience and understand control.

Control in Gambling and Mental Health Theory and Research

Illusion of Control, Gambling Self-Efficacy, and the Integrated Pathways Model

Illusion of control (Langer, 1975) is a person's belief that they can influence and thereby increase their odds of winning at gambling. According to the Integrated Pathways Model, all people with gambling problems develop irrational beliefs about the odds of winning during increased gambling involvement (Blaszczynski & Nower, 2002). Through frequent play with family and friends, people learn to believe that using certain techniques will increase their chances of winning (Blaszczynski & Nower, 2002; Oei & Raylu, 2004). Illusion of control can also be increased by certain game features, like the near miss (Clark et al., 2013). Illusion of control contributes to risky gambling behaviours by leading to greater overconfidence and increased betting (Blaszczynski & Nower, 2002; Goodie, 2005; Miller & Currie, 2008).

Gambling self-efficacy (Casey et al., 2008) is a person's belief in their ability to resist gambling in various situations. According to the definition of problem gambling used by the Integrated Pathways Model, when gamblers are unable to refrain from gambling in tempting situations, it leads to frequent and destructive gambling (Blaszczynski & Nower, 2002). People may learn to resist gambling opportunities by learning and adopting the behaviours and beliefs of their friends and family or

through past successful experiences at resisting opportunities and verbal persuasion from others (Hodgins et al., 2004).

Gambling self-efficacy is founded on the general concept of self-efficacy (Bandura, 1986), which is a person's belief in whether or not they can effectively carry out a particular action (Ross & Sastry, 1999). Self-efficacy and sense of control are both forms of perceived personal control—beliefs about a person's control over their own life outcomes (Ross & Sastry, 1999). However, while self-efficacy is about performing actions and is focused on a particular realm like gambling, sense of control is about achieving outcomes and is broadly oriented to all life areas (Mirowsky & Ross, 2003; Ross & Sastry, 1999).

Studies have consistently found that both illusion of control and gambling self-efficacy are related to gambling behaviours and gambling problems. Those with gambling problems tend to have high illusion of control (Fu & Yu, 2015; Goodie & Fortune, 2013; Källmén et al., 2008; Leonard & Williams, 2016; Orgaz et al., 2013; Steenberg et al., 2002). High risk gamblers also typically have low gambling self-efficacy (Casey et al., 2008; Fu & Yu, 2015; May et al., 2003; St-Pierre et al., 2015; Winfree et al., 2014; Wu et al., 2013).

Sense of Control and the Stress Process Model

Sense of control (Mirowsky & Ross, 1989) is a belief that outcomes in life are dependent on one's own behaviours. It is stable across life domains and focuses on the person's control over their own life. People who believe that they can shape their own life have a high sense of control. People that feel like some other force is in control, like luck, fate, or God, feel powerless and have a low sense of control (Mirowsky & Ross, 2003; Ross & Sastry, 1999). Powerlessness is 'the cognitive awareness of a discrepancy between one's goals and the means to achieve them' (Mirowsky & Ross, 2003, p. 60).

Sense of control is a sociological concept that varies across social status and is based in objective circumstances—a lifetime of social interactions and personal experiences (Mirowsky & Ross, 2007; Mirowsky et al., 2000). Specifically, 'success in controlling past adversities is interpreted as evidence of competence in mastering current adversities' (Pearlin & Skaff, 1996, p. 243). This feeling of competence is carried into future experiences and is used to achieve similar positive ends, which over time translates into a generalized belief in a sense of control. Conversely, past failures are viewed as evidence of a lack of ability to manage current problems, which can lead to feelings of powerlessness, 'escalating passivity in the face of difficulties, and more and more distress' (Ross & Sastry, 1999, p. 385).

The Stress Process Model explains how sense of control impacts mental health. Certain behaviours increase exposure to stressors, which can increase the

risk for mental health problems (Aneshensel, 1992; Pearlin, 1999). Social and personal resources influence whether behaviours trigger stressors and whether stressors lead to poor mental health (Aneshensel, 1992). As a personal resource, sense of control plays this buffering role in two ways. First, sense of control encourages problem solving, which can prevent behaviours from leading to stressors (Turner & Roszell, 1994). Second, sense of control allows people to understand negative outcomes as something they can manage or to which they can adapt (Turner & Roszell, 1994). As a result, those with high sense of control appraise fewer life events as being stressful, which can prevent stressors from leading to mental health issues (Turner & Roszell, 1994).

To the author's knowledge, the Stress Process Model and sense of control have not been used to study problem gambling. Some studies have looked at the related concept of locus of control (Rotter, 1966), which is a cognitive psychology concept. While sense of control focuses on personal control and remains stable across all life domains, locus of control focuses on universal control—beliefs about the control others have over their lives—and can vary across life events or areas (Ross & Sastry, 1999). People with an internal locus of control feel in control of outcomes in life and those with an external locus of control attribute outcomes to forces external to themselves, like powerful others, luck, or chance (Mirowsky & Ross, 2003; Ross & Sastry, 1999). An external locus of control—like low sense of control—is associated with poor mental health (Mirowsky & Ross, 2003; Ross & Sastry, 1999).

A few studies find that people with an external locus of control experience problems with their gambling (Capri et al., 2017; Meyer de Stadelhofen et al., 2009; Pace et al., 2015; Shumlich et al., 2018). This may be the result of an association between external locus of control and illusion of control (Capri et al., 2017; Meyer de Stadelhofen et al., 2009). In contrast, one study reports a relationship between internal locus of control and problem gambling (Hopley et al., 2012), while others find no relationship (Clarke, 2004; Malkin & Syme, 1986).

A Theoretical and Research Disconnect

Although there are similarities between the Integrated Pathways Model and the Stress Process Model—they both focus on mental health, include people's beliefs, and view control as rooted in personal and social learning experiences—there is an important difference: each model includes concepts of control that are absent in the other. In doing so, these models miss the opportunity to gain a full understanding of how control can help explain mental health generally and gambling problems specifically.

The Stress Process Model misses types of control that may be specific to particular mental health issues, like illusion of control and self-efficacy. For its part, the Integrated Pathways Model misses more general types of control, like sense of control, that may inform, work with, or be more influential than gambling-specific types of control.

In line with this theoretical gap, limited research has focused on how these types of control relate to each other. The lone study of illusion of control and gambling self-efficacy finds that gamblers with high gambling self-efficacy have low illusion of control (Casey et al., 2008). The authors argue that this is a logical consequence of those with gambling problems having both high illusion of control and low gambling self-efficacy.

One study examining the link between locus and illusion of control finds that external locus of control correlates positively with illusion of control (Chan et al., 1986). This suggests that locus of control influences gambling behaviour through illusion of control (Hong & Chiu, 1988). In contrast, another study reports that those with gambling problems are more likely to have both illusion of control and an internal locus of control (Carroll & Huxley, 1994). It is possible that because those with gambling problems are known to develop exaggerated beliefs of their level of control over gambling games, they should also tend to believe in their control over life events (Carroll & Huxley, 1994; Meyer de Stadelhofen et al., 2009).

Only two studies have examined the link between concepts like sense of control and gambling self-efficacy. One finds that self-efficacy is positively correlated with gambling self-efficacy (Casey et al., 2008). Similarly, gamblers who believe in fate control—that life events are predetermined but can be influenced—tend to have low gambling self-efficacy (Tang & Wu, 2010). A person's general beliefs about life events can influence their beliefs about specific contexts, such as gambling, which guides their behaviour in those situations (Tang & Wu, 2010).

These few studies support the notion that the various types of control might be associated. According to these four studies, illusion of control is negatively associated with gambling self-efficacy, it is unclear how sense of control is related to illusion of control, and sense of control is positively linked with gambling self-efficacy.

A Conceptual Model of Control

A conceptual model of how general and gambling-specific types of control might work together is outlined in Fig. 1. This model is informed by the Stress Process Model, the Integrated Pathways Model, and the research on control referenced above.

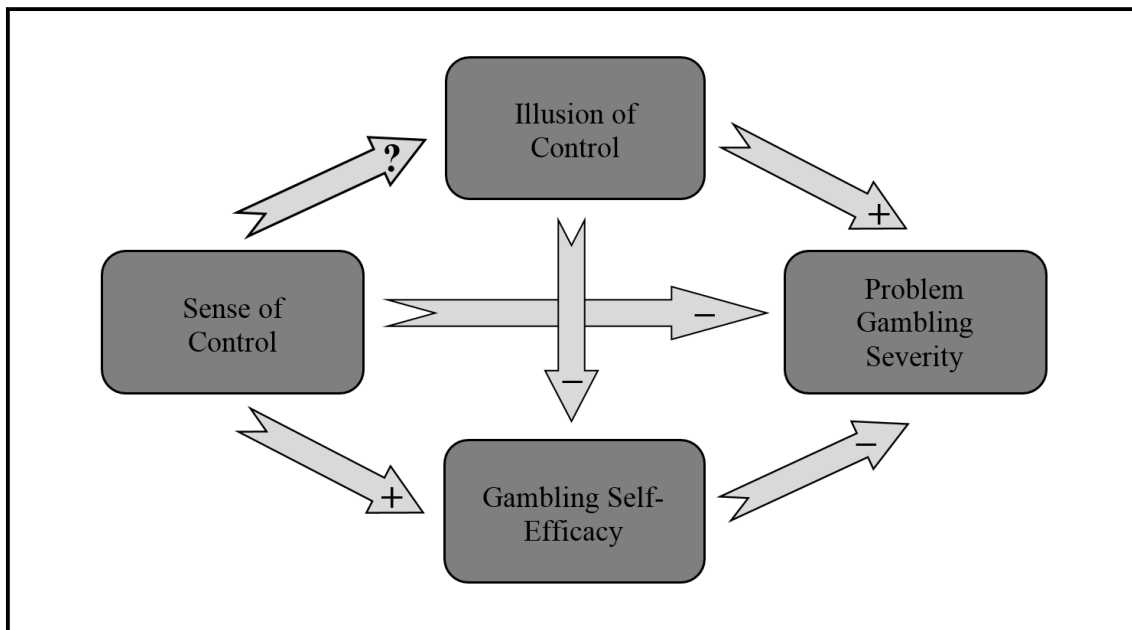


Fig. 1. A Conceptual Model of Control for Gambling Problems

Sense of Control. Gamblers with a low sense of control have less confidence in their abilities to prevent stressors or overcome them and experience more gambling-related difficulties as a result (Turner & Roszell, 1994). Gamblers with a high sense of control typically have high gambling self-efficacy. General beliefs about life events extend to inform beliefs about one's ability to control gambling behaviours (Tang & Wu, 2010).

Illusion of Control. Because gamblers with high illusion of control are overconfident in their ability to win, they engage in risky gambling behaviours that lead to a downward spiral of losses (Goodie, 2005; Miller & Currie, 2008). Gamblers with high illusion of control also typically have low gambling-self efficacy. Gamblers develop both through their own experiences and learning from others (Blaszczynski & Nower, 2002; Clark et al., 2013; Hodgins et al., 2004).

Gambling Self-Efficacy. Gamblers with low gambling self-efficacy experience more gambling problems. They are unable to stop themselves from gambling when faced with tempting opportunities, which leads to excessive play (Blaszczynski & Nower, 2002).

Study Aim

The current paper uses open-ended interview responses to examine whether general and gambling-specific types of control are linked as predicted in the conceptual model (Fig. 1).

Methods

Participants

In-depth interviews were conducted with 30 frequent gamblers (weekly or more). Most are 55–59 years old (23.3%) or 25–29 years (16.7%), male (63.3%), and self-identify as Caucasian (86.7%). Frequent

gamblers are a relevant group for study because they more often meet the threshold for problem gambling (Currie et al., 2006; Currie et al., 2008). The sample is evenly split by most frequent type of game: skill or chance. Among skill gamblers, most played sports lotteries (5/15) or poker (3/15). Among chance gamblers, most played the lottery (7/15) or scratch tickets (6/15). Over the past year, skill gamblers played on average 7.67 games/person and chance gamblers played 4.87 games/person.

Procedures

Participants were recruited using convenience sampling (posters, print and electronic classified advertisements) and snowball sampling. Participants completed a closed-ended questionnaire followed by an in-depth semi-structured interview. Ethics approval was obtained from the University of Toronto's Research Ethics Board.

Closed-Ended Questionnaire

In order to determine each participant's levels of control, scales from the closed-ended questionnaire were converted into high/low dichotomies. Scale results are included to provide context for the qualitative results presented below, which are the focus of this study.

Sense of Control. The Mastery Scale's (Pearlin et al., 1981) seven items measure the degree to which people feel they are in control of the forces that affect their lives, using a scale from zero to 28. It has good internal consistency reliability (.77; Marshall & Lang, 1990). The average score in the 2010 Canadian Community Health Survey, a nationally representative survey, is 19.53. As such, scores of 20 or more were coded as high sense of control, and lower scores as low sense of control. The

average score in this sample is 21.6 and the median is 22, with 23 participants classified as having a high sense of control.

Illusion of Control: The Beliefs about Gambling Questionnaire (Jonsson et al., 2002) is a compact measure with 14 items focusing on various aspects of illusion of control—superstition, skill, belief in randomness, and expectation—using a scale from zero to 14. The internal consistency for the scale is acceptable (0.65; Källmén et al., 2008). Results on the average score in the general population are unavailable, though the median level among a sample of gamblers without problems is three (Källmén et al., 2008). As such, scores of three or below were classified as low illusion of control, and four or above as high illusion. The average score in this sample is 4.2 and the median is four, with 17 participants classified as having a high illusion of control.

Gambling Self-Efficacy: The Gambling Abstinence Self-Efficacy Scale's (Hodgins et al., 2004) 21 items ask participants to rate their confidence in abstaining from gambling in certain situations, resulting in a scale from zero to 105. This scale has good internal consistency (0.93) and retest reliability (.86; Hodgins et al., 2004). Results on the average score in the general population or non-problem gambling samples are limited. The mean levels among a stratified sample of people with gambling problems who recently quit are 58 and 68 (Hodgins et al., 2004). The higher mean level is used here to reflect the use of a sample of frequent gamblers and not those experiencing gambling problems. A score of 68 or below was considered a low level of gambling self-efficacy, and 69 or above as high efficacy. The average score in this sample is 67.0 and the median is 62, with 19 participants classified as having a low gambling self-efficacy.

In-Depth Interview

The open-ended interview focused on in-depth discussions of the three types of control, and lasted 20–90 minutes. For sense of control, participants were asked how they understand past events, and what forces will help them achieve future goals. For illusion of control, respondents discussed how they understand their past and will understand their future gambling outcomes. For gambling self-efficacy, participants were asked whether and how they were and will be able to manage their gambling behaviours. The interview ended by discussing whether and how their understandings in these three areas are related.

Analysis

Interview responses were analyzed deductively and inductively with NVivo. The main focus was searching for themes to understand frequent gamblers' experience of the three types of control. First, focused coding was conducted using core and sub-themes from the literature and study aim (Emerson et al., 1995). The conceptual framework in Fig. 1 was used as the

foundation for the systematic analysis (Brazil et al., 2010). Open coding was then used to identify additional emerging themes (Emerson et al., 1995; Brazil et al., 2010). Using the entire list of repeated themes, each transcription was analyzed using line-by-line coding. The theme 'links between types of control' occurred 54 times. Within these, discussion of sense and illusion of control made up 61.8% of the coded text, sense of control and gambling self-efficacy made up 28.1%, and illusion of control and gambling self-efficacy made up 10.1%.

Results

As the focus of this research is to improve our understanding of the interrelationships between general and gambling-specific types of control, each individual relationship between the three types of control will be examined in the sections below.

Sense of Control and Illusion of Control

Fourteen respondents spoke about the relationship between their understanding of life events and their views on gambling outcomes. Six have different levels of sense of control and illusion of control. Eight have similar levels of each. For some of these people, a generalized belief of control over life outcomes translates into a belief in control over gambling outcomes (Meyer de Stadelhofen et al., 2009).

Three gamblers have high sense and illusion of control. There are two types of beliefs that are translated among this group, both of which are focused on the person's own influence. One is a general belief in or preference for control. One person explained her feelings in this way: 'I'm a true believer that you can be the master of your own destiny. If there's some way I can control my own fate, then I want to know that I lost because I did something wrong.' This person's belief in her ability to control her future leads her to believe that she can also control or at least improve her chances of winning. She prefers skill games because she feels they offer her this control.

A second belief that is translated is the importance of hard work. As one participant put it, gambling is 'another skill you can learn if you put your mind to it.' A person can become a more adept gambler by putting in the time and effort. Specifically:

You need to educate yourself on what you're getting in and what the risks are, and what skills and the math behind. So it's not only just a positive attitude, it's also I look for games where I have the mathematical and intellectual edge.

This person believes they can become more successful at gambling in the same ways they can succeed in life: through effort, education, and thoughtful decision-making.

Five participants have low sense and illusion of control. Some believe that the same external force that

influences their lives also influences their gambling outcomes. One person who believes in fate explained her gambling beliefs in this way:

When I look at 6/49 tickets, because I know it's thousands and thousands to one we're going to win and it's less for the jackpot, but I just figure if it's destiny, meant to be, that it'll—it may happen. ... Because of fate, I figure one day I'll hit it, I'll probably hit it, when the time is right. Every time I lose, I think 'well, the timing's not right.' You'll only win when you can handle it. My husband says he can handle it; I said, 'You know, I don't think so,' because we argue because I want to give some to my mother and my sister.

Because the odds of winning the lottery are so low, this person believes that fate and not chance determines whether or not she hits the jackpot. Winning and losing are not only meant to be, but meant to be for a reason—whether the time is right or whether you can handle it.

Other respondents with low sense and illusion of control think that different external forces are responsible for their life events and gambling outcomes. They believe that while God or fate influences their life experiences, chance influences their gambling outcomes. As one person explained:

God is involved in everything, big time. ... You can't decide to win on a slot machine, that's just sort of where it's lined up, how many times it wins, supposedly 40% of the time. If you hit in that position you win, I call that an open window. If you hit an open window, you're going to win, if you don't, you're not going to win. I don't think fate has anything to do with that.

For these people, the specific belief in control is not directly translated. While they believe an external force is responsible for both their life events and gambling outcomes, there is a disconnect as the forces at play are not the same: a powerful other and chance.

Five participants have high sense of control but low illusion of control. For these respondents, effort makes a difference in life but not in gambling. As one person said:

If you put nothing into something you're going to get nothing out of it. With gambling it's a little bit different. You can put a lot into it and still get nothing. You can put a little into it and get a lot out of it.

While hard work is needed to succeed in life, gambling is instead about the odds of winning and chance, which cannot be influenced.

In some cases, beliefs about life outcomes are extended to inform beliefs about gambling outcomes.

This can include a belief in personal control, hard work, or fate. In other cases, different forces are at play. Some believe that their own effort or powerful others, like God, influence their lives, but their gambling is determined by chance.

Sense of Control and Gambling Self-Efficacy

Fifteen people spoke about the link between their understanding of life events and their ability to control their gambling. Seven have different levels of sense of control and gambling self-efficacy. Eight have similar levels of each, as predicted by the conceptual model. For some of them, general beliefs about life influence gambling-specific behaviours (Tang & Wu, 2010).

Three participants have high sense of control and high gambling self-efficacy. These people generally feel in control of their lives, including their gambling behaviours. One person described her ability to stay in control in this way: 'Because I know myself, I know I'm not a follower, I'm a leader and I know when to say no, like when I spend enough on tickets.' She feels that taking charge and being decisive allows her to control her life and limit her gambling. Another person echoed the importance of decision making around gambling: 'I control what happens in my life, I control where I'm going and what I'm doing, and it's the same thing with gambling. I control how much I spend, I control if I spend.' Both of these quotes illustrate how control permeates to gambling through specific decisions about play—whether and how much. They also speak to the confidence developed among those with a high sense of control as described in the literature. These people feel with a level of certainty that they can direct their lives as well as manage their gambling behaviours.

Five respondents have low sense of control and low gambling self-efficacy. For these people, the two types of control are related concepts: a lack of control over life outcomes is linked with an inability to control gambling behaviours. In contrast to those in the previous group, these people generally feel out of control: 'I don't have control over my life right now or my gambling. I wish I had more control over it.' Interestingly though, they do not blame their lack of control of their gambling on the external force that controls their lives. One person explained:

It's not what God wants me to do with my life, gambling away all the stuff that He's providing me with. If I sit down and say 'God provided me with a job, and God provided me with a home, and God provided me with this, that and He provided me with a brain to make good choices but I'm making bad ones. Why am I doing this?' I know this isn't what He wants me to do.

People in this group feel that God is a positive force in their lives, providing them with many meaningful things. They are the ones responsible for their inability

to do what God expects of them and control their gambling behaviours.

Six people have high sense of control and low gambling self-efficacy. Interestingly, several of these participants say that they make a conscious decision to gamble at high levels, despite their self-efficacy score indicating a lack of control. Gambling in this way is understood as a personal choice in line with other life decisions. One person explained his reasons for gambling as follows:

[Gambling is] a personal choice, but it's the idea that I live one day at a time that says to me 'The heck with it, I'm going to enjoy myself.' The heart attack, that did a number on me and I have a strong attitude as to one day at a time. I live for today, to hell with tomorrow, and come what may. In that sense it affects my gambling.

Despite having different levels of sense of control and gambling self-efficacy, this person makes their decisions about life and about gambling in the same way: by doing what they enjoy while they can.

People understand their choice to gamble at high levels in other ways too. One person explained how gambling fits into his general outlook on life:

And personal choices—gambling, why did I do it? Why did I spend so much money? I wanted to benefit from something easy in my life. So, my wife said to me 'You know, you just can't be happy with what you have in life now, you know and work towards that goal of getting that big screen TV, you always look for the easy way out.' I'm the type of person that thinks bigger, faster, better, stronger. Get it done, let's do it now.

For this person, gambling is a way to satisfy a general desire: getting something quick with little effort. People in this group feel they are making the decision to gamble at high levels. They have troubles resisting opportunities to gamble because they do not want to resist them—they want to take advantage of them.

For some people, level of control over life outcomes extends to gambling behaviours. Being in control of both can be achieved through confidence and decisiveness. In contrast, a lack of control in both areas is understood as originating from separate sources. While powerful others like God explain life events, the person is to blame for their lack of control over gambling behaviours. Beliefs about life events are extended through to beliefs about gambling behaviours for those who feel in control of their lives but have difficulties resisting gambling opportunities: both are understood as personal choice.

Illusion of Control and Gambling Self-Efficacy

Three respondents spoke about the relationship between their control over gambling outcomes and

gambling behaviours. Consistent with the model, they all spoke about how low illusion of control leads to high gambling self-efficacy.

One person spoke about the things she can and cannot control about her gambling:

I control how much I spend; I control if I spend. I don't control if I win, but I can control how much I lose—that's 100% within my power: 'Ok, well I lose \$3 and that's it.' Winning, that's out of my control; but losing is 100% within my control—you don't lose what you don't spend.

Her understanding that gambling outcomes are based on chance leads this person to limit her gambling. She knows she cannot control the game outcomes, so she instead controls what she can: how she gambles.

Another respondent explained the impact of knowing the odds of winning in this way: 'You know you're going to lose so you kind of limit yourself a little bit more. If it's a constant, you're losing, you're losing, you're losing, then you're not going to go back on a regular basis.' Experiencing the small odds of winning through repeated losses can drive home the fruitfulness of continued gambling and encourage restraint.

Although all three of these people spoke about limiting their gambling, two of them actually have low levels of gambling self-efficacy. For these participants, it seems that low illusion of control does not match up with high gambling self-efficacy because thoughts do not translate into actions. Despite understanding the need for controlled gambling, these people are not able to play in this way.

Knowing the low odds of winning can lead people to limit their gambling. When people acknowledge they cannot control gambling outcomes, which can be reinforced through repeated losses, they instead focus on the things they can control: whether they play and how much. Intentions to control gambling, however, do not always lead to such actions.

Discussion

In an effort to integrate concepts of control from mental health and problem gambling research and theory, this paper examined the links between general and gambling-specific types of control using 30 in-depth interviews with frequent gamblers. The results from this study are most valuable in that they provide an enlightening, authentic, and valuable account of how frequent gamblers understand the workings and interrelationships of various types of control in their lives. This more critical consideration of the concept of control demonstrates that frequent gamblers subjectively experience and attribute meaning to control in heterogeneous ways.

As hypothesized in the literature (Carroll & Huxley, 1994; Meyer de Stadelhofen et al., 2009), this study finds that, in some cases, beliefs about control for life

outcomes translate into similar beliefs about control for gambling outcomes; namely, beliefs in personal control, hard work, and fate. However, in other cases, different forces are at play. Several participants spoke about how their life is influenced by their own effort or a powerful other, but that gambling outcomes are determined by chance. These mixed results are in line with the limited but conflicting research on the link between sense of control and illusion of control (Carroll & Huxley, 1994; Chan et al., 1986).

More work is needed to clarify the relationship between these two concepts. It might be worth examining not only the levels of sense of control, but the types as well, as different external forces can function differently (Mirowsky & Ross, 2003; Ross & Sastry, 1999; Rothbaum et al., 1982). For example, feeling powerless by attributing outcomes to God might provide meaning that neutralizes the typically negative impact of powerlessness on health (Ross & Sastry, 1999). Further, it might be useful to examine illusion of control as two belief structures—primary and secondary. Illusion of primary control involves behaviours and beliefs aimed at changing the gambling environment (i.e., gambler's fallacy), which fits with the general conceptualization of illusion of control used in this paper. Illusion of secondary control involves beliefs and behaviours that attempt to influence gambling outcomes through supernatural forces, like luck and God, which may tie more directly to sense of control (Ejova et al., 2015).

Consistent with Tang & Wu (2010), general beliefs about life influence gambling behaviours for some people in the current study. For those with high sense of control and gambling self-efficacy, confidence and decisiveness are important for both domains. For those with high sense of control and low gambling self-efficacy, personal control is influential for both areas, even though levels of each type of control are different. In contrast, different forces can be involved for each type of control, even when the levels are the same. For those with low levels of sense of control and gambling self-efficacy, powerful others explain life events, but lack of control over gambling behaviours is the person's responsibility. Future work should more closely examine the conditions under which general beliefs about life shape control over gambling behaviours, in particular the role played by specific external forces as discussed above. Studies should also consider personal choice in more detail, as some respondents spoke about not wanting to resist gambling opportunities.

Few respondents considered how their control over gambling outcomes is related to control over gambling behaviours. This is in line with the literature; this connection is rarely examined specifically and is instead inferred from how each relates to gambling problems. Two of the three participants who discussed this link reported that they limited their gambling to avoid falling victim to the low odds of winning, but their closed-ended responses suggest they are not able to

resist opportunities to gamble. It seems that intentions to limit gambling do not necessarily lead to controlled behaviours for these people. The disconnect between intentions and actions is well documented in literature on health behaviour change (Gallagher & Updegraff, 2012). Future research should explicitly explore the link between illusion of control and gambling self-efficacy, while also examining the link between intentions and actions for gambling self-efficacy.

Though this study makes several important contributions, it suffers some limitations. There may be some bias in the results due to the self-selection of participants, as certain types of people might have been more likely to self-identify as frequent gamblers and be willing to participate in this study. Also, results for illusion of control should be interpreted with caution as there is no agreed upon measure, and the Beliefs about Gambling Questionnaire only differs by level of problems along the dimension of skill (Källmén et al., 2008). Further, most of the study questions were retrospective in nature, which may have reduced the accuracy of responses. However, since this study was mainly interested in how people experience control, how they remember and interpret their experiences is highly important. Finally, because the interviews were face-to-face and audio recorded, it is possible that some participants underreported negative experiences in order to avoid perceived stigma. This misreporting was reduced as much as possible by using open-ended questions to follow-up on answers given in the closed-ended questionnaire.

This work took an important first step in examining the developed conceptual model of control by considering how the three types of control work together. Future studies should seek to confirm and build on these findings, as well as examine the additional relationships outlined in the model; namely, how the types of control relate to gambling problems. While several studies support the links between high illusion of control and low gambling self-efficacy with gambling harm, no studies have examined sense of control specifically for its impact on gambling problems. By examining the entire conceptual model of control, future studies can identify the role played specifically by sense of control, as well as gain a full understanding of the importance of control in the development of gambling problems.

To shed further light on gambling onset, future work should also apply the Stress Process Model to the study of gambling problems. This theoretical model has the potential to increase the sociological understanding of problem gambling by explaining and emphasizing the importance of social status, stress, and resources—factors already known to be important for onset (Afifi et al., 2010; Barnes et al., 2017; Dowling et al., 2017; Holdsworth et al., 2015). A full application of the Stress Process Model could improve our understanding of how social status and social and personal resources like sense of control work together to explain gambling

problems, and whether sense of control influences gambling problems by buffering stress and influencing stress appraisal.

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Health Promotion Strategies to Address Gambling-Related Harm in Indigenous Communities: A Review of Reviews

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Abstract: The evolution of commercial gambling and its expansion into digital arenas has increased opportunities for people all over the world—including Indigenous people—to gamble. While there is considerable evidence for the suitability of a health promotion approach to improving the health and well-being of Indigenous communities worldwide, the evidence-base does not extend to the field of gambling research. A systematic review of reviews was conducted to identify relevant reviews in crossover areas of interest: interventions to address gambling-related harm in Indigenous populations and/or health promotion interventions on related health or behavioural outcomes. The quality of reviews was critically assessed—13 fit the inclusion criteria. Principal themes were characterised as being either related to ‘cultural,’ ‘structural,’ or ‘methodological’ factors. Findings indicate that an appropriate model of health promotion to address Indigenous gambling would necessarily involve careful consideration of all three elements. Applying a health promotion approach to the context of Indigenous gambling harms is increasingly relevant considering recent conceptual shifts in key areas, but there is currently limited evidence to guide the implementation and evaluation of such strategies. This review highlights what published evidence is available to strengthen future research in this area.

Keywords: gambling, addiction, Indigenous, health promotion, Aboriginal

Introduction

The harms associated with gambling are a public health concern globally. It is not the case that all gambling products cause harm; however, there is an association between greater exposure to, and involvement in, gambling activities and an amplified risk of people developing gambling disorders (GDs) based on a number of identified risk factors (Hing et al., 2014b). In the International Classification of Diseases (ICD-11; World Health Organization, 2009), GDs are classified as neurodevelopmental disorders; in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*, GDs are identified in the Substance Related

and Addictive Disorders category as ‘non-substance behavioural addictions’ (American Psychiatric Association, 2013). The evolution of commercial gambling and its expansion into digital arenas has increased opportunities for all people—including Indigenous² people—to gamble.

International research has found higher rates of GDs among culturally and linguistically diverse groups compared to general populations (Oei et al., 2019). Gambling harm also appears to be more widespread in Indigenous populations when compared to those in non-Indigenous populations (Dyall, 2010), including in Australia (Hing et al., 2014a; Stevens & Young, 2009;

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² ‘Indigenous’ is used as an umbrella term to reflect ‘the experiences shared by a group of people who have inhabited a country for thousands of years, which often contrast with those of other groups of people who reside in the same country for a few hundred years’ (Cunningham and Stanley, 2003, p. 403). ‘Indigenous’ groups vary between regions and populations, for example: ‘Aboriginal Australian’ or ‘Torres Strait Islanders’; ‘First Nations’ to describe populations indigenous to Canada and the United States; ‘Native Hawaiians’ for Hawaii’s Indigenous; and ‘Tangata Whenua’ for the Māori of New Zealand.

Welte et al., 2007), New Zealand (Dyall & Hand, 2003; Gray, 2011), and Canada and the United States (Westermeyer et al., 2005; Williams et al., 2011). For example, a significantly higher proportion of Indigenous Australians (80%) engaged in commercial gambling activities, especially electronic gaming machines, compared to the general population (64%) (Hing et al., 2014a). In 2016, the prevalence of GDs (moderate risk/problem gamblers) in New Zealand relative to the total population was 4.6% for Māori, 1.8% for Pacific Islanders, 8% for European/Other, and 2.9% for Asian people (Thimasarn-Anwar et al., 2017). In Canada and the United States, Indigenous people also have some of the highest rates of gambling and gambling-related harm (Hagen et al., 2013; Korn, 2001; Momper, 2010; Williams et al., 2018).

Social determinants of health contribute markedly to persistent health inequalities Indigenous people are known to experience. These include dispossession caused by colonisation; subsequent disconnection to cultural practices and traditional economies important for health and well-being; the socio-political status of such groups within the broader society (e.g., lack of representation); and the presence of interpersonal and institutional racism (Clarke et al., 2007; Mowbray, 2007; Raylu & Oei, 2004; Rintoul et al., 2013). With regard to the latter, there is growing recognition of the importance of cultural safety³ (and related concepts such as cultural competency), within and beyond healthcare organisations, to achieving health equity (Curtis et al., 2019).

Research suggests that GDs and other behavioural addictions make up a significant component of the overall disease burden for Indigenous peoples of colonised countries. Indigenous worldviews are often cited as being closely tied to place, culture,⁴ and kinship systems (Joukhador et al., 2004; Walker et al., 2012). Harms from gambling are likely to affect Indigenous people in complex and distinct ways (Breen & Gainsbury, 2013; Hing et al., 2013). Changes to the gambling environment, such as the shift of gambling activities from community settings to organised urban venues, have resulted in a range of sweeping socio-economic impacts for some Indigenous people (McMillen & Donnelly, 2008). There is evidence indicating that flexible strategies, designed in response to local contexts and influences, are more suitable to address gambling harms in complex social settings than a standardised approach (Breen et al., 2012). Strategies designed to address gambling harm in such communities should aim to be multi-level, with a public health basis focusing on prevention, early intervention, and harm reduction (Fogarty et al., 2018).

³ Cultural safety encompasses a critical consciousness where healthcare professionals and healthcare organisations engage in ongoing self-reflection and self-awareness (i.e., by examining the potential impact of their own culture on clinical interactions and healthcare service delivery) and hold themselves accountable for providing culturally safe care (Curtis et al., 2019).

A public health approach often takes the form of community-based interventions or programs to reduce gambling harms as experienced by individuals and at-risk groups (Breen & Gainsbury, 2013). It also means incorporating Indigenous gambling risk and resilience factors, and potentially modifying public health aims, to develop and implement culturally relevant prevention and treatment programs. Health promotion is a set of actions to foster good health and well-being that sits within the public health model. Health promotion activities (HPAs) aim to promote and improve the health and well-being of individuals, communities, and whole populations through empowering, participatory approaches (Chambers et al., 2015).

There is considerable evidence highlighting the use of health promotion practices to improve the lives of Indigenous people (Clelland et al., 2007; McPhail-Bell et al., 2018; Vujcich et al., 2018). Culturally appropriate HPAs have been applied in areas such as sexual health promotion, substance misuse and addiction, and chronic disease prevention, and may also offer a suitable framework for designing gambling prevention and intervention programs (Fogarty et al., 2018). However, health promotion has not yet been extensively explored in gambling research. This overview attempts to address this gap in knowledge, as we believe there is much that can be learned from related fields (i.e., sexual health promotion, substance misuse, and chronic disease prevention).

An overview⁵ of Indigenous health promotion targeted at addressing behavioural disorders (such as gambling) is warranted for several reasons. First, gambling harm minimisation and prevention is a growing area of inquiry in the health promotion arena with relevance for Indigenous populations. Second, the distinct social, cultural, and familial influences of gambling on Indigenous peoples means that mainstream mechanisms to address gambling harm cannot be simply transferred to such settings. Third, a definitive summary of current evidence relevant to Indigenous health promotion, that we argue can be applied to prevention and intervention strategies to reduce gambling-related harm, is vital to direct practice, policy, and future research in this area.

Review Questions

The main goal of this review is to document and synthesise the knowledge of health promotion strategies considered relevant and applicable to address gambling-related harm in Indigenous communities. Two review questions directed this research:

⁴ UNESCO (2008) defines culture as the set of distinctive spiritual, material, intellectual, and emotional features of a society or social group, that encompasses, not only art and literature, but lifestyles, ways of living together, value systems, traditions, and beliefs.

⁵ A systematic review of systematic reviews.

1. What is the breadth and quality of systematic reviews that assess health promotion strategies for improving health or changing behaviours, and/or addressing gambling-related harm, in Indigenous communities?
2. What are the implications for future research and practice of applying health promotion strategies to address gambling-related harm in Indigenous communities?

Methods

Overviews of reviews can be useful when the review's aim is to appraise and combine the extent and quality of relevant evidence on a pre-specified topic (Thomson et al., 2010). They may also be used to generate new insights and understanding in the absence of evidence (Becker & Oxman, 2008) by analysing the findings of reviews on a particular intervention of interest through contrast and comparison (Smith et al., 2011). To facilitate knowledge translation related specifically to applying HPAs to address gambling harm, an interdisciplinary approach was important. This overview examined the cross-over literature where Indigenous health and gambling research converges with HPAs in related health fields (i.e., alcohol and other drug use, tobacco use, sexual health, and chronic disease prevention).

The PICO formula (population, intervention, comparison, and outcomes) was used to define this structured overview of cross-literature (Higgins & Green, 2011), and a review protocol was registered with PROSPERO [registration number CRD42019119548⁶]. Data is presented according to Cochrane review standards (Higgins & Green, 2011) including a PRISMA statement (Moher et al., 2010) outlining the search and selection process.

Data Collection and Analysis

Searches

In September 2017, an initial scoping search was conducted of the following electronic databases: Google Scholar, ProQuest Central, PubMed, Scopus, and Web of Science. The first 10 pages of results were manually scanned for relevance. Search terms were expanded to include a combination of health/medical and social science databases and websites to reflect the multidisciplinary nature of the study. Full search terms and search strings used across all databases (adjusted to database specific requirements, where necessary) are set out in Table 1. A second systematic search informed by, and updating, the original search was conducted in February 2019. Saturation was determined and searching was concluded.

Table 1

Search Terms and Results

Database	Query	Number of Studies
Google Scholar	allintitle: (indigenous OR aboriginal OR maori OR "torres strait") AND review AND ("health promotion" OR gambling OR gaming OR betting)	15
ProQuest Central	TI (((gambling OR gaming OR betting) AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review) OR ("Health Promotion" AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review))	20
PubMed	(((review[Title]) AND (aborigin* [Title/Abstract] OR indigenous [Title/Abstract] OR maori [Title/Abstract] OR native [Title/Abstract] OR "first nations"[Title/Abstract])) AND (gambling [Title/Abstract] OR gaming [Title/Abstract] OR betting[Title/Abstract])) OR (((review[Title]) AND (aborigin* [Title/Abstract] OR indigenous [Title/Abstract] OR maori [Title/Abstract] OR native [Title/Abstract] OR "first nations"[Title/Abstract])) AND "Health Promotion"[Title/Abstract])	37
Scopus	TITLE-ABS-KEY (((gambling OR gaming OR betting) AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review) OR ("Health Promotion" AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review))	447
Web of Science	TI = (((gambling OR gaming OR betting) AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review) OR ("Health Promotion" AND (aborigin* OR indigenous OR maori OR native OR "first nations") AND review))	5
Total:		524

Searches conducted September 2017 and February 2019

⁶http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42019119548

Study Selection

Titles/abstracts were screened against the inclusion criteria. This was an interpretive process whereby research questions and inclusion criteria were refined and refocused according to preliminary findings. The search strategy and outcomes are summarised in Fig. 1. Two authors independently assessed the screened reviews for eligibility, with discrepancies resolved by discussion with the review team. Full texts were obtained, and duplicates and immaterial reviews discarded.

Interventions of interest include: health promotion activities (HPAs) and other public health approaches (such as harm minimisation, harm reduction, harm prevention, and community-driven responses); addressing and/or reducing gambling-related harms; reporting on the impact of health promotion interventions for improving health or changing behaviours. For the purpose of inclusion, reviews were considered as having a health promotion focus if any of the following strategies were discussed in depth: improving public policy, social marketing, health education and skills development, community action, and creating supportive environments. Similarly, Indigenous health and well-being was defined broadly as

the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being, thereby bringing about the total wellbeing of their community, but not just the physical wellbeing of an individual. (NACCHO, 1989, p. 1)

Inclusion Criteria

Reviews were included if they: (1) were a systematic review; (2) had an Ottawa Charter strategy focus (building healthy public policy, creating supportive environments, strengthening community actions, developing personal skills, and reorienting health services; World Health Organization, 1986); (3) targeted the health and well-being of any Indigenous population and/or had Indigenous health promotion principles articulated (i.e., author reference to cultural safety/competence, community engagement and ownership, partnerships, holism, best practice, capacity development, sustainability, leadership, consultation, and participation); (4) investigated gambling programs and/or interventions; (5) were published between 2000⁷ and 2018 (inclusive); (6) were written in English; and (7) the title/abstract contained the search terms.

⁷ Searches were limited to reviews published after January 2000. Justification for this specified inclusion date is based on the topic becoming more publicised since the mid-2000s with growing

To be considered eligible for inclusion, papers also needed to meet the two mandatory criteria of Database of Abstracts of Reviews of Effects (NHS Centre for Reviews and Dissemination, 2002): (1) that there is a defined review question; and (2) that the search strategy included at least one named database, in conjunction with either reference checking, hand-searching, citation searching, or contact with authors in the field.

Exclusion Criteria

Studies were excluded if they were not published within the review parameters (i.e., non-systematic reviews, outside date range) or had insufficient discussion of the health promotion approaches targeting behavioural addictions of Indigenous groups.

Data Extraction

A rigorous and transparent data extraction process was employed in this review. The 'Data collection form for intervention review—randomised controlled trials (RCTs) and non-RCTs' of The Cochrane Collaboration was customised and applied to this review (Higgins & Green, 2011). The tool was piloted and refined leading to some new questions being added and irrelevant sections removed. One reviewer independently conducted a data extraction of the included reviews, which was cross-checked by a second reviewer. The following information was recorded: first author, year, country of first author; type of review, methods; number of studies and type of studies analysed; health area; target group; research aims; major findings (or authors' conclusions); and identified health promotion approach, if relevant. An Excel spreadsheet recorded the data items, which were then tabulated based on the GRADE approach to summarising findings used in Cochrane reviews (Dijkers, 2013).

Quality Assessment

To understand the strength of the synthesised knowledge presented in this review and ascertain if each identified paper met the minimum standard of quality for inclusion, reviews were critically assessed in a four-step process:

- Step 1: Non-peer-reviewed papers were excluded.
- Step 2: The type of review was determined and considered as a quality measure (Dijkers, 2013).
- Step 3: The use of established reporting guidelines and appropriate methodology (e.g., PRISMA) was noted.

research, publications, and government-sponsored public health initiatives in several countries, such as Australia, New Zealand, Canada, and US.

- Step 4: A purposefully designed quality appraisal tool was adapted from the Center for Evidence-Based Management's *Critical Appraisal Checklist of a Meta-Analysis or Systematic Review* (CEBMA, 2014) and applied to the remaining sample.

The adapted tool (Step 4) contained two sections and a total of 10 questions. Each included review was assessed against all the domains with assessments determined as ●, ◐, or ○. Reviews that fully addressed the criteria were labelled ●; reviews that addressed the criteria to some extent were assigned ◐; reviews that did not provide enough information for quality analysis, or answers could not be found in text, were assigned ○; or 'N/A' if the criteria was deemed not applicable. Quality appraisal was initially carried out by one author and then independently cross-checked by a second. Inter-rater reliability was calculated and recorded. Independent assessment by two members of the review team reduced bias and allowed for appropriate discussion. Quality assessment was for descriptive purposes only, did not result in any exclusions, and resulted in a narrative discussion of heterogeneity and publication bias where relevant.

Analysis

From the analysis, the extracted data was synthesised using a narrative approach (Popay et al., 2006). The summative evidence reported in the included reviews (the extracted data) was analysed according to narrative synthesis methods—a generic framework used to synthesize the evidence, and identify and textually describe meaningful patterns and themes in the included studies while also noting variations. It typically involves four stages: (1) developing a theory; (2) developing a preliminary synthesis; (3) exploring relationships within and between studies; and (4) assessing the robustness of the synthesis product (Popay et al., 2006).

Due to the expected heterogeneity of health areas, interventions, and outcomes, only descriptive analysis was planned (no meta-analysis). Thematic synthesis was conducted in three stages based on the extracted data (Thomas & Harden, 2008). Line-by-line coding of summary text generated descriptive themes, which developed into three overarching 'analytical themes.' We used the latter to frame the review findings and structure the discussion.

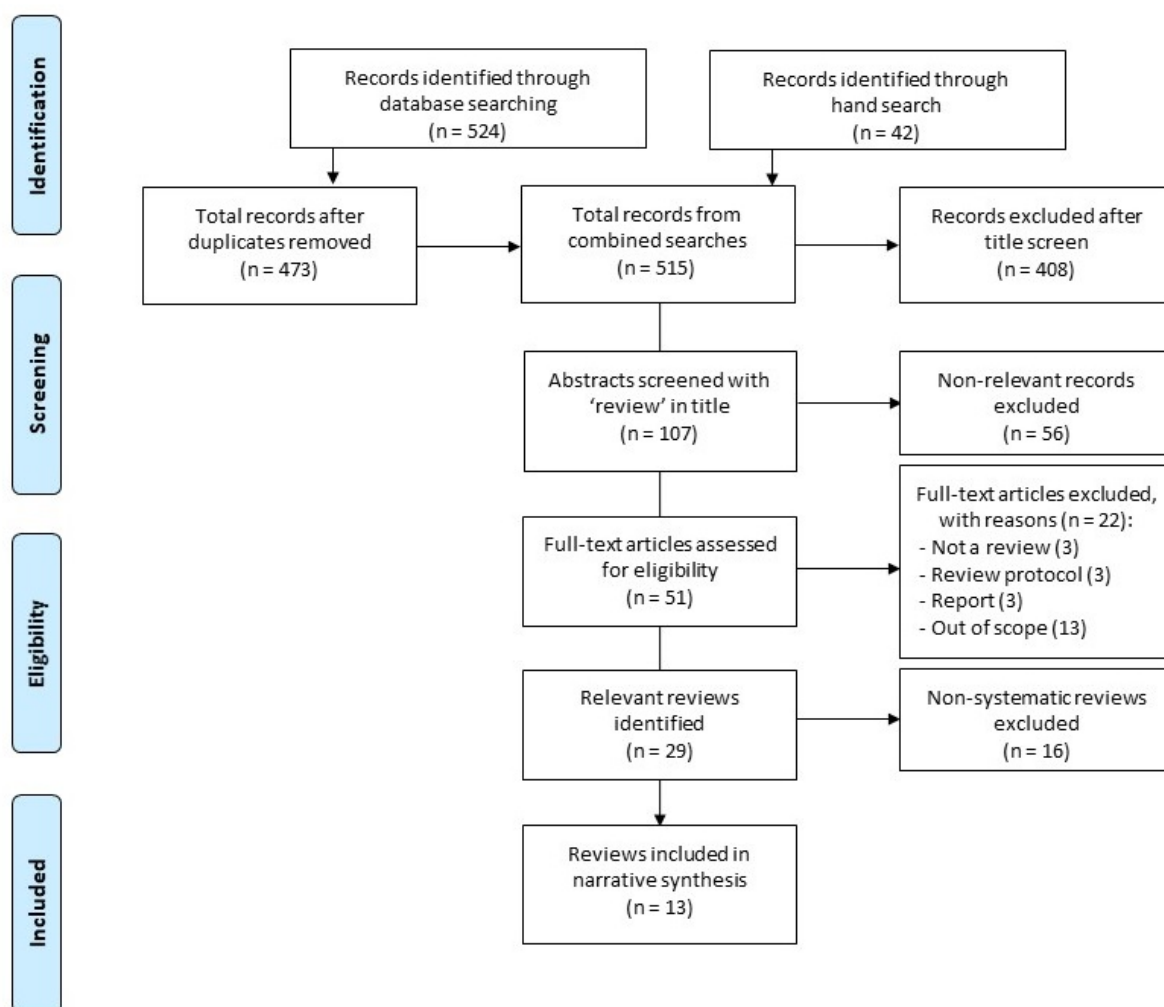


Fig. 1. PRISMA flow diagram

Results

The original international literature search yielded 566 citations, from which 51 full-text articles were retrieved and reviewed for inclusion. Search results and the selection process are summarised in Fig. 1. Twenty-nine papers were considered eligible for further consideration based on their relevance to our review objectives. Fig. 2 presents the number of reviews by year of publication to gauge trends in the literature over time. This sample includes non-systematic reviews and articles from 2018 identified in the updated search (this 1-year period is presented as a striped bar to distinguish it from the others which each represent a 3-year period). Sixteen reviews that were not transparent enough to be classified as ‘systematic reviews’ were excluded from further analysis (Fig. 1). The final sample (n=13) included 6 systematic reviews, 3 scoping reviews, 3 systematic searches, and 1 overview (Table 2). Reviews predominantly focused on Australia, Canada, New Zealand, and the United States; however, several

extended the scope to include other minority ethnic/cultural groups globally. Over half of the included reviews looked specifically at HPAs targeting Australian Indigenous populations (n=7) (Brusse et al., 2014; Ivers, 2003; Lokuge et al., 2017; MacLean et al., 2017; McCalman et al., 2016; Snijder et al., 2015). The balance addressed Indigenous HPAs in other countries (n=6) (Gould et al., 2013; Harfield et al., 2018; Jongen et al., 2017; McFarlane et al., 2016; Minichiello et al., 2015; Vujcich et al., 2018). Interestingly, all except one review (Minichiello et al., 2015) were led by an Australian author.

Articles were published between 2003 and 2018. The number of studies analysed in each separate review ranged from 4 to 118. With search periods reported from September 1978 to June 2017, collectively, this represents knowledge synthesis spanning almost 40 years. One review analysed quantitative studies only, one analysed qualitative studies only, and the remaining 11 reviewed primary studies of any design.⁸

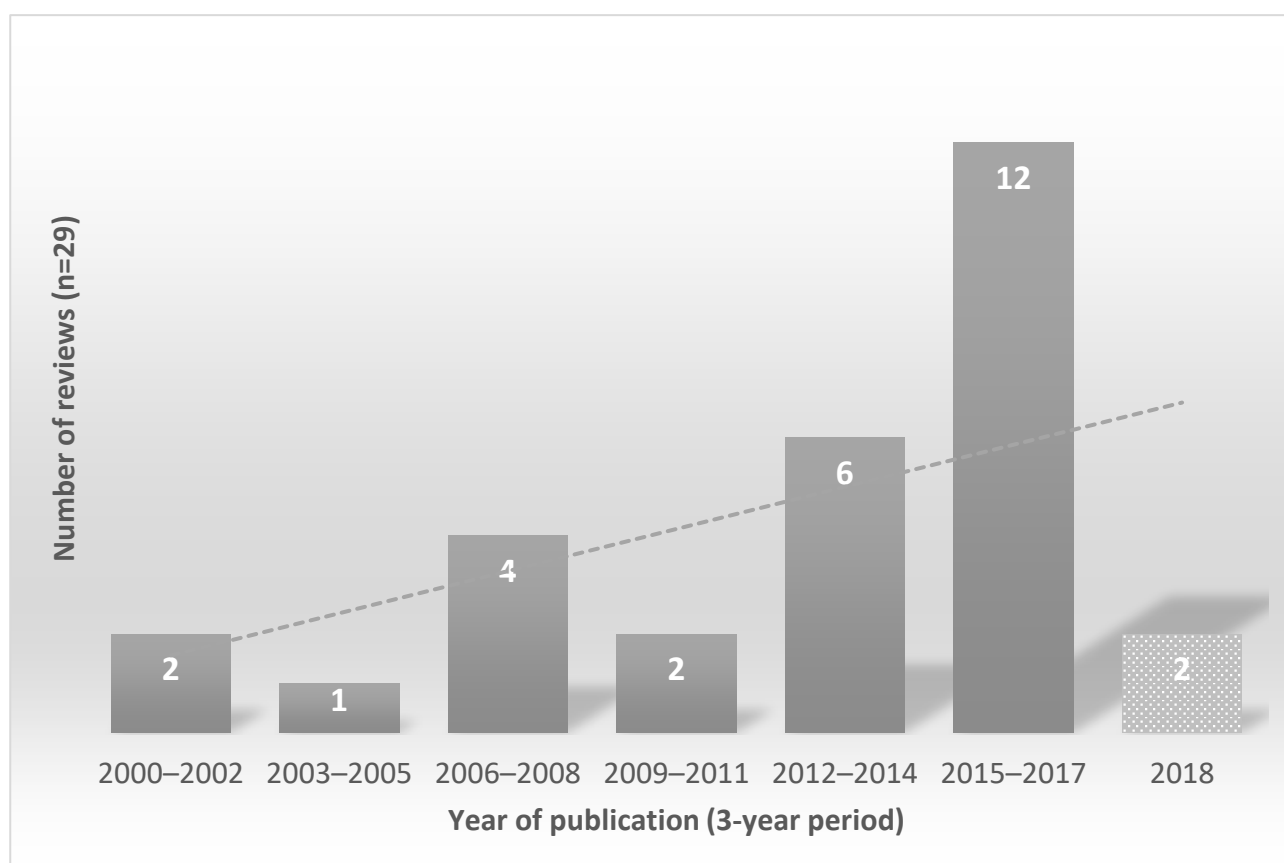


Fig. 2. *Charting Published Reviews*

⁸ Quantitative, qualitative, and mixed methods.

Table 2
Characteristics of Included Reviews

Author and year	Population	Review type (PRISMA Y/N)	No. Studies	Primary studies analysed ⁹	Quality measure
Brusse et al., 2014	Indigenous and non-Indigenous Australians	Scoping review (N) 2011–Nov 2013	17	Quantitative, qualitative, and systematic reviews	(not listed)
Gould et al., 2013	Indigenous people Aust., Canada, NZ, United States (US).	Systematic search/narrative synthesis (N) up to Oct 2011	21	Any design	Scottish Intercollegiate Guidelines Network (SIGN) for (quant studies) & Daly et al. 2007 (qual studies)
Harfield et al., 2018	Indigenous people Aust., Canada, NZ, US.	Scoping review (Y) Sep 1978–May 2015	62	Any design	(not listed)
Ivers, 2003	Indigenous Australians	Systematic review/audit (N) 1980–Mar 2001	4	Qualitative (with evaluative component)	NHMRC evidence rating system
Jongen et al., 2017	Indigenous peoples and other minority ethnic/cultural groups Aust., Canada, NZ, US.	Scoping review (Y) Jan 2006–Dec 2015	22	Any design (with evaluative component)	Effective Public Health Practice Project quality assessment tool
Lokuge et al., 2017	Indigenous Australians	Systematic review (Y) Nov 2009–2014	118	Any design (with evaluative component)	(not listed)
MacLean et al., 2017	Indigenous Australians	Systematic review (Y) up to Aug 2015	13	Quantitative	General assessed and assessment of Indigenous involvement
McCalman, 2014	Indigenous people Aust., Canada, NZ, US.	Systematic search (Y) 2002–2012	74	Any design (with evaluative component)	PARIHS ¹⁰ framework and EPHPP ¹¹ tool
McCalman et al., 2016	Indigenous Australians	Overview of reviews (Y) 2005–2014	6	Reviews	Peer-reviewed studies were used as a marker for quality reviews
McFarlane et al., 2016	Indigenous organisations globally (including Canada, NZ, Aust., US, Africa, China, UK, Sweden, and Solomon Islands)	Systematic search (Y) 1990–2014	25	Quantitative, qualitative	(not listed)
Minichiello et al., 2015	Indigenous people globally (including Canada, NZ, Aust., US, Taiwan, Pacific Islanders, and ethnic Fijians)	Systematic review (Y) 1994–2015	73	Any design (with evaluative component)	Public Health Agency of Canada Lessons Learned Data Extraction Guide & Well Living House quality assessment tool
Snijder et al., 2015	Indigenous Australians	Systematic review (Y) 1990–2015	31	Any design (with evaluative component)	Dictionary for Effective Public Health Practice Project Quality Assessment tool
Vujcich et al., 2018	Indigenous people Aust., Canada, NZ, US.	Systematic review (Y) up to June 2017	24	Any design	Critical Appraisal Skills Program Checklists

⁹ 'Any design' includes quantitative, qualitative, and/or mixed methods, or indicates that design type was not listed as an inclusion/exclusion criterion in this review.

¹⁰ Promoting Action on Research Implementation in Health Services (PARIHS)

¹¹ Dictionary for Effective Public Health Practice Project (EPHPP)

Reviews examined empirical research on HPAs to address the disproportionate burden of disease on Indigenous health and well-being in Australia and internationally. No reviews specifically focused on the use of HPAs to address gambling harm within Indigenous populations. However, four reviews looked at HPAs addressing smoking harm within the target population, focusing on: the effectiveness of self-determination strategies in program implementation (Minichiello et al., 2015); culturally targeted anti-tobacco messaging (Gould et al., 2013); social media and mobile software for health promotion interventions (Brusse et al. 2014); and culturally targeted harm reduction campaigns (Ivers, 2003).

Review authors primarily aimed to understand and synthesise evidence on measurable improvements in health and well-being associated with certain health promotion characteristics. The following results are organised according to the six topics discussed within this dataset: Indigenous Primary Health Care (PHC) characteristics (Harfield et al., 2018) and health promotion capacity (McFarlane et al., 2016); improving cultural competency (Jongen et al., 2017); promoting Indigenous cultural identity; measuring community participation (Snijder et al., 2015); implementing culturally targeted media campaigns (Brusse et al., 2014); and peer-led health promotion (Vujcich et al., 2018).

Indigenous Primary Health Care

The greatest distinction between Indigenous PHC service delivery and other models of care is consideration of culture—the defining characteristic of Indigenous PHC. Two reviews examined health promotion within this setting (Harfield et al., 2018; McFarlane et al., 2016). Harfield et al.'s (2018) synthesis of Indigenous PHC components found that local cultural values, customs, and beliefs were pivotal and underpinned all aspects of this service delivery model. Strategies for embedding culture in the context of Indigenous PHC were of central importance.

Exploring Indigenous PHC attempts to increase their health promotion capacity, McFarlane et al. (2016) investigated common enablers and barriers to organisational HPA implementation. In this setting, they reported that health organisations that implemented specific capacity building interventions (e.g., training and leadership development) were enabled by several factors including: management support, a skilled and knowledgeable workforce, external specialist assistance, resource allocation, leadership, and access to external partners to work on HPAs. Conversely, factors consistently reported as obstructing health promotion capacity building were: limited management support; a lack of dedicated health promotion staff (staff with limited skills or confidence in health promotion); competing priorities; and time and resource constraints.

Improving Cultural Safety

The impact of health promotion services and programs to increase cultural safety and, in turn, attempt to improve intermediate health outcomes was another area of investigation covered by the included reviews. Jongen et al. (2017) provide innovative examples of cultural adaptation and engagement strategies used by cultural competency services and programs. Their review contributes many potential approaches to inform future health promotion services and programs to improve cultural competency. However, a lack of systematic tools and approaches for measuring the presence, level, and contribution of cultural competency interventions to quality health care does little to strengthen the slow-growing evidence base.

Strategies to enable the expression of Indigenous cultural identities within general Indigenous health promotion interventions (Lokuge, 2017; MacLean et al., 2017) and tools (McCalman, 2016; McCalman et al., 2014) were also reviewed. Programs that included components to enable and support Indigenous peoples to express their cultural identity were reported to have positive health and well-being effects by MacLean et al. (2017). 'Cultural elements' include: visiting country and cultural sites; education in traditional cultural practices; hunting, fishing and eating bush foods; traditional games; yarning and sharing cultural stories; mapping and activating cultural relationships of care; reinforcing Elder authority; and painting, dancing, playing instruments, and singing as a community.

Similarly, Minichiello et al. (2015) reported tobacco interventions with relevance for ethnic and community groups, including elements of self-determination, were more likely to be successful (i.e., affecting quit rates; increasing individual knowledge; and reducing initiation, consumption, and prevalence rates). The outcomes described are inconsistent and the evidence base is small; however, review findings indicate that programs that include cultural strategies to address smoking, nutrition, physical activity, and emotional well-being can assist in improving health outcomes for Indigenous peoples.

Applying Health Promotion Principles, Tools, and Strategies

Reviewing community participation within Indigenous Australian community development projects, Snijder and colleagues (2015) found wide variations in levels of community participation being recorded and documented. They concluded that positive outcomes are difficult to interpret due to the relatively poor quality of evaluation designs and reports.

Further, insufficient evidence has been documented regarding the impacts of community development projects on health and well-being outcomes for Indigenous Australians (Snijder et al., 2015). Internationally, studies have demonstrated that

programs with evidence of Indigenous community participation are more likely to have positive program outcomes compared to those without (Smylie et al., 2016). The extent and nature of community participation should be improved by future utilisation of appropriate frameworks to guide the development, implementation, and evaluation of community-based projects (e.g., participatory action research approach).

Focusing on culturally targeted media campaigns, Ivers (2003) found that such interventions can prevent smoking uptake among young people and can result in small reductions in tobacco use. Gould et al. (2013) provide a summary of research on the effectiveness of targeted and non-targeted anti-tobacco media messages (i.e., mass media, new media platforms, and social marketing). Preliminary evidence shows that culturally targeted messages can be as effective for Indigenous populations as generic messages are for the general population in the short term.

Health promotion interventions using social media and mobile software appear to have potential for Indigenous populations; however, evidence about their effectiveness or health benefit is sparse and mixed (Brusse et al., 2014). A common taxonomy to describe media-based interventions for Indigenous studies is currently missing (Gould et al., 2013). Culturally targeted media interventions have been reported to be no more effective than control interventions, despite being collaboratively developed (Gould et al., 2013). Most evidence in this area comes from studies about text messaging for smoking cessation. At the time of review publication, only one study on social media intervention could be linked to a significant (though small) change in behaviours directly related to health outcomes. Brusse et al. (2014) speculate that the presence of institutional barriers and methodological shortcomings might obstruct publication of research in this area, thereby lowering incentives for research investment.

The range, characteristics, and effectiveness of Indigenous youth-led health promotion projects were investigated (Vujcich et al., 2018). Interventions reviewed were mostly targeted at sexual health, alcohol and other drugs, and mental health/suicide prevention. This knowledge base is dominated by Australian-led sexual health intervention research. A minority of studies found evidence of changes in behaviour, but changes in knowledge and attitudes were more common. Overall, there is limited evidence for the effectiveness of peer-led health interventions with Indigenous young people. Reasons for this scarcity include significant methodological limitations and an absence of robust program evaluations. The authors conclude that improved service provider access to

practical evaluation tools, the development of knowledge and skills in evaluation techniques, and the provision of additional funding to support rigorous data collection would address these gaps (Vujcich et al., 2018).

Building on Wise et al.'s (2012) scoping study, the reviewed evidence provided an overview of Indigenous health promotion tool implementation and evaluation in Australia. This series of reviews looked specifically at the implementation of Indigenous health promotion tools and the effectiveness of implementation itself. McCalman et al. (2014) and McCalman et al. (2016) found that organisational settings for implementation were diverse and that documentation of how health promotion tools were intended or were actually incorporated into particular settings was poor. This, coupled with limited high-quality impact evaluations, meant there was little evidence for whether such tools work to improve Indigenous health promotion effectiveness. The dominance of descriptive studies and poor quality of evaluations found in this review are consistent with wider Indigenous health promotion literature (Kinchin et al., 2017; Whitesell et al., 2020).

Few reviews included in the umbrella review by McCalman et al. (2016) explicitly considered how Indigenous knowledge (such as conceptual principles underpinning health programs and services) was reflected in program or service implementation. The importance of Indigenous co-authorship, especially given that design and reporting of study findings from an Indigenous worldview demonstrates respect, increases the likelihood of a converging interpretation of the aims and targets of implementation, and hence of research benefit. The authors indicate that the PARIHS framework was not necessarily applicable to understand *all* factors affecting implementation in various settings; however, as a theoretical model, it was useful for identifying the broad elements critical to implementing Indigenous Australian health services and programs (McCalman et al., 2016). Review recommendations include: increasing the use of local Indigenous knowledge to inform program implementation; improving the application of valid and reliable measures; evaluation rigour and improved reporting to accurately quantify the effect of implementation and program impact; recognising the value of Indigenous healthcare workers as facilitators and change agents; actively disseminating effective strategies; extending short-term funding timeframes; and a commitment to—and investment in—collaboration, to promote Indigenous leadership, governance, and sustainability (e.g., capacity building, staff training).

Table 3
Quality Appraisal

Quality appraisal criteria	Brusse et al., 2014	Gould et al., 2013	Harfield et al., 2018	Ivers, 2003	Jongen et al., 2017	Lokuge et al., 2017	Maclean et al., 2017	McCalman et al., 2014	McCalman et al., 2016	McFarlane et al., 2016	Minichiello et al., 2015	Snijder et al., 2015	Vujcich et al., 2018
Address a clearly focused question/issue?	●	●	●	◐	●	●	●	●	●	●	●	●	●
Unlikely important/relevant studies were missed?	●	●	●	●	●	◐	●	●	●	●	●	●	●
Criteria to select articles for inclusion appropriate?	●	●	●	○	●	●	●	●	●	●	●	●	●
Study selection performed in duplicate?	○	●	●	○	●	○	●	○	●	●	●	○	●
Data extraction performed in duplicate?	○	●	●	○	○	●	●	○	○	○	●	●	○
Satisfactory data analysis and cross-checking?	●	●	●	◐	●	●	●	●	●	◐	●	●	●
Results make sense/justify the conclusions?	●	●	●	●	●	●	●	●	●	●	●	●	●
Review limitations acknowledged/discussed?	●	○	○	○	●	○	●	●	●	●	●	●	●
Data collection methods of primary studies detailed?	●	●	○	●	●	●	○	●	●	●	●	●	●
Review authors use a validated/satisfactory tool for assessing the quality of the primary studies?	N/A	●	N/A	●	●	○	●	●	○	○	●	●	●
Total	77%	90%	88%	50%	90%	65%	90%	80%	80%	85%	100%	90%	90%

Quality Appraisal

Review quality was assessed using a number of criteria, the results of which are presented in Table 3. In summary, the majority of reviews addressed a clearly focused research question, had reproducible search methods, used appropriate inclusion criteria, and incorporated satisfactory data analysis and cross-checking. The selected reviews were deemed sufficient in their coverage of the literature and their conclusions were justified by review results. Several methodological weaknesses were observed, including: a lack of independent assessment when selecting studies (n=5) and extracting data (n=7); failing to adequately acknowledge review limitations (n=4); data collection methods of primary studies not adequately detailed (n=2); and review authors not reporting the use of a validated tool to assess the quality of primary studies (n=3).

Overall, reviews on the topic were of a high standard, meaning the quality of synthesised evidence on health promotion is a sound resource for the potential development of strategies to address gambling-related harm in Indigenous communities. Brusse et al. (2014) point out several key limitations in this area (terminology, measures, and institutional problems). It is important to note that limitations in searchable terms are a large issue in this research field. Additionally, missing elements in the literature do not necessarily mean that such elements are not being applied in practice and are not relevant—simply that they are not documented and therefore are not reported in the reviews.

Ivers's (2003) review, for example, was completed when information on this topic was in its infancy. Despite its small sample, it is an informative contribution and demonstrates the strength of systematic reviews using prescribed protocols and tools that assess quality, a movement that has evolved over 20 years. Jongen and colleagues' (2017) scoping review (completed as part of a larger systematic literature review) demonstrates robust search methods and consistent categorisation, lending weight and validity to their findings.

According to our quality measures, the most technically rigorous and comprehensive in its reporting was Minichiello et al. (2015). The review makes a strong case for engaging with Indigenous self-determination and grounding Indigenous research on tobacco (and more broadly addiction and health behaviour) firmly in Indigenous cultural protocols and practices.

Discussion

This overview assembles reviews examining different strategies related to health promotion in Indigenous-specific settings. Taken together, they contribute methodological and practice-based insights that potentially relate to addressing gambling harm for these population groups. We did not find any published reviews on the application of HPAs that specifically

address gambling-related harm within Indigenous communities, but by reviewing the cross-over literature, our analysis identified three overarching themes constructive to further research in this area. These themes describe Indigenous health-promotion strategies across related research and are broadly defined here as 'cultural,' 'structural,' or 'methodological' factors. Cultural factors encompass expressions of Indigenous cultural identity, the promotion of cultural safety/competency, and culturally designed and targeted HPAs (i.e., media campaigns). An emphasis on community participation, Indigenous involvement and leadership, and youth-led health promotion activities are all related techniques explored in the reviews that are potentially applicable to health promotion that addresses gambling harm. Recognising the necessity of accurately assessing cultural competency in HPAs, Jongen et al. (2017) provided an evidence-based framework for planning, implementation, and evaluation of cultural competency services and programs. This review situates research synthesis in the area of Indigenous health and well-being.

Respecting and responding to regional cultural norms and local gambling patterns is another key learning point from the literature. Differences in socio-economic circumstances and locations relevant to local gambling contexts mean that Indigenous peoples' gambling patterns vary, as does their potential for developing effective gambling programs. These local complexities (segregated along temporal, spatial, and racial lines) obscure the impact of macro-policy interventions such as income management. Identifying underlying cultural contexts of gambling harm is important to determining strategies to address them.

A qualitative study conducted in New Zealand reports that while harms experienced by Indigenous people might be similar to those in mainstream society, the contexts within which gambling activities occur (and how related harm manifests) is distinct and complex (Kolandai-Matchett et al., 2017). Understanding cultural nuance is essential given the impact such factors have on gambling-related behaviour. This sentiment is consistent with cultural factors that emerged from the included reviews: They indicate that successful gambling health promotion strategies and interventions must achieve a certain degree of cultural safety to engage people's cultural identities and understand how it intersects with gambling and the community at large (Kolandai-Matchett et al., 2017). Targeted HPAs using social marketing, for example, are an important strategy for addressing harm associated with addictive behaviour at a population level and are therefore applicable to gambling harm minimisation. Research shows campaigns are most effective if they are owned, developed, and implemented by Indigenous communities, and create 'sticky' social media health messages (i.e., messages that provoke interest, raise

awareness, impart knowledge, and inspire change) to facilitate Knowledge Translation (Shibasaki et al., 2016).

The second theme, structural barriers, describes barriers to implementing HPAs and program evaluation in Indigenous settings, as opposed to the broader structural barriers to health equity (income, ethnicity, and gender inequities) that shape health behaviours. Although these were mentioned to different degrees in the review, related structural factors here include integration of Indigenous primary health care systems and the reorienting of health and well-being services to include the above-mentioned cultural factors. Our findings indicate that organisations need adequate resources, and they need to practice cultural safety and develop culturally appropriate prevention and health promotion strategies. Furthermore, organisational systems need to support managers and practitioners, provide partnership opportunities, and develop internal capacity for health services to deliver both treatment and health promotion programs to the communities they service. In summary, important characteristics of the PHC service delivery models identified here, and considered global in their application, include: a culturally appropriate and skilled workforce, community participation, and key elements of self-determination and empowerment (Harfield et al., 2018).

The final theme is methodological factors. Common elements here were (a) the identification of methodological and systemic barriers; (b) strategies to overcome identified challenges; and (c) a consistent call for increasing evaluation rigour in this area (e.g., improving reporting standards, promoting established guideline use) (Snijder et al., 2015). Specific issues related to research methods include the use of appropriate outcome indicators and study design (Jongen et al., 2017), and difficulties with recruitment and retention of participants (Minichiello et al., 2015; Vujcich et al., 2018). More systemic issues linked to short-term funding, inconsistencies in measurement tools (and their use), inadequate documenting and reporting frameworks, intervention fidelity, and potential publication bias also reflect this theme (MacLean et al., 2017). The capacity for robust recruitment and follow-up strategies indicates a 'measures problem' (Brusse et al., 2014). This is the challenge of reporting clear research methods (particularly RCT and quasi-experimental designs) while simultaneously prioritising local health promotion and real-world engagement.

Our review reveals an intrinsic tension between maintaining rigorous research practices while conducting ethical and respectful research with Indigenous groups. The challenge of developing interventions for target groups with unique cultural needs and characteristics, while trying to evaluate health outcomes using systematic tools (designed for the general population), presents an unusual conundrum. Flexibility in methods, attitudes, and

timeframes are critical components for research in this area (Pyett et al., 2008). Indeed, 'interventions need to be based on the evidence available for what works with different populations and health issues as well as the desires of the community/target population' (Jongen et al., 2017, p. 12).

Effectiveness of interventions is not the sole consideration when implementing interventions in Indigenous populations ... Emotional engagement/identification is also plausibly higher if the targeted community has been involved in formative research. (Gould et al., 2013, p. 8)

Ethically navigating the convergence of a health promotion rationale with the principles of collective well-being and self-determination, while also acknowledging the social and structural determinants of Indigenous health, is very important. Capturing community-level change can be challenging (Minichiello et al., 2015). This difficult issue affects the validity of public health research generally and is exacerbated by the consistent prioritisation of experimental and quasi-experimental studies (testing individual clinical interventions) over assessing activities that reach the whole community. This theme included both (a) attention given to the use of appropriate and/or validated measurement tools, and (b) discussion of the methodological limitations of primary studies. While the former reflects attempts made by researchers and policy makers to improve the evaluation quality of Indigenous services and programs overall, the latter inevitably affects the quality of the evidence-base relating to research in this area. For example, involving participants as partners in research, a participatory action research approach based on principles of *The Ottawa Charter* (WHO, 1986), can help resolve methodological issues by fostering equitability in the research process.

Jongen et al. (2017) reviews targeted tobacco campaigns and broader health promotion approaches for Indigenous people, but their outcomes are applicable to gambling harm reduction. Findings indicate that an appropriate model of HPAs related to Indigenous gambling would involve education and awareness raising programs, strategies to address stigma, building community relationships, and dealing with the underlying social determinants of gambling; rather than generic 'top-down' directives (e.g., money quarantining). Elements identified as facilitating positive change include: cultivating meaningful relationships with community members; providing access to culturally based health care; and engaging with, and grounding work in, cultural protocol and practice (Minichiello et al., 2015). There was also a clear emphasis on health promotion implementation and program effectiveness and the overarching importance of thorough evaluation efforts in the reviews. However,

the degree to which this translates into new norms in research practice is unclear.

Implications

From a public health perspective, research addressing gambling harm in Indigenous settings should encourage and support increased cultural safety and involve strategies that are responsive to Indigenous sociocultural determinants of health. Quantitative researchers exploring cultural implications of Indigenous people's gambling can provide ideas for community-grounded HPAs to address gambling harms as they evolve. However, limitations (such as small sample sizes) affect the applicability and/or transferability of research findings; that is, the ability to apply findings from a mix of evidence on HPAs from one Indigenous population group (tobacco users) to another Indigenous population group (problem gamblers), or from research on Indigenous people from one country to Indigenous people from another.

Regarding implications for practice, this review recommends health promotion initiatives be multi-faceted and rooted in principles of self-determination, the needs of local community, using Indigenous ways of knowing and doing, and generating community interest. Common factors contributing to a greater sense of community interest include: having strong local drivers, long-term investment in relationship building, and the development of credibility and trust between community members and project staff (Minichiello et al., 2015). Further, the policy integrity and application of a public health framework to address gambling-related harm in Indigenous communities rests on accurate cessation and prevention indicators, as well as the coordinated planning and implementation of appropriate health promotion campaigns, in conjunction with complementary regulatory measures. There is sufficient evidence that providing culturally appropriate strategies to tackle gambling harms, and community involvement in shaping these programs, are more likely to be effective than those that do not. Therefore, future research assessing the applicability of themes and strategies for Indigenous health promotion targeting GDs in differing countries with differing Indigenous populations would address gaps in the current knowledge base.

Limitations

Overviews generally create a meta-analysis of the included reviews, but the descriptive foci of the included reviews prevented this. While we provide an overview of the state of certain HPAs within Indigenous health research, we did not assess any potentially useful primary studies that were not included by the reviews we identified. Similarly, the exclusion of grey literature means we might not have located all relevant Indigenous health promotion materials published within the review period. For example, most countries produce national reports on prevalence and patterns of

addiction, such as Australia's Productivity Commission (1999, 2010), and the United States' National Gambling Impact Study Commission (1999). Health promotion is often listed as a key prevention and harm reduction strategy to address health inequalities in Indigenous populations; however, such reports were not included. We acknowledge the limitations our approach had in its analysis. Our ability to comprehensively answer the proposed review questions was affected by the absence of information provided in the reviews (limited range of Indigenous health issues discussed), our choice of methods (strict inclusion criteria), and gaps in the literature overall (no information on gambling-specific HPAs in Indigenous populations).

Conclusion

We identified knowledge and methodological gaps in Indigenous health promotion and gambling research that can be addressed by researchers and policy makers. Our findings also justify the use of culturally safe prevention and intervention strategies that consider GD risk, and protective factors that are influenced by Indigenous-specific cultures. Although no reviews were identified that apply health promotion explicitly to address gambling-related harm within Indigenous communities, the synthesised evidence suggests strategies incorporated into a health promotion perspective need to reflect three overarching constructs, namely cultural, structural, and methodological considerations. Using a multi-component, collaborative health promotion strategy to help reduce stigma and increase awareness about gambling harm through culturally sensitive investigation is also key. Gaining insight from exploring the intersection of Indigenous cultures and gambling is crucial for the success of equitable future program development and intervention.

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The Relationship Between Unexpected Outcomes and Lottery Gambling Rates in a Large Canadian Metropolitan Area

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Abstract: The purchase of lottery tickets is widespread in Canada, yet little research has directly examined when and why individuals engage in lottery gambling. By leveraging a large urban dataset of lottery sales in Toronto, Canada, and using a simple computational framework popular in psychology, we examined whether city residents gamble more when local outcomes are better than expected; for example, wins by local sports teams or amounts of sunshine based on recent weather history. We found that unexpectedly sunny days predict increased rates of fixed-prize lottery gambling. The number of local sports team wins also predicted increased purchase rates of fixed-prize lottery, but unexpected positive outcomes in sports did not. Our results extend previous findings examining the linkage between sunshine and gambling in metropolitan areas beyond the US, but do not fully replicate the previously observed relationships between unexpected sports outcomes and gambling in US cities. These results suggest that the observed malleability of lottery gambling in response to incidental events in the gambler's environment may vary considerably across geographies.

Keywords: prediction error, gambling, lottery, big data, mood

Introduction

Purchasing lottery tickets is the most popular form of legal gambling in Canada, with 65% of Canadians reporting that they purchase lottery tickets at least weekly (Planinac et al., 2011). Further, a large proportion of gamblers participate in lottery gambling at least occasionally (i.e., more than 45% purchased tickets once a month or more) (Short et al., 2015). Considered a leisure activity by many, lottery gambling is thus pervasive—for example, in the fiscal year 2018–2019, the lottery generated \$3.7 billion of proceeds in Ontario alone (Ontario Lottery and Gaming Corporation, 2019).

The lotteries offered by the Ontario Lottery and Gaming Corporation (OLG), can be classified into two categories: those with fixed prizes (e.g., 'Daily Keno', 'Pick-2', 'Pick-4') and those with progressive prizes (e.g., 'Lottario', 'Lotto 6/49', 'Lotto Max'). The odds of winning the jackpot for the progressive-prize lotteries range from 1 in 4,000,000 to 1 in 33,000,000; for example, 'Lotto 6/49' costs \$3 per draw and the odds for the top prize (beginning at \$3,000,000) are 1 in 13,983,816. The odds for the top prize in fixed-prize lotteries vary considerably depending on the format of the lottery.

For example, 'Pick-4' costs \$1 per ticket and the odds for the top prize of \$5,000 are 1 in 10,000. Despite the better odds of winning, fixed-prize lotteries incur a net loss for gamblers (in terms of expected value), and when individuals decide to wager money on a highly unlikely outcome, they are thought to be engaging in a type of risk-seeking behaviour (Rogers, 1998).

In this study, we aim to understand what influences people's day-to-day participation in fixed-prize gambling in a large metropolitan area in Canada. Within the sphere of gambling research, there is a growing interest in examining the relationship between gambling practices and the external environment of lottery gamblers (Bedford, 2021; Casey, 2008; Nicoll, 2019). Here we seek to expand this line of inquiry and elucidate the relationship between environmental factors and willingness to participate in gambling.

In the psychology literature, it has been demonstrated that unpredictable events in daily life drive variations in mood states (Clark & Watson, 1988; Kuppens et al., 2010), and these affective state changes in turn are believed to influence an individual's attitude towards risk-taking (Ashby et al., 1999; Isen & Patrick,

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1983). At the same time, a body of work reveals how the effect of positive or negative outcomes upon an individual's mood state is nuanced: an outcome exerts a stronger effect when it is unexpected rather than expected, and this manifests in both affective experience (Mellers et al., 1997; Shepperd & McNulty, 2002) and momentary happiness (Rutledge et al., 2014). It thus appears that the difference between expected and true outcomes—so-called 'prediction errors'—drive many important behavioural phenomena inside and outside the lab.

Recently, we employed a 'big data' approach to understand how lottery gambling in New York City's 8.5 million residents varies over time as a function of unexpected outcomes in the external environment unrelated to lottery gambling (Otto et al., 2016). As professional sports events and weather are a source of continually occurring events known to exert striking effects on mood states (Cunningham, 1979; Edmans et al., 2007), we reasoned prediction errors from these sources would alter risk attitudes via mood shifts that would be evident in per-capita lottery ticket purchasing rates. Using a simple computational model to calculate prediction errors stemming from local professional sports teams and local sunshine that spanned an entire year, we were able to quantify the extent to which 1) the city's professional sports teams had performed better or worse than expectations based on recent performance, and 2) the extent to which the day's sunshine was greater or less than expectations informed by recent sunshine levels. We found that positive, unexpected local outcomes stemming from sports and weather—but importantly, not *absolute* outcomes in either domain—predicted increases in day-to-day lottery gambling behaviour (Otto et al., 2016).

Further, a recent follow-up study demonstrated that the predictive relationships between sports- and sunshine-based prediction errors and lottery gambling rates are observable in other metropolitan regions in the United States—in this case, the Chicago metropolitan statistical area (Otto & Eichstaedt, 2018). This work complements a growing body of work suggesting that these deviations from short-term expectations exert a larger impact on positive mood states than outcomes themselves (Eldar et al., 2016; Rutledge et al., 2014; Villano et al., 2020; Vinckier et al., 2018) and these mood states in turn have well-documented effects on risk attitudes (Bassi et al., 2013; Isen & Patrick, 1983; Schulreich et al., 2014). At the same time, these large-scale real-world datasets further demonstrate the malleability of individuals' gambling propensities, opening the door to further examine possible linkages between events (unexpected or otherwise) in the gambler's environment and their attitudes toward lottery gambling.

On the basis of this line of work, an open question remains concerning the extent to which the predictive relationship between unexpected positive outcomes and lottery gambling rates generalizes to populations

outside of the United States (Kaizeler & Faustino, 2008). Interestingly, Toronto, as the largest urban area in Canada with a population of 2.7 million (Statistics Canada, 2017), is similar in size to the US cities studied previously (New York City and Chicago). Toronto also has similar marked day-to-day fluctuations in rates of lottery purchase that mirror the pattern previously observed in US cities. Toronto also similarly hosts several professional sporting teams (i.e., 3 major professional teams) as well as sunshine levels that exhibit comparable levels of intrinsic variability. Finally, as the structures of fixed-prize lottery games are, by and large, similar across the United States and Canada, this study may help identify factors affecting gambling that are sensitive to cultural or regional differences. One such difference is the pervasiveness of professional sports: New York City has 13 major league teams, across the National Football League (NFL), Major League Baseball (MLB), National Basketball Association (NBA), National Hockey League (NHL), Major League Soccer (MLS), National Women's Soccer League (NWSL), and Women's National Basketball Association (WNBA); whereas Toronto only has four teams across the NHL, NBA, MLB, and MLS. Taking this as an indicator of how much influence sports outcomes exert on residents' psychological states, we might expect that the influence of sports on local residents' lottery gambling behaviour might be attenuated in Toronto.

Accordingly, here we aimed to leverage the well-characterized relationship between mood states and risk attitudes established in the previous US-based studies to examine which mood-influencing events in the external environment predict when residents of a large Canadian metropolitan area (the Toronto Metropolitan Area) are more likely to participate in lottery gambling. Our hypothesis is that both sports and sunshine-based prediction errors will have a significant and positive relationship with lottery gambling. Critically, we were able to assess how rates of fixed-prize lottery gambling in Toronto respond to these kinds of prediction errors over the course of two years (2014 and 2015), at the same time controlling for the influence of cyclical variables such as seasonal and day-of-week effects. This rich dataset allows us to examine these day-to-day changes in gambling behaviour across nearly 100 diverse neighborhoods. Again, to ensure that fluctuations in lottery consumption are not driven by changes in jackpot value—as in the case of jackpot-based gambles where prize values change over time—we only considered fixed-prize lottery tickets administered by the Ontario Lottery and Gaming Commission (e.g., 'Daily Keno', 'Megadice Lotto', 'Pick-2'). In turn, the expected values of the gambles considered do not vary as a function of time or the number of winning participants. Thus, we believe that the day-to-day variations in lottery ticket purchases would reflect factors extrinsic to the lotteries themselves, possibly reflecting changes in the

gamblers’ underlying risk attitudes (Conlisk, 1993; Rogers, 1998).

Method

Toronto Lottery Data

Via an Access to Information Act request, we acquired fixed-prize lottery purchase data by forward sortation area (FSA) for the years 2014 and 2015 in Toronto from the Ontario Lottery and Gaming Corporation (OLG). FSAs are defined as geographic regions where all postal codes share the same three starting characters, roughly correspond to city neighborhoods, and are associated with well-defined geographical boundaries in the Greater Toronto Area (Varga et al., 2013). Further, the 2011 census provides rich FSA-level demographic information. We requested

aggregated daily sales data in the City of Toronto for all fixed-prize lottery tickets available (i.e., ‘Daily Keno’, ‘Living the Life Lottery’, ‘Megadice Lotto’, ‘NHL Lotto’, ‘Pick-2’, ‘Pick-4’, ‘Poker Lotto’, and ‘Wheel of Fortune’). This includes all the FSAs beginning with ‘M’; 100 FSAs in total (see Fig. 1A).

We sought to analyze the effect of prediction errors at a per-capita level in the city and on the individual FSA level. One possible confounding factor is FSAs that are mostly comprised of commercial or industrial real estate. To ensure that our analysis only covered residential zones, we only included FSAs with 1000 or more adult residents, according to the *2011 National Household Survey* (Statistics Canada, 2013), which left 95 FSAs for analysis.

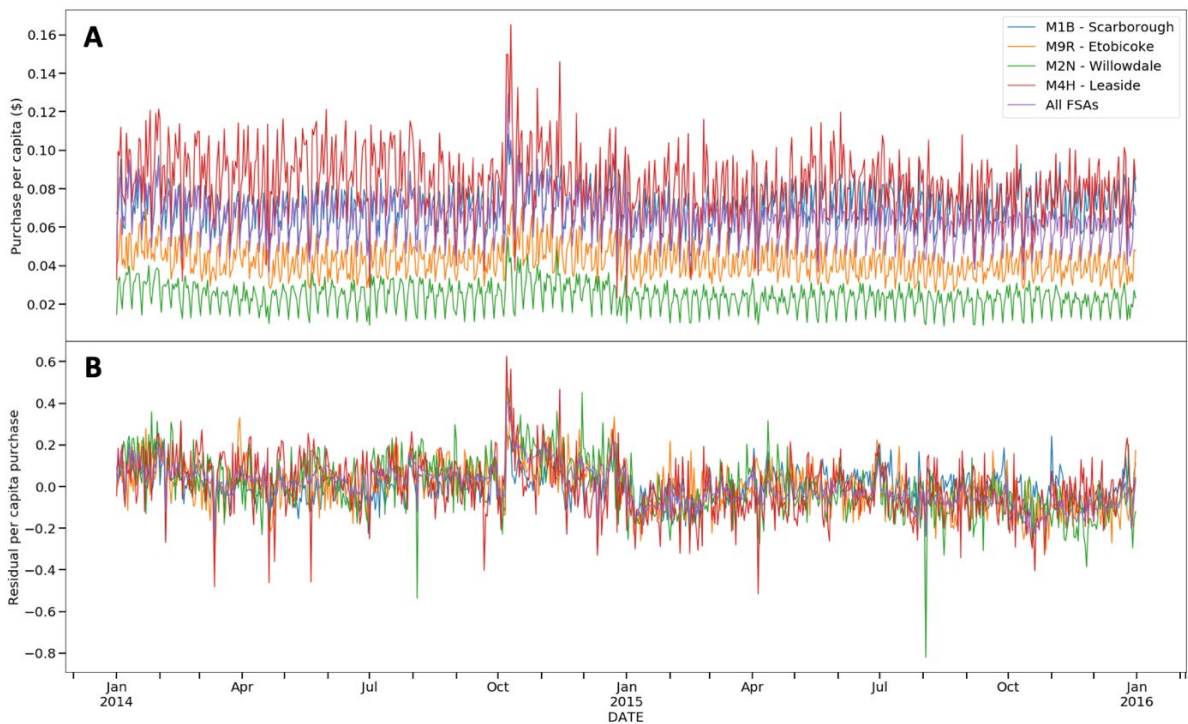


Fig. 1. Timecourse of daily-lottery purchases in Toronto fluctuate heavily every day in the years 2014 and 2015. (A) The composite per-capita purchases of daily-lottery tickets, in 4 different forward sortation areas (FSAs) and averaged over all FSAs, shows strong weekly cyclical effects. (B) After controlling for a number of cyclical and non-cyclical nuisance variables (Methods), we still observe variations in purchase rates correlated at the FSA level in the city-wide average.

Demographic Data

We computed the number of adult residents per FSA from population data acquired from the *2011 National Household Survey* (Statistics Canada, 2013).

Sunshine Data

We used satellite-derived estimates of Direct Normal Irradiance (DNI), a measure of solar irradiance in units of W/m^2 on a surface normal to the sun, obtained from Clean Power Research (www.SolarAnywhere.com), following our previous analyses of sunshine data (Otto

& Eichstaedt, 2018; Otto et al., 2016). Intuitively, larger DNI values are indicative of sunnier days (i.e., absence of cloud cover). For each day in 2014 and 2015, we calculated the mean DNI between sunrise and sunset to use as our daily estimate of solar irradiance. A daily exponentially weighted average was calculated with the equation (Fig. 2A; Otto & Eichstaedt, 2018; Otto et al., 2016):

$$\overline{DNI}(t+1) = \overline{DNI}(t) + \alpha[DNI(t) - \overline{DNI}(t)]$$

In accordance with previous work employing the same prediction error computation, the recency parameter, α , was set to a value of 0.1 (Otto & Eichstaedt, 2018; Otto et al., 2016). The prediction error for a given day was calculated as the difference between expected and observed DNI, computed as $DNI(t)$ minus $\overline{DNI}(t)$ (Fig. 2B).

Sports Outcomes

The sports outcomes (wins, losses, and ties) of regular and post-season games played by the Toronto teams in the National Basketball Association (NBA), National Hockey League (NHL), and Major League Baseball (MLB)—identified as the three most popular teams in Canada by fan base size (Elevent, 2020)—were obtained from the ESPN website (www.espn.com) for the years 2014 and 2015. To calculate prediction error from sports team results, we calculated an exponentially weighted average (Otto & Eichstaedt, 2018; Otto et al., 2016) in order to estimate the probability of winning for each team P_{win} , adjusting this estimate after each game based on the deviation between outcome and previous prediction (Fig. 3A):

$$P_{win}(t + 1) = P_{win}(t + \alpha [O(t) - P_{win}(t)])$$

In this equation, t is the day of the year, $O(t)$ is the outcome (win = 1, loss = 0, tie = 0.5) on that day, and α is a recency parameter (i.e., learning rate) that makes recent outcomes more influential than those in earlier days. Similar to the analysis of sunshine, α was set to a value of 0.1 (Otto & Eichstaedt, 2018; Otto et al., 2016). On days where a team did not play, P_{win} was carried

forward from the previous day, which parallels the trial-based learning algorithms used in experimental literature (Rutledge et al., 2014). In this model, the prediction error for a team on a given day is simply the difference between that day’s expected outcome $P_{win}(t)$ (previous day’s moving average) and the outcome, $O(t)$ (Fig. 3B):

$$PE(t) = O(t) - P_{win}(t)$$

Each day, the prediction errors from teams that played on that day were summed to compute a ‘city-wide’ sports prediction error, which represents how much better or worse the city’s teams performed compared with recent expectations (Fig. 3C; Otto & Eichstaedt, 2018; Otto et al., 2016).

Nuisance Variables

As in the Otto et al. (2016) and Otto and Eichstaedt (2018) studies, we specified several ‘dummy’ variables to control for year, day-of-week effects, month-of-year effects, statutory holidays, common paycheque cycles, severe weather events, and in accordance with prior work (Evans & Moore, 2011) for statutory holidays (New Year’s Day, Family Day, Good Friday, Victoria Day, Canada Day, Labour Day, Thanksgiving, Christmas Day, and Boxing Day). Common paycheque receipt days—1st and 15th of each month—were separately dummy-coded (if these fell on the weekends, the immediately preceding weekday was used).

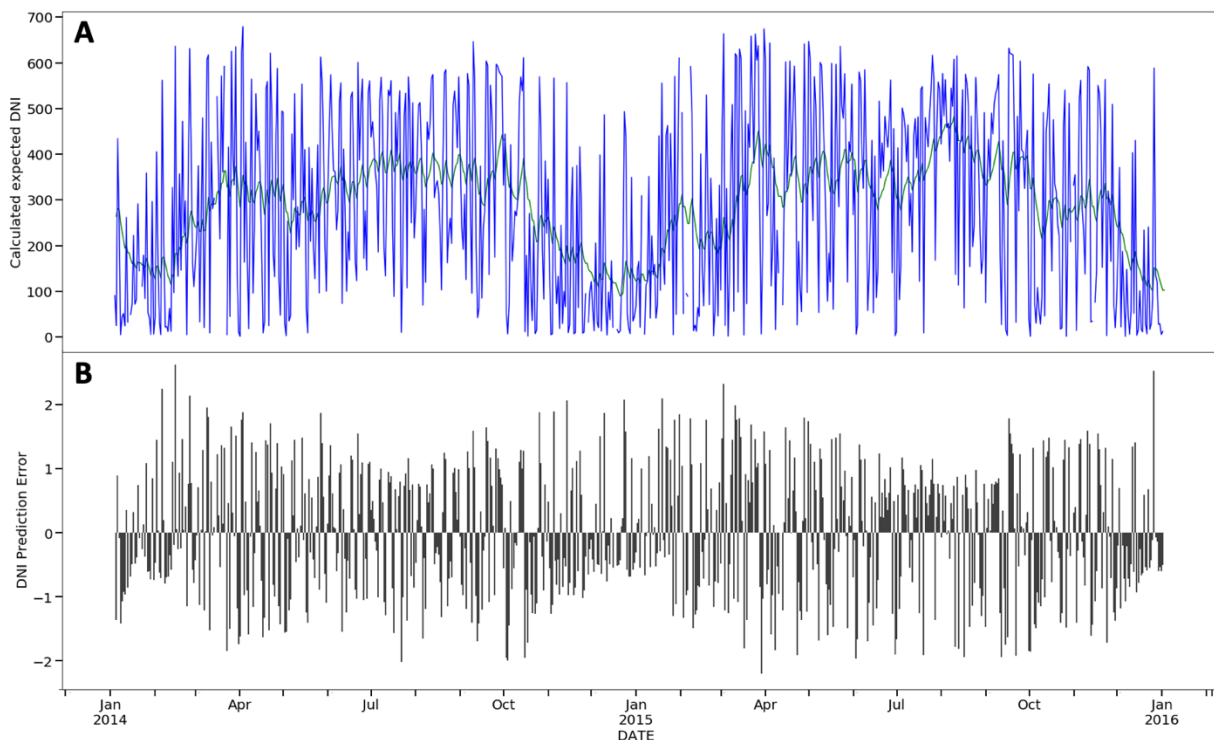


Fig. 2. Direct Normal Irradiance (DNI) varies throughout the year. (A) The cyclical nature of irradiance in Toronto varies from season to season. As expected, it is high during the summer months and low during the winter months. However, day-to-day variation still exists which contributes to prediction errors. (B) Prediction error from solar irradiance is computed as the divergence between the calculated expected DNI and the observed DNI.

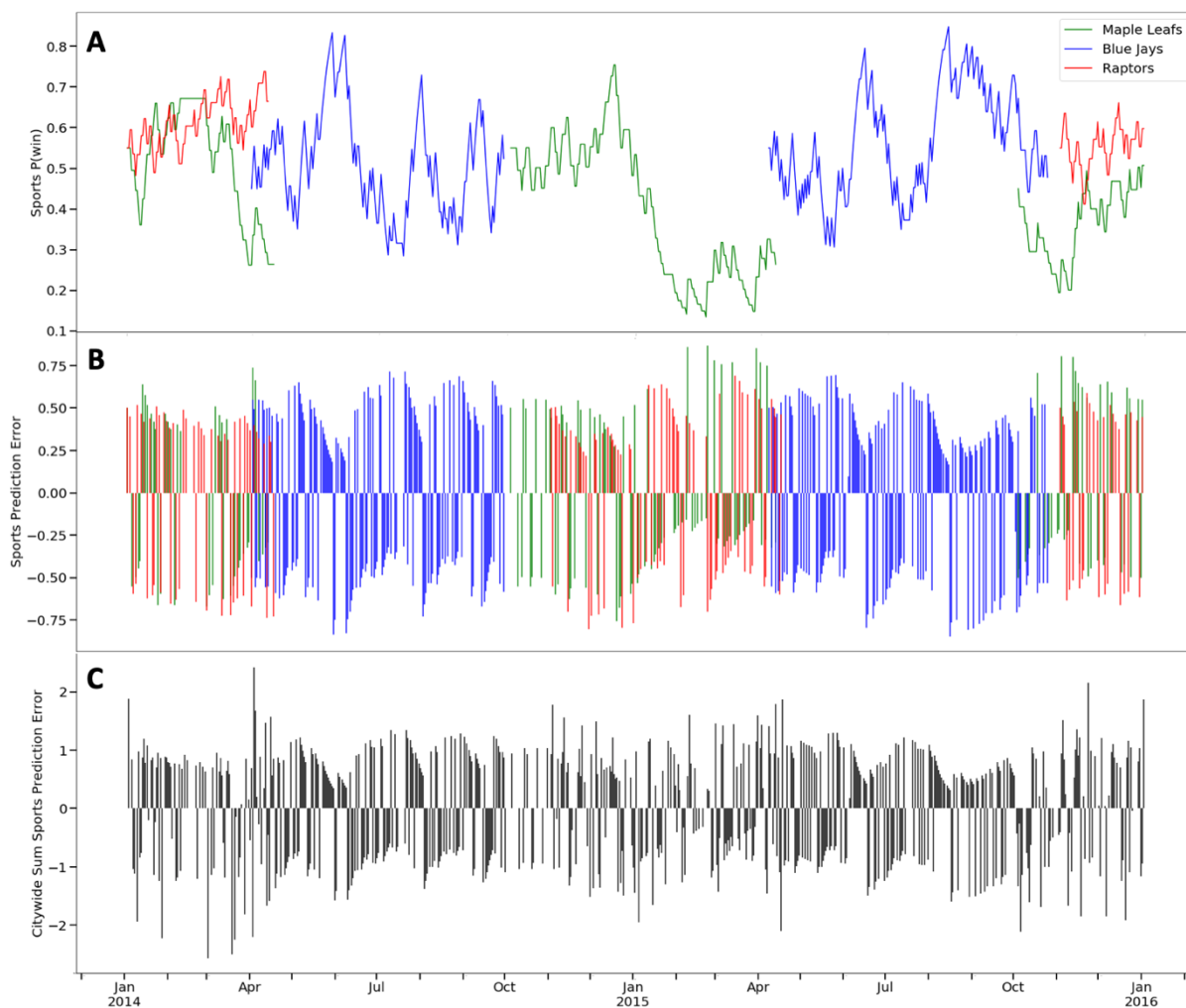


Fig. 3. Calculation of sports-based prediction errors. (A) The exponentially weighted estimates of winning probabilities, $P(\text{win})$, for each of the three teams. The estimate is updated after every game based on their predicted probability of winning. (B) The prediction error associated with winning calculated as the difference between the outcome and the modelled $P(\text{win})$. (C) City-wide sports-based prediction error calculated by summing each team's prediction error for each day, which mirrors a composite deviation from expectation among teams.

Data Analysis Approach

For each FSA, we summed the sales of lottery tickets and divided the composite by the adult population associated with the FSA to control for population differences across FSAs (Oster, 2004; Otto & Eichstaedt, 2018; Otto et al., 2016), which was then log-transformed to yield our dependent measure of log purchases per adult. For the analysis, there were 69,337 observations over the two-year period. Linear regressions were then conducted as mixed-effects models, performed using the lme4 package (Pinheiro & Bates, 2000) in the R programming language. The linear regression specification included all the dummy-coded nuisance regressors described above, with all predictor variables (both nuisance variables and variables of interest) taken as random effects over FSAs.

Results

Overall Lottery Data Characteristics

For each FSA, we aggregated the dollar sales of each ticket and divided this composite by the FSA's population, computing a composite-per-capita score of lottery gambling (Fig. 1A). Influences of the nuisance variables (day-of-week, month-of-year, etc.) were removed using the mixed-effects regression, resulting in residual timecourses of lottery gambling for each postal code (Fig. 1B). The observation that these residual timecourses of gambling correlate across neighbourhoods suggests that common causes, unexplained by cyclicity or seasonality, might influence these apparent fluctuations in city-wide gambling behaviour (mean $r = 0.39$ across all FSAs in 2014 and 2015).

Across the four regression models described below (Tables 1–4), we consistently observed cyclical effects such as day-of-week and month-of-year (i.e.,

seasonality) effects typically observed in lottery purchase behaviour (Otto et al., 2016). Interestingly, we also observed significant increases in lottery gambling on the first day of the month (a common paycheque receipt day), marked decreases on statutory holidays (presumably due to retailers being closed or gamblers engaging in other activities), and an overall higher rates of lottery gambling in the year 2014, relative to 2015.

Sunshine-Based Prediction Errors and Lottery Gambling

We examined if the timecourse Sunshine Prediction Errors—which quantify how each day’s sunshine level deviates from recent expectations (Fig. 2B)—positively predicted day-to-day lottery gambling on the same day, finding that positive changes in sunshine (e.g., a sunny day following a prolonged period of cloudiness) predicted increased lottery gambling levels on the same day (Fig. 4A). Statistically, a mixed-effects linear regression revealed a significant predictive effect of this

sunshine-based prediction error on fixed-prize lottery ticket sales ($\beta_{Irradiance\ PE} = 0.0025, p < 0.0001$; Table 1). To determine whether the effect of weather on lottery purchase was due to unexpected outcomes or simply from good weather in general, we performed another mixed-effects linear regression that included both sunshine-based prediction error and daily sunshine levels as predictors (Fig. 4B). Statistically, both effects significantly predicted lottery gambling rates ($\beta_{Irradiance\ PE} = 0.0184, p < 0.0001$; Table 2) but, unexpectedly, overall sunshine level exerted a significant negative effect on purchase rates ($\beta_{Irradiance} = -0.0178, p < 0.0001$), suggesting that sunnier days were associated with lower levels of lottery gambling. Finally, we note that while Fig. 4B depicts, at the highest value of sunshine—at the DNI level of approximately 620, constituting a small minority of observations—an increase in purchasing rates relative to smaller values of sunshine, our regression results capture an overall (linear) negative relationship present in the bulk of the observations examined at lower values of sunshine.

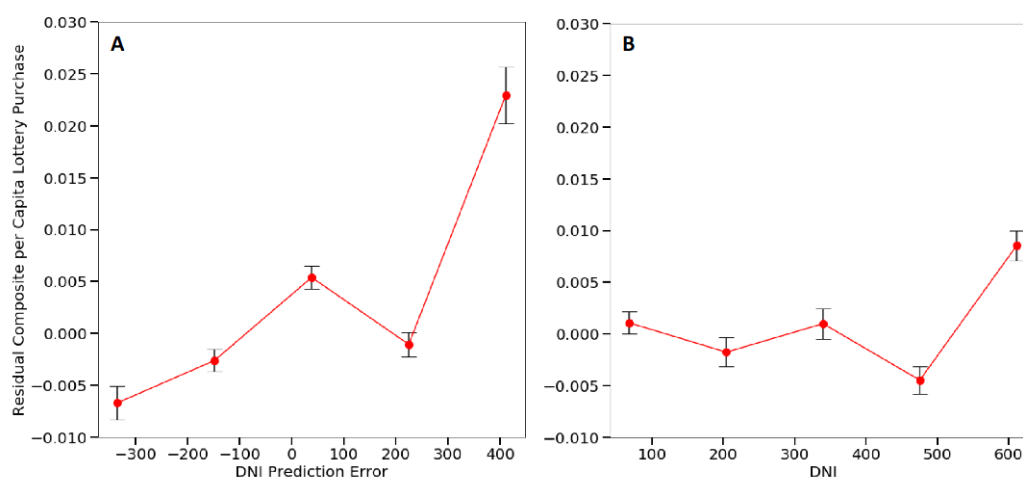


Fig. 4. Fixed-prize lottery purchases as a function of predicted and total sunshine levels. (A) Prediction errors stemming from solar irradiance are correlated with an increase in fixed-prize lottery purchases on that day. (B) High solar irradiance (DNI) is correlated to a decrease in fixed-prize lottery purchases on that day.

Sports-Based Prediction Errors and Lottery Gambling

Similarly, we examined how city-wide sports-based prediction errors (Fig. 3C)—which are positive when the city’s teams perform better than expected and negative when the city’s teams perform worse than expected—had predictive bearing on per capita lottery gambling rates on the following day. We found that this predictive relationship was positive, even after controlling for a number of cyclical and seasonal nuisance variables: when city-wide sports prediction errors were positive, city-wide lottery purchase rates increased the next day; when the city-wide sports prediction error was negative, city-wide lottery purchases decreased on the next day (Fig. 5A). We found that there was a statistically significant predictive effect of city-wide sports prediction error on fixed-prize lottery ticket sales on the

following day (Mixed effects regression $\beta_{Citywide\ Sports\ PE} = 0.0029, p < 0.0001$; see Table 3 for full coefficient estimates).

To ascertain whether the effect of sports on lottery gambling was attributable to prediction errors, controlling for the number of wins on the previous day, we estimated another mixed-effects linear regression, which included both sports-based prediction error on the previous day and number of wins on the previous day as predictor variables (Fig. 5B). In this regression, sports wins appeared to exert a significant and positive predictive effect on lottery purchase rates, but the predictive effect of unexpected sports wins did not emerge as significant ($\beta_{Citywide\ Sports\ PE} = 0.0010, p = 0.3336$; $\beta_{Citywide\ Sports\ Wins} = 0.0025, p = 0.0287$; Table 4), suggesting that absolute, rather than unexpected, success in local sports was a stronger determinant of lottery gambling.

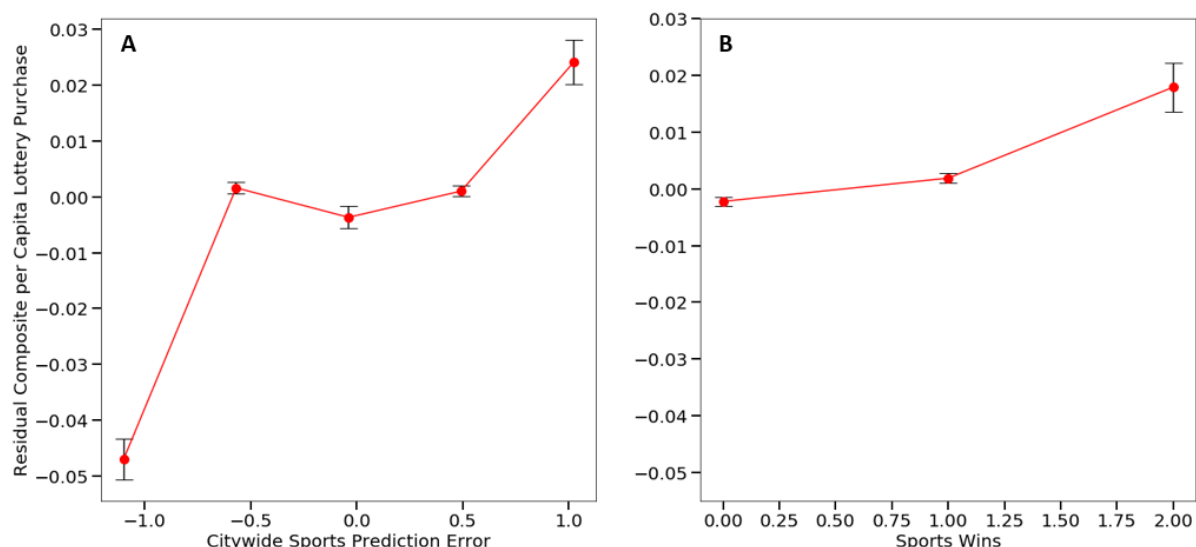


Fig. 5. Fixed-prize lottery purchases as a function of predicted and total sports wins. (A) Prediction errors from Toronto sporting events are positively associated with an increase in fixed-prize lottery purchases the day after the game. (B) City-wide sport wins are also positively associated with increases in fixed-prize lottery purchases the following day.

Discussion

In a large Canadian metropolitan area, we found evidence suggesting that the relationship between unexpected outcomes in the environment—that is, weather and sports—and fixed-prize lottery gambling might be dependent on outcome type. We observed that unexpected sunshine prediction error has a significant positive relationship with lottery purchase rates, replicating previous results (Otto & Eichstaedt, 2018; Otto et al., 2016). On a day that had the largest observed sunshine prediction error, we observed a 0.0483% increase in fixed-prize lottery purchase rates. However, we also uncovered an unexpected overall negative effect of absolute sunshine levels on lottery purchase rates—sunnier days appeared to be associated with lower levels of lottery gambling.

With respect to local sports outcomes, we did not find that unexpected sports wins (i.e., prediction errors) emerged as a significant predictor of lottery gambling behaviour, but absolute sports outcomes—that is the proportion of teams winning on the previous day—did predict lottery purchase rates. On days following the maximum observed number of sports wins (i.e., two days), we observed a 0.007% increase in fixed-lottery sales. An explanation for this phenomenon might be due to sports fans' desire to 'continue playing' or 'continue winning,' which might lead to an increased desire to participate in gambling activities. Interestingly, these sports findings dovetail well with previous work revealing how sports outcomes themselves—irrespective of expectations—drive stock market returns, presumably due to investor mood shifts (Edmans et al., 2007).

This pattern of results does not fully replicate our previous study in New York City (Otto et al., 2016), which found that only unexpected—but not absolute—sports

wins predicted increased gambling rates. One potential explanation for these divergent results is the differences in sports culture. In New York City—the setting of the Otto et al. (2016) study—there are currently 13 major sports teams across seven leagues compared to four teams in four leagues in Toronto. The New York metropolitan area is also home to six different venues for their major teams (including Barclays Center, Citi Field, Madison Square Garden, and MetLife Stadium), whereas Toronto only has three (Scotiabank Arena, Rogers Centre, BMO Field). A greater number of teams and stadiums is a sign of an increased presence of sports culture in everyday life, suggesting that professional sports may exert more influence in New York City compared to Toronto. Additionally, Toronto's professional hockey team—the Maple Leafs, which constituted a large amount of the sports outcomes in question—performed generally poorly during the time period in question (see Fig. 3A), so it is possible that Toronto residents had a blunted affective response to unexpected outcomes, possibly due in part to limited interest or attention in games stemming from poor performance (Paul & Weinbach, 2013). Finally, we should note the possibility that the increases in lottery gambling observed after local sports wins in Toronto could be driven by short-term increases in disposable income resulting from sports gambling payouts. Relatedly, this sensitivity to sports outcomes might be amplified by individuals either attending 'home' sporting events or gathering with others to watch sporting events socially, who would be inclined to purchase tickets away from their homes to continue their experience of play (Reith, 2002).

Similarly, the colder climate of Toronto (compared to New York City) may explain the observation here that Toronto residents purchased fewer lottery tickets on

sunnier days, as on these days they may seek alternate outdoor activities (possibly further away from lottery retailers). In contrast, in New York City, we only observed that *prediction errors* stemming from sunshine—rather than sunshine levels themselves—reliably predicted lottery gambling behaviour (Otto et al., 2016).

Although our analysis demonstrated how prediction errors (or outcomes) in the environment can affect fixed-prize lottery purchases, due to the nature of the dataset, a possible limitation arises from the inability to discern purchases from residents of the FSA from purchases by non-residents (e.g., commuters). We attempted to address this problem by excluding FSAs with low populations (less than 1000 residents): this mainly targeted commercial FSAs in the downtown area of Toronto, which have inflated lottery purchase rates presumably due to commuter activity. In a recent examination of this same dataset, we found that fixed-prize lotteries are purchased more by individuals in lower-socioeconomic status (SES) than in higher-SES neighborhoods (Fu et al., 2021), suggesting that the observed purchase rates of individual FSAs likely reflects the behaviour of their residents. At the same time, SES has previously been linked to problem gambling (Orford et al., 2010; Welte et al., 2004). While the effect sizes of the sunshine- and sports-based prediction errors observed in the present study are rather subtle compared to these SES effects, the generality of the prediction error effects (particularly with respect to sunshine) across geographies is noteworthy. Moving forward, it would be beneficial to investigate the number of retailers within each FSA and its relation to lottery purchases, as previous studies have found that the density of electronic gambling machines was negatively correlated with SES (Raisamo et al., 2019). Relatedly, online lottery ticket purchasing was introduced by OLG at the beginning of 2015 (midway through the period we analyzed), but our dataset only covers in-person lottery ticket purchases. Future work could investigate the effects of introducing online lotto play and the differences between spending behaviours in online versus offline gambling.

These findings sharpen our understanding of Canadians' gambling behaviours in a large, diverse metropolitan region. Previous research has demonstrated that individuals engage in lottery gambling for reasons beyond pure financial gain: it can become embedded in everyday life, taking on a broad range of meanings that vary across cultures and contexts (e.g., Bedford, 2021; Casey, 2008; Nicoll, 2019). The present research contributes to a growing body of work aimed at deepening our understanding of the way consumption practices inform both culture and the subjective and material realities of gamblers (Casey, 2008). For example, our results suggest that the relationship between environmental factors, such as sunshine, and lottery gambling might be more complex than weather merely affecting accessibility to lottery

point-of-sales. Indeed, previous work suggests more subjective motivations for lottery play such as the desire to win, curiosity, and intrinsic enjoyment of lottery play (Miyazaki et al., 1999)—this potential link to the day-to-day changes in lottery gambling rates observed here warrants further exploration.

Lottery gambling is, for the most part, seen as a relatively harmless leisure activity that, despite widespread participation, results in low rates of associated gambling-related problems (e.g., Costes et al., 2018). However, these results remain valuable in accurately understanding the external influences on gambling behaviour; specifically, the environmental factors that shape individuals' day-to-day decisions to gamble.

Authors' Note

Raw data pertaining to this study can be accessed via the Open Science Framework at <https://osf.io/eh8xb>.

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Table 1

Mixed-effects regression coefficients for model estimating effect of Solar Irradiance prediction errors (PEs) on log per-person lottery purchases. Predictor variables in capital letters denote nuisance variables coding for year (2014 vs. 2015), day of week, month of year, the first and fifteenth of the month, and statutory holidays.

<i>Coefficient</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
(Intercept)	-3.1232	0.0846	<0.0001*
Irradiance PE	0.0025	0.0006	<0.0001*
YEAR_2014	0.1283	0.0110	<0.0001*
TUE	0.0652	0.0038	<0.0001*
WED	0.2945	0.0053	<0.0001*
THU	0.1084	0.0043	<0.0001*
FRI	0.2264	0.0057	<0.0001*
SAT	0.2161	0.0221	<0.0001*
SUN	-0.1982	0.0320	<0.0001*
FEB	-0.0475	0.0061	<0.0001*
MAR	-0.0682	0.0074	<0.0001*
APR	-0.0840	0.0083	<0.0001*
MAY	-0.0687	0.0095	<0.0001*
JUN	-0.0580	0.0100	<0.0001*
JUL	-0.0510	0.0087	<0.0001*
AUG	-0.1048	0.0082	<0.0001*
SEP	-0.1124	0.0087	<0.0001*
OCT	0.0007	0.0102	0.9472
NOV	-0.0417	0.0118	0.0004*
DEC	-0.0595	0.0106	<0.0001*
FIRST_OF_MONTH	0.0312	0.0042	<0.0001*
FIFTEENTH_OF_MONTH	0.0006	0.0038	0.8697
VICTORIADAY	-0.3270	0.0379	<0.0001*
LABOURDAY	-0.2759	0.0356	<0.0001*
FAMILYDAY	-0.3256	0.0376	<0.0001*
GOODFRIDAY	-0.3334	0.0343	<0.0001*
NEWYEARSDAY	-0.6054	0.0636	<0.0001*
THANKSGIVING	-0.3189	0.0410	<0.0001*
CANADADAY	-0.3924	0.0375	<0.0001*
CHRISTMASDAY	-0.6490	0.0645	<0.0001*
BOXINGDAY	-0.1809	0.0264	<0.0001*

Table 2

Mixed-effects regression coefficients for model estimating effect of Solar Irradiance PEs and Solar Irradiance on log per-person lottery purchases.

<i>Coefficient</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
(Intercept)	-3.1312	0.0846	<0.0001*
Irradiance PE	0.0184	0.0028	<0.0001*
Irradiance	-0.0178	0.0030	<0.0001*
YEAR_2014	0.1257	0.0110	<0.0001*
TUE	0.0652	0.0038	<0.0001*
WED	0.2942	0.0053	<0.0001*
THU	0.1084	0.0043	<0.0001*
FRI	0.2266	0.0057	<0.0001*
SAT	0.2162	0.0215	<0.0001*
SUN	-0.1983	0.0310	<0.0001*
FEB	-0.0457	0.0061	<0.0001*
MAR	-0.0566	0.0076	<0.0001*
APR	-0.0716	0.0086	<0.0001*
MAY	-0.0567	0.0097	<0.0001*
JUN	-0.0446	0.0102	<0.0001*
JUL	-0.0347	0.0091	0.0001*
AUG	-0.0868	0.0087	<0.0001*
SEP	-0.0969	0.0091	<0.0001*
OCT	0.0090	0.0103	<0.0001*
NOV	-0.0373	0.0118	<0.0001*
DEC	-0.0636	0.0106	<0.0001*
FIRST_OF_MONTH	0.0328	0.0042	<0.0001*
FIFTEENTH_OF_MONTH	-0.0008	0.0038	0.8418
VICTORIADAY	-0.3286	0.0370	<0.0001*
LABOURDAY	-0.2739	0.0348	<0.0001*
FAMILYDAY	-0.3255	0.0365	<0.0001*
GOODFRIDAY	-0.3325	0.0335	<0.0001*
NEWYEARSDAY	-0.6138	0.0617	<0.0001*
THANKSGIVING	-0.3149	0.0399	<0.0001*
CANADADAY	-0.3972	0.0364	<0.0001*
CHRISTMASDAY	-0.6520	0.0630	<0.0001*
BOXINGDAY	-0.1807	0.0261	<0.0001*

Table 3

Mixed-effects regression coefficients for model estimating effect of City-wide (Sum) Sports PEs on log per-person lottery purchases.

<i>Coefficient</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
(Intercept)	-3.1078	0.0847	<0.0001*
Citywide Sports PE	0.0029	0.0007	<0.0001*
YEAR_2014	0.1180	0.0109	<0.0001*
TUE	0.0649	0.0040	<0.0001*
WED	0.2877	0.0052	<0.0001*
THU	0.1046	0.0044	<0.0001*
FRI	0.2243	0.0058	<0.0001*
SAT	0.2121	0.0221	<0.0001*
SUN	-0.1938	0.0322	<0.0001*
FEB	-0.0539	0.0054	<0.0001*
MAR	-0.0830	0.0072	<0.0001*
APR	-0.0885	0.0080	<0.0001*
MAY	-0.0781	0.0093	<0.0001*
JUN	-0.0671	0.0098	<0.0001*
JUL	-0.0606	0.0088	<0.0001*
AUG	-0.1127	0.0079	<0.0001*
SEP	-0.1225	0.0084	<0.0001*
OCT	-0.0418	0.0105	<0.0001*
NOV	-0.0471	0.0114	<0.0001*
DEC	-0.0631	0.0103	<0.0001*
FIRST_OF_MONTH	0.0402	0.0044	<0.0001*
FIFTEENTH_OF_MONTH	-0.0051	0.0042	0.224203
VICTORIADAY	-0.3255	0.0382	<0.0001*
LABOURDAY	-0.2840	0.0360	<0.0001*
GOODFRIDAY	-0.3878	0.0371	<0.0001*
NEWYEARSDAY	-0.6293	0.0632	<0.0001*
THANKSGIVING	-0.2904	0.0405	<0.0001*
CANADADAY	-0.2531	0.0363	<0.0001*

Table 4

Mixed-effects regression coefficients for model estimating effect of City-wide (Sum) Sports PEs and City-wide Sports Wins on log per-person lottery purchases.

<i>Coefficient</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
(Intercept)	-3.1221	0.0850	<0.0001*
Citywide Sports PE	0.0010	0.0011	0.3336
Citywide Sports Wins (z-scored)	0.0025	0.0011	0.0287*
YEAR_2014	0.1274	0.0111	<0.0001*
TUE	0.0641	0.0038	<0.0001*
WED	0.2875	0.0051	<0.0001*
THU	0.1072	0.0041	<0.0001*
FRI	0.2271	0.0057	<0.0001*
SAT	0.2150	0.0221	<0.0001*
SUN	-0.1968	0.0321	<0.0001*
FEB	-0.0445	0.0063	<0.0001*
MAR	-0.0741	0.0073	<0.0001*
APR	-0.0840	0.0082	<0.0001*
MAY	-0.0687	0.0096	<0.0001*
JUN	-0.0578	0.0101	<0.0001*
JUL	-0.0499	0.0088	<0.0001*
AUG	-0.1048	0.0083	<0.0001*
SEP	-0.1120	0.0088	<0.0001*
OCT	0.0000	0.0102	0.9982
NOV	-0.0447	0.0119	<0.0001*
DEC	-0.0565	0.0107	<0.0001*
FIRST_OF_MONTH	0.0311	0.0042	<0.0001*
FIFTEENTH_OF_MONTH	0.0026	0.0038	0.4891
VICTORIADAY	-0.3247	0.0378	<0.0001*
LABOURDAY	-0.2806	0.0353	<0.0001*
FAMILYDAY	-0.3232	0.0379	<0.0001*
GOODFRIDAY	-0.3351	0.0346	<0.0001*
NEWYEARSDAY	-0.6118	0.0635	<0.0001*
THANKSGIVING	-0.3232	0.0413	<0.0001*
CANADADAY	-0.3881	0.0377	<0.0001*
CHRISTMASDAY	-0.6535	0.0642	<0.0001*
BOXINGDAY	-0.1809	0.0262	<0.0001*



Gender Equality in Gambling Student Funding: A Brief Report

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Abstract: Acknowledgement of gender disparity in academia has been made in recent years, as have efforts to reduce this inequality. These efforts will be undermined if insufficient numbers of women qualify and are competitive for academic careers. The gender ratio at each graduate degree level has been examined in some studies, with findings suggesting that women's representation has increased, and in some recent cases, achieved equality. These findings are promising as they could indicate that more women will soon qualify for early-career academic positions. Most of these studies, however, examine a specific—or narrow subset—of academic disciplines. Therefore, it remains unclear if these findings generalize across disciplines. Gambling researchers, and the graduate students they supervise, are a uniquely heterogeneous group representing multiple academic disciplines including health sciences, math, law, psychology, and sociology, among many more. Thus, gambling student researchers are a group who can be examined for gender equality at postgraduate levels, while reducing the impact of discipline specificity evident in previous investigations. The current study examined graduate-level scholarships from one Canadian funding agency (Alberta Gambling Research Institute), awarded from 2009 through 2019, for gender parity independent of academic discipline.

Keywords: gender bias, women in science, gambling research, graduate training, funding data

Introduction

The 'leaky pipeline' metaphor has been used extensively to describe the tendency for women to discontinue the pursuit of higher academic rank prior to the pipe terminus (i.e., attainment of full professor academic rank) (see for example: Alper, 1993; Barshay, 2016; Blickenstaff, 2005; Grogan, 2019). The pipeline metaphor was formulated decades ago in association with science, technology, engineering, and mathematics (STEM) disciplines (Miller & Wai, 2015) but has since been used as the framework for studies in many academic disciplines examining the stage—that is, academic level—at which women's representation is diminished (i.e., when 'leakage' occurs); for example, behavioural neuroscience (Titone et al., 2018), biomedical sciences (Hechtman et al., 2018; Pohlhaus et al., 2011), palliative care (Sleeman et al., 2019), anthropology (Turner et al., 2018), etc. Alongside the increasing prominence of gender equality issues being articulated in the academic literature, concentrated

efforts to recruit traditionally underrepresented groups into academia have been undertaken, including specific efforts to recruit women.² Yet, early academic career gender disparity continues to be evidenced in some studies (e.g., Duch et al., 2012; Hill et al., 2010; Vaid & Geraci, 2016), possibly because overcoming long-standing institutional biases is a slow and arduous process (Shaw & Stanton, 2012). Interestingly, some have argued that gender parity has been achieved in academia (e.g., Ceci et al., 2014; Ceci & Williams, 2011; Miller & Wai, 2015)—a claim that is countered by others who assert that reductions in the gender gap do not amount to a full redressing of gender inequality (e.g., Geraci et al., 2015; Grogan, 2019; Titone et al., 2018). It may be the case that these conflicting conclusions stem from either the metrics used to assess gender equality, or the academic discipline of the sample investigated, or some combination of the two. That there is not yet consensus on the matter necessitates additional research focused on gender (in)equality in academia.

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² We acknowledge that the demarcation of bivariate genders is insufficient and not necessarily representative of, or consistent with, one's biological sex. Also, despite these shortcomings, we opted to use the terms women and men to indicate gender to be consistent with the literature discussed.

Measuring Equality in Academics

To establish if equalization efforts are being realized in career academia (i.e., early through late career academic levels), previous work has examined equality in the number of doctoral degrees awarded or other research productivity metrics, including the number of publications (Feldon et al., 2017; Lubienski et al., 2018; Mihaljević-Brandt et al., 2016; Pezzoni et al., 2016; Rossello et al., 2020; Turner et al., 2018), authorship order on publications (Fox et al., 2016; Mihaljević-Brandt et al., 2016; West et al., 2013), research impact factors (Astegiano et al., 2019; Myers et al., 2019; Yang et al., 2019), research funding received (Hechtman et al., 2018; Pohlhaus et al., 2011; Titone et al., 2018), and invited talk opportunities (Sleeman et al., 2019). These metrics have likely been used to examine equality in academia as they are in line with the productivity necessary to secure promotion and tenure (e.g., Emden, 1998; Hechtman et al., 2018; McGrail et al., 2006), and as such, there is valid reason for the use of each of these metrics. There are, however, also problems with these metrics.

Awarded Degrees

Early career tenure-track academic applicants typically have received, or are about to receive, a doctoral degree.³ Equality of gender among PhD recipients does indicate that an equal number of individuals are becoming *qualified* for early academic career positions (i.e., have the degree required for a tenure-track position). What complicates conclusions about the career academic pipeline based on this metric is that not all PhD recipients will try—or even intended to try—to transition into academic career placements. Some PhD recipients may be ‘leaking’ out of the pipeline at this level; others, however, will have had career aspirations outside of the academic pipeline in the first place. Examining equality in the number of doctoral degrees awarded does not, therefore, fully inform our understanding of equality in early academic career status. Moreover, while the number of PhDs awarded has—at times and in certain disciplines—been at or near parity (Burrelli, 2008; Miller & Wai, 2015; Phou, 2017; Shaw & Stanton, 2012; Walker, 2018; West & Curtis, 2006), this equality does not necessarily translate into equitable professional *competitiveness* for new/early career academic positions. Competitiveness, based in large part on research productivity, is an important issue as new tenure-track positions in academia are increasingly rare. Although the actual availability of these new positions varies by discipline and by country (e.g., Burrelli, 2008; Edge & Munro, 2015; Hargens & Long, 2002; Phou, 2017; Shaw & Stanton, 2012; Valian, 1999; West & Curtis, 2006).

Research Productivity

Instead of doctoral degree attainment, many studies have examined research productivity metrics for indications of gender equality in academics (i.e., number of and/or authorship order on publications, research impact, research funding, etc.). Of note, metrics indicating research productivity for career academics are the same as the metrics that provide a competitive edge to those applying for early career academic positions. Amassing a competitive early career curriculum vitae takes time however, which necessitates a history of successful performance that must begin prior to receiving a PhD. In academics, success begets success, as it has been shown that an early publication history (i.e., first year of PhD program) predicts increased number of subsequent publications (Pezzoni et al., 2016), those with more publications are more likely to secure research funding (Pohlhaus et al., 2011), and early career recipients of major grants are more likely to be awarded subsequent research funding (Hechtman et al., 2018). As such, equality studies must consider these performance metrics where they typically begin. Examinations of gender differences in these performance metrics at the graduate studies level (i.e., among academics in training) would contribute important insights toward our understanding of equality in academia, specifically in relation to competitiveness for academic careers.

Gender Differences in Productivity During Graduate Studies

Publications

A number of studies have examined gender differences in publications of students at the graduate level. One study examined publications from STEM disciplines with graduate students as first authors: Pinheiro et al. (2014) demonstrated that in the years between 1970 and 1999, graduate students that were published as first authors tended to be men. Pinheiro et al. (2014) also report, however, that from the year 2000 onward, the trend reversed as more women graduate students published articles as first authors. Pinheiro et al.’s study may be an anomaly in the literature as the general trend is for graduate students who are men to be responsible for more publications submitted (Feldon et al., 2017; Lubienski et al., 2018; Pezzoni et al., 2016; Rossello et al., 2020; Turner et al., 2018), more co-authored papers (Pezzoni et al., 2016), more invited podium and symposium presentations (Turner et al., 2018), and more presentation-based disseminations (i.e., podium or poster presentations; Turner et al., 2018). Graduate student men were also found to receive greater international recognition of their work as compared to women (i.e., research impact factor; Horta et al., 2018). This trend is reportedly the case in STEM disciplines, social sciences, applied health, humanities,

³ This may not be reflective of teaching stream/non-tenure track applicants.

and creative arts (Feldon et al., 2017; Lubienski et al., 2018; Pezzoni et al., 2016; Rossello et al., 2020); but not in education or bioarchaeology, where no significant gender differences were found (Lubienski et al., 2018; Turner et al., 2018).

Productivity as a Function of Funding

Two other studies were conducted that should be noted, as they both investigated publications as a function of PhD-level funding. The first investigated life science publications after students in this discipline either received, or had honourable mentions for, a prestigious merit-based science and engineering research award (Graddy-Reed et al., 2019). Graddy-Reed et al. (2019) report that five years after award distribution, women award recipients had published less than both groups of men: those who won the award and those who received an honourable mention. The findings of Graddy-Reed et al. (2019) are not surprising as they follow the trend previously noted. What is surprising is that they did not attempt to ascertain if there were gender differences in the award distributions and even go so far as to say that they ‘assume that the benefit from the financial allocation does not vary across gender’ (p. 2). The second related study also found that men who received funding tended to publish more than women, irrespective of research discipline (Horta et al., 2018). Horta et al. also found, however, that those who received PhD funding had greater academic career productivity irrespective of gender. It might be the case that funding allows students more time to research and publish, time that would otherwise have been spent in non-academic work necessary to sustain basic necessities, including food and lodging. That funded women were shown to publish less than funded men indicates that the direct impact of funding on publication rates is more complex and requires additional research.

Funding

As noted, although few in number, there are studies that have examined career trajectories indicating that graduate-level funding does influence graduate publishing performance and is also an important indicator of subsequent academic career trajectory (e.g., Graddy-Reed et al., 2019; Horta et al., 2018). Yet few studies have been conducted to examine if the research funding allocated to graduate students varies by gender. Those that have undertaken this challenge have reported conflicting results: one reporting more funding distributed to men than women in STEM PhD programs (Buffington et al., 2016), one demonstrating equality in the distribution of graduate-level (master’s and doctoral) awards in cognitive psychology and neuroscience (Titone et al., 2018), and another reporting that men were somewhat less likely to receive PhD funding than women in the disciplines of medical and natural sciences, social sciences, and humanities (Horta et al., 2018). Based on these reports, it may be

tentatively inferred that, in very recent years, graduate-level funding is being distributed at least equitably between women and men. It remains a possibility, however, that the conflicting findings noted above are influenced—at least in part—by the disciplines examined in each study.

The Current Investigation

The current research aimed to add to the body of research examining gender equality in graduate-level scholarship award distributions. Specifically, gender equality among graduate-level gambling research scholarship award recipients was examined.

Method

Sample

Scholarship Recipients

The sample examined in this study consisted of Alberta Gambling Research Institute (AGRI) master’s- and doctoral-level scholarship recipients. There were two reasons for choosing to examine gambling student researchers. First, gambling researchers and the graduate students they supervise are a uniquely heterogeneous group representing multiple academic disciplines, including health sciences, mathematics, law, psychology, and sociology, among many more. Thus, gambling student researchers constitute a group that can be examined for gender equality at postgraduate levels that is less impacted by the discipline specificity evident in previous investigations. Second, while it *might* be the case that established gambling researchers are influenced by (or are characteristic of) the patriarchal hegemony seen in academia more broadly (for discussion, see: Armato, 2013; Bagilhole & Goode, 2001; Ceci et al., 2014), it *is* the case that gambling research in the future will be conducted by some of these students (i.e., rising gambling researchers). Any shift towards equality in the characteristics of gambling researchers specifically, and academics more broadly, requires the training and upward mobility of women researchers.

Scholarship Funding Agency

The AGRI merit-based scholarship program was selected for four reasons. First, AGRI is currently the only remaining gambling-specific research institute in Canada. AGRI’s primary purpose is to support gambling research in Alberta, Canada, while also aiming to achieve international recognition by actively promoting institute-affiliated research and by contributing research funds for international collaborations. Second, AGRI’s scholarship recipients are acknowledged in publicly available annual reports, thereby providing unhindered access to scholarship awards data. Third, AGRI’s scholarships are single-year awards. In this way, AGRI differs from some funding agencies (e.g., Canadian tri-council) that award varying lengths of multi-year awards (2, 3, or 4 years) depending on the program level and the proposed project. Students are able to receive

multiple awards from AGRI—up to a maximum of four awards—but they must apply annually, allowing annual comparisons to be made. Finally, AGRI's scholarship program, unlike many other Canadian scholarship programs, is inclusive. Meaning that AGRI's master's- and doctoral-level scholarships may be awarded for any gambling-related project without bias based on the applicant's academic discipline, the research type (applied versus pure), or the specific topic or aims of the gambling project.⁴

Coding Data and Gender

Titone et al.'s (2018) procedures were used to examine the distribution of AGRI scholarships as a function of gender. Specifically, publicly available AGRI annual reports for the years 2009–2019 were accessed via the institution's website (Alberta Gambling Research Institute, n.d.). From these reports, we determined the scholarship year, the scholarship recipients' names, recipients' disciplines, and award levels (master's or doctoral). As this information was publicly available, neither AGRI nor the award recipients were contacted for this study. Gender was coded based on the scholarship recipient's first name. As per Titone et al.'s (2018) procedures, when uncertainty existed from the first name alone, public profiles were examined.⁵ Following these procedures, the gender of one case remained uncoded. As has been done in previous studies (for discussion, see: Mihaljević-Brandt et al., 2016), the English-European name was coded based on the gender indicated by an online Western culture-based baby name dictionary (babynames.com).

Planned Analysis

To evaluate whether gambling scholarship award distributions at the master's or the doctoral level varied as a function of gender, non-parametric hypothesis testing analyses were planned. A priori alpha was set to .05 for planned analyses, and this alpha level was maintained for exploratory analyses.

Results

In the years 2009 through 2019, 99 scholarships were awarded; 36 master's-level and 63 doctoral-level awards. Scholarships were distributed to 47 recipients: 28 recipients were women and 19 were men. The number of master's and doctoral awards given per year by gender are presented in Table 1.

Award recipients were training in the following academic disciplines: general psychology (36%), clinical psychology (23%), neuroscience (8%), educational psychology (5%), business (5%), sociology (4%), health sciences (4%), anthropology (4%), psychiatry (3%), economics (2%), physical education and recreation

(2%), public health (1%), education (1%), and counselling (1%).

For each scholarship level, master's and doctoral, a chi-square analysis was conducted to examine award distribution as a function of gender. Fig. 1 (Panel A) presents the total number of awards distributed, collapsed across years, for each scholarship level by gender. The chi-squared analysis of master's-level scholarships was significant ($\chi^2(1, N=36) = 4, p < .05$), indicating women received significantly more master's-level scholarships than men. The chi-squared analysis of doctoral-level scholarships, on the other hand, was not significant ($\chi^2(1, N=63) = 0.12, p = .71$). Meaning that the distribution of scholarships issued was equitable between genders at the doctoral level.

A second set of analyses was used to explore whether the results of the planned analyses were stable across time. Specifically, these analyses were conducted to examine if the detected inequality that favoured women at the master's level was consistent in early and later years, and if equality in the doctoral award distribution was stable across time. Two chi-square goodness-of-fit analyses were conducted, comparing awards issued in earlier years (2009–2014) to late years (2015–2019), one at each scholarship level (Fig. 1, Panel B). Non-significant chi-square test results were found at both the master's ($\chi^2(1, N=36) = 1.41, p = .24$) and doctoral level ($\chi^2(1, N=63) = 0.06, p = .80$), indicating that the distribution of awards issued at each scholarship level has been consistently equitable across the times in question. In addition, this analysis implies that the favour shown for women at the master's level was an artifact of the analysis created by combining years. Taken together, both master's- and doctoral-level scholarship award distributions tend towards gender equality.

One final exploratory analysis was conducted to examine award distribution rates for possible gender differences. Recall that AGRI scholarships are annual awards, regardless of scholarship level, and that students are eligible to receive up to 4 awards. Among the recipients, 57.2% of women ($n=16$) and 77% of men ($n=13$) received two or more AGRI scholarships. Fig. 1 (Panel C) presents the frequency of total awards received by gender. An exploratory analysis was conducted to ascertain if the percentage of recipients receiving more than one scholarship differed between men and women. The results indicate that this is not the case ($\chi^2(1, N=28) = 2.92, p = 0.09$). Women and men were equally likely to receive multiple awards, a result that further indicates gender fairness in AGRI award distribution.

⁴ In contrast with AGRI's inclusive policy, Canadian tri-council funding agencies divert projects between three categories: health (CIHR), social science (SSHRC), and natural science (NSERC). As such, examining any branch of tri-council funding for gambling research will be biased by discipline.

⁵ Public profiles for four individuals were reviewed. Profiles were examined for pictures and/or personal pronouns.

Table 1
Number of Master’s and Doctoral Scholarships Awarded by Gender by Year

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Master’s											
Men	1	1	0	2	3	0	1	3	1	0	0
Women	2	1	1	1	2	2	1	2	2	5	5
Doctoral											
Men	2	0	1	0	2	5	3	3	6	4	4
Women	1	0	1	2	4	4	5	6	3	2	5

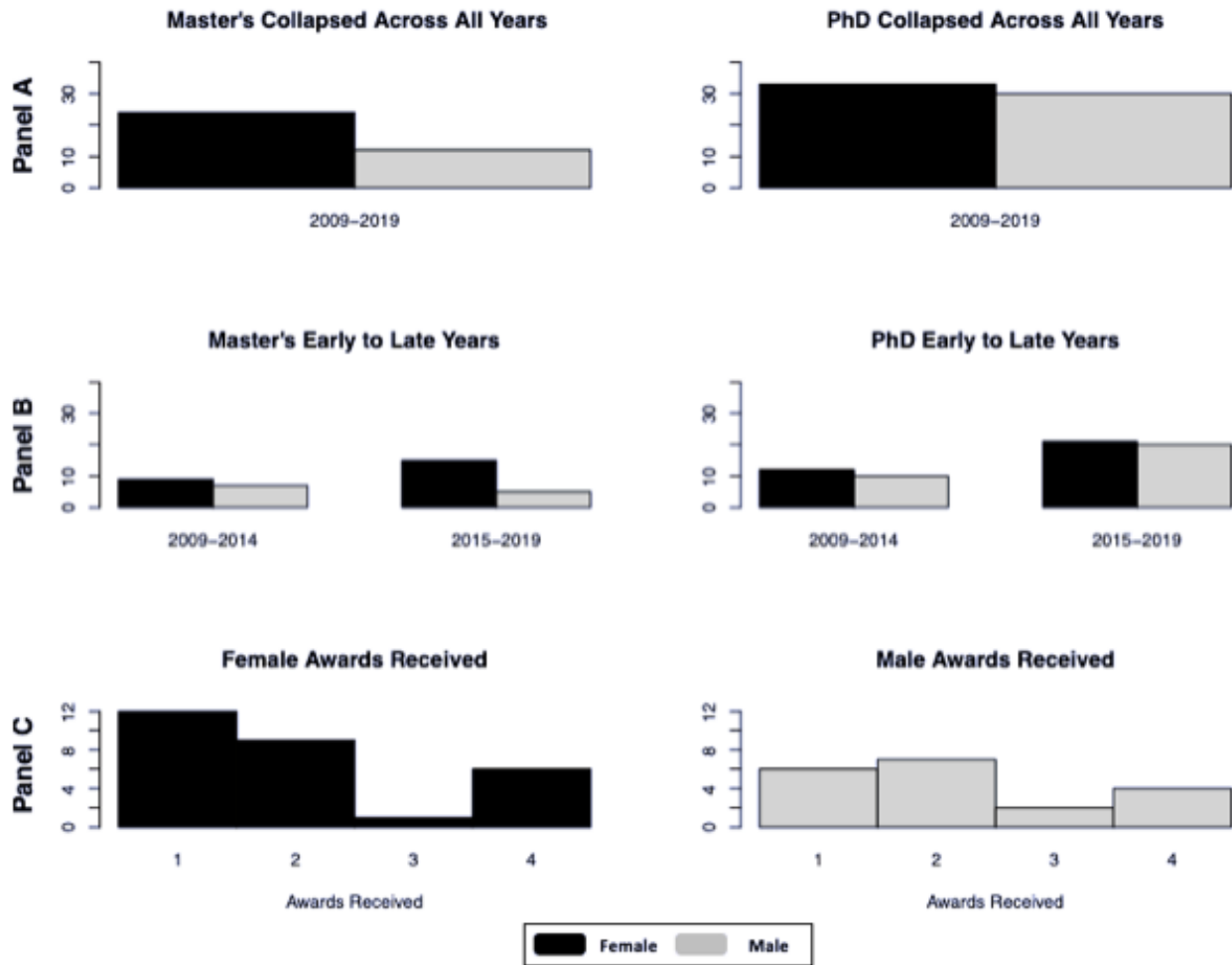


Fig. 1. Panel A: Total number of master’s-level awards (left) and doctoral-level awards (right) by gender across the years in focus (2009–2019). Panel B: Total number of awards granted in early years (2009–2014) and late years (2015–2019) by scholarship level: master’s (left) and doctoral (right). Panel C: Total number of annual awards received across all years by female recipients (i.e., women) (left) and male recipients (i.e., men) (right).

Discussion

When reviewing the literature addressing whether or not gender parity has been achieved in academia, two points became increasingly clear. First, equality in the upper echelons of academia cannot be *attained or sustained* if insufficient numbers of women are being adequately prepared to move up through the academic pipeline. Preparation in this sense includes receiving a doctoral degree, but the experiences that will help build

a competitive curriculum vitae, such as receiving competitive funding, are also important. Equality in competitive graduate-level funding from AGRI provides some indication that women are being prepared for the transition into early career academic positions. Second, much of the literature is influenced by discipline specificity; that is, previous studies focus on one—or a select few—research disciplines. So, if leaks in the pipeline are found, they too are discipline specific.

Gambling as a research focus, on the other hand, is uniquely multidisciplinary, and thus is less impacted by research/academic discipline specificity. Examining this particular group of scholars is a novel undertaking in itself, as previous gambling studies have not focused on gambling researchers.

The results of this study indicate that AGRI's annual graduate-level scholarships were distributed equally between women and men. This was the case across all years investigated (2009–2019), and at each graduate-level rank (master's and doctoral). It was also found that women and men were equally likely to receive subsequent annual awards from AGRI. This indicates that the meritocratic advancement of graduate students appears to be gender fair, through both graduate-level ranks, at least among those within AGRI's purview. This supports the growing body of research that finds increasing gender fairness among recipients of competitive graduate-level funding (Horta et al., 2018; Titone et al., 2018). Given the inconsistent findings reported by Buffington et al. (2016), however, additional research is required to be confident that gender equality is being achieved in graduate-level funding in broader arenas (i.e., different multidisciplinary samples and award types). Second, this finding speaks to the gender representation among *funded* gambling student researchers. Equality among this sample suggests that rising gambling researchers are allotted equal competitive advantages with respect to the productivity metric of funding. While our results indicate equality across the decade examined, replication using a larger sample is required to be confident that these results are robust. Further research is needed to determine if the equality evidenced in this sample of AGRI-funded gambling student researchers is representative of the gender composition of all gambling student researchers, and whether the same equality exists in samples of gambling students funded through other sources (e.g., Canada's tri-council funding agencies).

Although no formal investigations of gambling researchers (students or established researchers) have been undertaken previously, we expected our sample of gambling research students would be discipline heterogeneous. Relative to previous investigations of equality in academia (e.g., STEM, Buffington et al., 2016; social sciences and humanities, Horta et al., 2018; cognitive psychology and neuroscience, Titone et al., 2018), discipline diversity was evident in our sample, with award recipients representing 14 different academic disciplines from anthropology to public health.⁶ While there are certainly more than 14 research disciplines in academia, the sample used in this study is more diverse than those used in previous investigations. That being said, additional research is

required to be assured of the generalizability of the current findings. Future investigations of gender equality in both gambling-specific studies and academia more broadly would benefit from the use of discipline-diverse samples to limit discipline specific conclusions.

Two limitations of the current study require acknowledgement. First, as previously noted, coding gender based on published first name contributes to the artificial bivariate characterization of gender. Despite this limitation, the methods used in this study were selected to allow connectivity with—and the ability for comparison to—previously published studies on the topic of equality in merit-based funding. Second, the current study used publicly available award distribution information, but cannot speak to equality at the application stage. Future studies should therefore review scholarship *success rates* for gender parity. Success rates would allow for the gender distribution of all applicants to be taken into account when examining the distribution rates. An analysis of this kind would answer the slightly different, yet important, question of whether women and men are equally likely to be successful in the pursuit of competitive funding.

One of the goals of this study was to examine gender differences in gambling student researchers specifically, as some of these students will likely form the next cohort of gambling researchers.⁷ Thus, this study intended to provide a platform on which future investigations of gender equality in gambling research can build. Of immediate note, the current study's results indicate two paths of future research. Future studies should investigate whether gambling scholarship recipients pursue academic careers and, if so, examine the career trajectories of these recipients. Mixed methods research may be most suitable for the first line of investigation suggested. An examination of career intention is deemed necessary to overcome a weakness of the leaky pipeline metaphor: evaluating if recipients who left academia 'leaked out of the pipeline' at the graduate school level or if graduate training was undertaken to fulfill career aspirations outside of academics (i.e., they were not really in the pipeline to begin with).

The latter recommendation would build on previous literature indicating that graduate-level scholarship recipients evidenced greater academic career productivity years later (Graddy-Reed et al., 2019; Horta et al., 2018). Here, we found that gambling student researchers were discipline diverse and that equitable numbers of women and men received the competitive AGRI scholarship. The career trajectories of these gambling research students were not investigated in this study; however, this line of investigation does seem a logical next step. Future studies then should seek to

⁶ Just over half of the disciplines represented can be considered psychology related; however, each of these are sufficiently different with respect to educational training and outcomes to consider them distinct disciplines.

⁷ It is possible that academics with established research programs will shift focus to include gambling research; however, it is more probable that students doing graduate-level training in gambling studies will continue studying gambling if they remain in academia.

ascertain if gender equality continues among those who pursue academic careers, and whether greater academic career productivity can be predicted from receiving an AGRI scholarship.

Conclusion

The current study was undertaken to meet two distinct, yet intertwined, goals. The first goal was to contribute to the discussion of gender equality in the academic pipeline. The second goal was to begin the discussion of gender equality in gambling research and provide some preliminary information about upcoming gambling researchers. Herein, graduate-level scholarships from one Canadian funding agency (AGRI), awarded from 2009 through 2019, were examined for gender parity. Discipline diversity was detected among the 47 award recipients with 14 different academic disciplines represented. The results indicated that AGRI's annual graduate-level scholarships were distributed equally between women and men, across years (2009–2019), and at each graduate level (master's and doctoral). Women and men were also equally likely to receive subsequent annual awards from AGRI. Future studies should examine the impact of receiving these gambling-specific graduate-level scholarships on career competitiveness and trajectory.

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Rationalization as a Dissonance Management Strategy among Electronic Gambling Machine Players

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Abstract: Erroneous gambling-related beliefs are well researched in light of their association with problem gambling, with some research suggesting these beliefs also serve as justifications for gambling behaviour. The process of justification (i.e., rationalization) can provide insights into how those who gamble resolve dissonance resulting from persistent loss in the gambling context. Using in-depth interviews of 43 participants who identified electronic gambling machines as their preferred game type and were either experiencing gambling problems or were at risk of developing a problem, this study details how dissonance is managed through rationalizations in line with the Dawson (1999) framework. This framework is based on research of religious groups surviving prophetic disconfirmation and is employed here to highlight the contextual and socio-cultural underpinnings of rationalizations along with their supernatural and pseudo-religious qualities. Rationalizations reflect broader socio-cultural beliefs around morality, work, speculation, perseverance, and the supernatural. Implications for treatment are discussed.

Keywords: problem gambling, cognitive dissonance, erroneous gambling-related beliefs, rationalization

Introduction

While condemned by many major religions, especially those that assert 'authority' in the 'transcendental,' gambling is found to embody magical, supernatural, and religious qualities (Binde, 2007a, p. 145). Binde's (2007a) paper on gambling and religion noted the reflections of many early scholars on this association. For instance, anthropologist Edward Tylor (1871) surmised that secular gambling has its evolutionary origins in religious practises of divination, and sociologist Lévy-Bruhl (1924, p. 200) stated that gambling possesses a 'metaphysical and almost sacred meaning.' For many, gambling offers hope (Downs, 2015) and the promise of a miracle akin to religious or spiritual forms of salvation (Binde, 2007a; Gudgeon & Stewart, 2001). While this may run counter to religious tenets, one can surmise that 'religion and gambling are alternative cultural systems of meaning and ritual,' where avoiding religiously condemned behaviours for the promise of salvation is culturally congruent to gambling for a 'secular reward' (Abt & McGurrin, 1992, p. 415).

Many years ago, Tylor (1871, p. 80) wrote that the 'arts of divination and games of chance are so similar

in principle that the very same instrument passes from one use to the other,' referring to objects such as playing cards and dice. Electronic gambling machines (EGMs) are modern-day instruments of divination referred to by Schüll (2012, p. 95) as 'vehicles of enchantment' in her ethnographic study of EGM players. Machines are designed in such a way to pull the player in while the mechanisms underlying them are unclear, allowing those using them to form their own doctrine on how they function (Turner & Horbay, 2004). The environments that house these machines are similarly designed, creating a 'cocoon' of insulation and security that 'disorients space and time' (Schüll, 2012, pp. 36, 41–43). Abt and colleagues (1985, p. 86) described the casino as an environment that secludes the player from 'outside demands', allows them to leave their ordinary identities and come together with others within a distinctive and even sacred space. In this vein, Ocean and Smith (1993) suggest those who gamble in casinos are united in a common cause.

The religious and magical undertones of gambling are also discussed in the broader problem gambling literature on erroneous gambling-related beliefs

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(EGRBs). Those who gamble commonly hold EGRBs about how gambling works (e.g., Wohl & Enzle, 2002); especially those with gambling problems (Goodie & Fortune, 2013), who experience the majority of the adverse financial, relational, health, and legal consequences (Langham et al., 2015). EGRBs are thought to be involved in the development of problem gambling (Cowie et al., 2017; Fortune & Goodie, 2012; Ladouceur et al., 2001), although some have suggested that this causal relationship requires further exploration with advanced methods and instruments (e.g., Leonard et al., 2015). Nevertheless, a key component of most problem gambling treatment is cognitive therapy, where attempts are made to correct EGRBs or weaken their validity by challenging them in the therapeutic context (Fortune & Goodie, 2012; Toneatto, 2002).

EGRBs take many forms, and there is some debate about whether they derive from general cognitive biases (Fortune & Goodie, 2012) or from broader cultural belief structures that inform beliefs in the ability to find the right strategy that are then tested in the gambling context (Ejova & Ohtsuka, 2020). Ejova and Ohtsuka (2020) reviewed 40 studies of EGRBs and categorized beliefs as natural and supernatural. While 'natural' refers to beliefs about randomness, 'supernatural' references beliefs in god(s), luck, and other spiritual forces (Ejova et al., 2015). Czerny and colleagues (2008) explained that EGRBs form the justifications for continued gambling behaviour. Adding support to this understanding of EGRBs, Yuen et al. (2018) found evidence of mutual causality between EGRBs and behaviour, noting that both cognitive theory and cognitive dissonance should be considered in future research and treatment.

The psychological theory of cognitive dissonance (Festinger, 1957) suggests that when beliefs and attitudes are imbalanced, or dissonant, with an individual's actions, an attempt to resolve the imbalance will be made, through either belief, attitude, or behaviour modification. Those experiencing problem gambling are well-entrenched in the activity, having invested time, money, and energy. Therefore, instead of altering their gambling behaviour to resolve dissonance, they are more likely to try and justify their continued participation. This type of rationalization—that is, the process of justifying controversial behaviour—would then describe how a person manages dissonance in the face of persistent loss.

This research will employ a dissonance management framework derived from research on religious groups in order to provide a perspective that is sensitive to contextual/environmental cues, the influence of broader socio-cultural beliefs, and the transcendental and religious aspects of the casino-based gambling experience. Dawson (1999) and other researchers in the new religious movement field (e.g., Melton, 1985; Zygmunt, 1972) uncovered three

adaptational strategies used to manage dissonance caused by prophetic failure, with rationalization situated as the most important strategy in maintaining prophetic belief. Dawson's (1999) emphasis on rationalizations in dissonance management makes this framework useful in extending our understanding of how those experiencing problem gambling make sense of continued play in the face of persistent loss, something shared by both members of prophetic groups and those well entrenched in gambling.

Methods

Recruitment

A total of 43 adults were recruited from Toronto, Ontario, Canada, via online and paper-based classified advertisements that solicited study participants who cited EGM as their primary game of choice. Participants were screened using the Lie/Bet instrument (Johnson et al., 1997), a brief screening tool for problem gambling. During the interview, participants were assessed with the Problem Gambling Severity Index (Ferris & Wynne, 2001). Purposive sampling was used to recruit an equal proportion of men and women. All participants had to be of legal gambling age (i.e., 18 or older). The sample demographics are outlined in Table 1.

Procedure

The study was approved by the Research Ethics Board of the University of Toronto, and all participants gave written informed consent. A semi-structured interview guide was administered to individual participants with questions about beliefs and behaviour, but participants were encouraged to expand on their beliefs, ideas, and experiences throughout the interview. Participants were referred to as experts regarding their lives in line with feminist epistemological insights (e.g., Devault, 1990). Interviews lasted between 60 and 120 minutes and were conducted by one interviewer [TH]. All participants were given a \$20.00 honorarium, with the monetary compensation being disclosed only when asked by the participants in order to avoid its influence on their decision to participate.

Analysis

Interviews were audio-taped, transcribed verbatim, de-identified to ensure anonymity, and coded for emergent themes by the principal investigator with NVivo qualitative analysis software (QSR International, 2014). Qualitative content analysis (Hsieh & Shannon, 2005) was informed by an existing framework, namely Dawson's (1999) categorization of rationalizations.

Table 1
Sociodemographic Characteristics of Study Participants

Sample Composition (n=43)	
Characteristic	%
Gender	
Female	46.5
Male	53.5
Age range	
21 to 30 years	14.0
31 to 40 years	18.6
41 to 50 years	34.9
51 to 60 years	20.9
61 and older	11.6
Marital status	
Never married	41.9
Married	18.6
Separated	4.7
Divorced	20.9
Widowed	2.3
Cohabiting	11.6
Education	
Secondary	25.6
Trade school	9.3
College diploma	4.7
Some university	27.9
University degree	9.3
Masters/Professional degree	14.0
Income range	
Less than \$20,000	23.3
\$20,001 to \$40,000	32.6
\$40,001 to \$60,000	32.6
\$60,001 to \$100,000	11.6
Ethnic background	
Indigenous	2.3
British Isles	18.6
Caribbean	14
Eastern/Other European	4.6
Southern European	25.6
Western European	7.0
Latin/Central/South American	2.3
West and East/South East Asian	14.0
South Asian	11.6
Canadian-born	
Yes	55.8
No	44.2
Problem Gambling Severity Index (PGSI) Score	
Moderate-risk	34.9
Problem gambling	65.1
Electronic gambling machines exclusively	
Yes	86
No	14

Framework

Dawson (1999) summarized four main types of rationalizations used to manage dissonance: 1) spiritualization; 2) test of faith; 3) human error; and 4) blaming others.

Spiritualization involves the reinterpretation of the prophesied event 'in such a way that what was supposed to have been a visible, verifiable occurrence

is seen to have been in reality an invisible, spiritual occurrence' (Melton, 1985, p. 21). In other words, the event happened, but on another spiritual plane.

Test of faith involves members of a group reinterpreting a failed prophecy as a success, claiming their continued faith in the face of seeming failure was proof of their worthiness to some larger entity or force. Members rationalize failure as a misunderstanding or

misinterpretation (i.e., failing to read the signs correctly), or conclude that the group did not merit the prophecy coming true yet.

Human error is another rationalization used to explain failed prophecy. Human error is the result of misunderstandings, miscalculations, or the 'moral inadequacy of followers' (Dawson, 1999, p. 67). However, the group may, in addition to or alternatively, hold outside forces, supernatural or natural, as being responsible for the failure. These rationalizations are ideal types and can occur in a united fashion (Dawson, 2012). For instance, failed prophecy could be characterized as a test of faith while stemming from human error.

Sample

Using the Problem Gambling Severity Index to assess gambling problem severity, 65% of participants scored at the problem gambling level, while 35% were at risk of developing gambling problems. The sample composition (Table 1) includes a high percentage of people aged 41 years or older (67%) who participated exclusively in slot machine gambling (86%) and who have never been married (42%). Most had some post-secondary education (75%) and reported a gross annual income lower than \$40,000 (56%). The majority of participants were ethnically tied to Europe, followed by the British Isles; various parts of Asia were well represented (25.6%), as was the Caribbean (14%). Over half the participants were Canadian-born (56%).

Findings

Rationalizations

Dawson's (1999) framework was used to conceptualize rationalizations employed by participants to manage dissonance. The following sections will examine the four rationalizations, in line with the framework, that emerged from the data.

Spiritualization

Spiritualization signifies the reinterpretation of prophetic failure as something that was supposed to be visible and verifiable but is reimagined as an invisible spiritual occurrence on a higher plane of existence (Melton, 1985). Spiritualization is used to rationalize continued involvement in gambling, albeit manifesting in a less extreme fashion than among members of prophetic groups.

Gambling appeared to have a deeper significance that was often difficult for participants to explain. This might suggest implicit learning, where schemas or theories of the world may not have been fully discerned despite guiding behaviour. However, it might also imply something intangible about the gambling experience that defies verbalization. Participants struggled to provide an adequate description, although some elucidated a connection between gambling and spirituality: 'it's kind of like your luck or however the

gods prey on you. Kind of like it's spiritual I guess, I don't know' (Male, 33, South Asian).

For members of religious movements, participation provided spiritual fulfillment and meaning. So too, some participants explained just how valued an activity gambling was for them, not being able to imagine their life without it:

I think it [would] just feel like a void [if I had to stop gambling], like it's just turned into a routine for so many years of going to play. It's almost like an addiction, I guess. Like you feel like you need it. (Female, 51, South Asian)

Although it was difficult for participants to explain their attraction to gambling, the activity was said to satiate a need. Accordingly, the drug-use analogy was appropriate for several participants:

Yeah, there's that euphoria, you do hit. You do win [in some way], I guess. It's something that maybe only a doctor can explain. I don't understand the process, but I've heard that there's certain, I guess, endorphins that are released. I'm sure of it. I believe it. But yeah, there's definitely, you know, euphoria akin to probably some kind of drugs. And as I said, I mentioned that I've seen players with that crack-addicted look ... Well, I guess the hope of winning. That's basically what I think is the driving force, but I think it could be more than that. I think there's some kind of euphoria attached to it as well, to the process. (Female, 40, Southern European)

Equating the experience to drug use helped participants to understand and explain the profound effect of gambling. Others tied the euphoria experienced to the EGM itself, with emphasis on its mesmeric abilities:

Yes, it's exciting with all that noise and the flashy machines. Yeah, hearing all that noise. Yeah, it's all the lights. I don't know what it is, but it is hypnotizing. (Male, 50, Southern European)

The interactive features of the EGM might have helped respondents build personalized relationships with them, with many explaining that they encouraged the machines, in an effort to coax a win through communicative or tactile interaction. Some anthropomorphized them, inferring human-like qualities, including emotions and intellects: 'you will press this, dab, dab, dab [change pattern of play] ... you will try to mess up its mind [the machine]' (Female, 65, East and Southeast Asian).

Some participants held animist perceptions of EGMs, where the machines became divine objects with an otherworldly essence. Bestowing special significance,

participants seemed to project onto the machine the ability to determine their fate:

We're interacting with a machine to see if it's my best friend and to see if it's my enemy, to see if it can bring me some money or make me happy or something. And yes, you know that could be good with the pot of luck, gold. Well, because you never know the machine could work with you to be your best friend and say 'okay, here, I am going to help you win some money and go home' and it could be like a magical machine. Or it could turn into a devil and say you know what, 'I ain't going to be helping you today, because I want all of your money. So just give it to me ... and I am going to make you miserable for the night.' (Female, 52, Caribbean)

Additionally, larger forces were held responsible for a win, transcending the power of the machine:

If it's in my cards to win that day, I'll win. If it isn't, I'm not going to. It doesn't matter what machine I'm playing on. I feel that way. I really do. Fate. (Male, 37, Latin Central South American)

To describe undesirable outcomes at the casino, supernatural forces and fate were referenced, demonstrating a deeper connection to the game beyond that of chance. These amorphous beliefs were underpinned by euphoric states, helping participants to maintain commitment to gambling and faith in winning.

Test of Faith

Depending on the group's beliefs, histories, and circumstances (Dawson, 1999), the test of faith rationalization can have varied representations. As discussed in the new religious movement literature, despite prophetic failure, religious group members continued to believe that prophetic realization was imminent. In effect, the groups decided to persevere in the face of adversity (Dawson, 1999), holding onto faith in some moral order that will lead to prophetic confirmation.

Similarly, participants here seemed to possess intuitive faith in and the need for some moral order. Their allegiance to the prophecy, by way of ongoing and persistent involvement in the activity despite predictive failure, held special significance. They believed that to demonstrate their worth, persistence was necessary, which draws parallels to the gambler's fallacy:

Yes, and in fact, you know sometimes I empty my pocket then I'm trying to get my ... what I am really trying to do is get my money back. Yes, and then I am sort of persistent! (Female, 51, Caribbean)

Another participant voiced their faith in and commitment to winning:

Yeah, sooner or later it's gonna click. Paid my dues, yeah. Well, I mean hopefully, that I am gonna win. So one of these days. (Female, 60, British Isles)

To demonstrate moral worth as a controlled and measured player, one participant spoke pointedly of the importance in saving and investing one's winnings:

[If I won a] half a million dollars, wow, I would buy a house. Something little, not a half a million, but maybe a condo for \$200,000 or something. I would definitely ask my parents if they needed anything. I'd ask them if they needed some help with anything first of all because they've given me quite a bit in my lifetime. If they said no, I would also invest a chunk of it too, to get a better return, ... like maybe a GIC (Guaranteed Investment Certificates), something ... medium risky ... because if you've bought it at a certain rate ... after the five years it's lower than that, your zero return is, but your money, your principle will still come back to you. Yeah, I like that type of investment where your principle will come back but taking a risk to see if your money can double or return. Possibly (buy) a car ... and maybe second hand, nothing brand new. (Female, 52, Caribbean)

While many respondents indicated they would spend their new wealth, this was tempered by claims that they would make sound, rational decisions with the remaining money.

Maintaining a rational attitude towards wealth came alongside a steadfast belief that they were worthy of a win. Accordingly, they maintained, that despite failure, they were due for a win:

Oh yeah! That's what I feel right now, I am due. Because I haven't been for a while and I am due for a win. And the last time I went when I had money it was like that—I haven't won so now I feel it's ... the next time I go, I'm gonna win. Not big, but I'm going to win something. (Female, 25, Caribbean)

Strength of resolve was bolstered by the conviction that they, in contrast to others, were prepared and worthy of such a reward:

I just see all the other people they are living better than me. My parents were poor. I want to become like that, wealthy. I can handle wealth better than most. I don't want to become like somebody that has less than me; somebody who

is on the street, no, obviously. (Female, 56, Southern European)

'Due for a win' is similar in concept to the gambler's fallacy; however, here one's worth or readiness for a win appeared more meaningful than the idea of equilibrium restoration which underpins this fallacy. Respondents explained they should not expect or try to coerce a win, nor should they abandon self-control when gambling. This notion of moral worth as demonstrated by controlled gambling and tempered avidity suggests that the gambler's fallacy concept may be more nuanced than previously thought.

Human Error

Human error is a rationalization used by members of new religious movements to manage dissonance, attributing error to misunderstandings, miscalculations, or moral inadequacy (Dawson, 1999). This rationalization was used to describe losses attributed to erratic play driven by greed.

Participants faulted their desperation, manifesting in distracted and erratic play, when faced with gambling losses:

It's weird because I feel like I'd rather control my money than allow the machine to control my money or allow the computer to. But then it gets to the point where I will go to the slots as a desperation move. And then I'll play the slots and even though it feels like, okay, I'm winning something, in the long run I'm not. With all the bells and whistles, like, [it] distract[s] you. And eventually by the time you know, it's [my money] gone. (Male, 57, Other European)

It is a composed and controlled gambler that had the best chance of securing a win:

Calm. Yes. Everything's going at the pace it's supposed to go. That's when I find the days for me are the best. If I get into an uncontrollable urge and stuff like that and I want to do this so fast and I'm not, sort of, going to let time run by itself, I just don't have good days. ... I just don't have a good day when I sit, right, and I won't be concentrating. I won't be playing the game. My mind will be somewhere else. (Female, 62, Southern European)

Measured gambling and restraint were attached to worthiness. A worthy gambler, then, exercised self-control, and was not disoriented by a preoccupation with winning, as the same participant continued:

Yes. When I'm not focused it's going to be a bad day. It's a day when I'm not thinking about anything except just enjoying myself [that I win]. I don't think about winning, I think about just

enjoying myself so when I start thinking about winning some money that's when I never win. (Female, 62, Southern European)

Erratic gambling, which participants equated with avaricious play, would lead to gambling loss, signifying a lack of moral worth. That is, those who were overly eager would induce human error through frantic play motivated by greed:

People are naturally greedy. You can see that because if you go to a casino, you see people and they're up already \$500, you can see the credits they have but they keep playing. They don't stop and say, 'I have \$500. I think I'll go home now.' No, because everyone that goes there; they get greedy. Say you've won \$100, instead of going home you think, 'Now, I've won \$100, let's see if I can win another \$100 more' ... That's when you lose. (Female, 50, Caribbean)

Erratic play, driven by greed, was not the only way an individual could demonstrate moral inadequacy; high expectations could be equally problematic:

And, plus, if you really hope to win, you don't get it. That's my logic on it ... Don't hope to win. Don't expect it. Like expect the unexpected sort of thing. [If you don't expect it] it just comes. (Female, 26, East and Southeast Asian)

An amorphous higher order took account of behaviour both in and outside the casino. Being of good character amplified moral worth and, consequently, the chances of winning:

If you are a good person, not just to yourself and kind to others, I think you should have more chance ... But I never had that thought. If I had [that thought], I would feel like a greedy person ... I would say \$50,000. One hundred and fifty thousand—you're asking [for] too much [in a win]. Fifty thousand would be right ... I don't want to be or sound too greedy. I will be happy with \$50,000. (Male, 74, Western European)

Participants held the belief that, to secure a win, they had to exercise tempered avidity, moral worth, and faith. Those who were self-controlled and held modest expectations demonstrated the moral worth of a winner. These findings point to a gambling process that, for many, was anchored in an intuitive faith in, and need for, a higher moral order.

Blame Others

Prophetic failure, according to some religious groups, has been associated with a combination of individual-level shortcomings, group-level flaws, and missteps by outsiders. In order to manage dissonance,

participants similarly attributed losses in the casino context to the missteps of others. Typically, these rationalizations presented themselves in two ways.

First, other casino patrons were blamed for transmitting their negative energy, resulting in bad luck or unfavorable outcomes:

I often avoid the slot machines where I noticed someone is very upset and frustrated with it. I just ... I leave that one alone. I feel like it's one of those, like, bad omen like in the sense like his frustration and just his negative energy from that is just lingering over it [the slot machine] now. (Male, 36, Western European)

Blame was spread between fellow patrons and family or friends who joined them at the casino:

Like I would rather just say, oh, after like a few minutes, oh, this is how much I won kind of thing. So it's kind of like, if he's [her negative friend] around sometimes I feel like it's bad luck. I don't know. I think if somebody is like looking at you while you are doing it [gambling], it's kind of like jinxing you. I experienced it before. (Female, 43, Southern European)

In this case, a respondent identified a friend's watchful gaze as a form of negative energy, ultimately causing her to perform poorly, a commonly used rationalization.

Second, the casino establishment was blamed for its underhanded way of controlling the flow of wins:

And it was terrible. It was really bad [no payouts] ... I think management must have done something. ... [They] probably programmed the slots to be like that. Yeah, there were not many people at the slots. Yeah. I lost. I lost ... they're setting them up a certain way—I really do believe that. I don't think that you can beat the house kind of thing with the slots. Well, I'm sure that they [the casino establishment], they've got cameras ... that they know who you are right away when you sit down because you're using your identification card. They're assessing how much you spent. Possibly. I'm not saying for sure but ... (Male, 24, West Asian)

Participants placed blame on both others and their own error. When others were blamed, it was typically those in close physical proximity to the participant: anyone from a fellow patron to a loved one and even the casino establishment could be designated the cause of prophetic failure.

Discussion

This is one of the few studies that examined the rationalizations employed by those experiencing

problem gambling using a framework that highlights the deeper meaning affixed to the gambling experience and the contextual/environmental and socio-cultural underpinnings of rationalizations. Spiritualization, test of faith, human error, and blaming others were all used to explain gambling losses and are well-captured by Dawson's (1999) framework.

Within the context of spiritualization, respondents felt a deep sense of euphoria through interaction with EGMs, likening them to deities, a finding similar to Hayano (1978) whose poker players equated human opponents to 'whimsical forces ... or some other nonhuman spiritual being' (p. 486). Schüll (2012, pp. 77, 95) made a similar observation about EGMs when she described them as 'vehicles of enchantment.' In the same vein, Schüll (2012, p. 84) noted that casino industry insiders refer to the random number generator (RNG) in EGMs as the 'really new god' because 'people act like its casting a spell.'

Indeed, participants attributed animistic qualities to EGMs, reinforced by their vivid audio-visual components and their ability to determine the player's fate. EGMs are designed to pull people into the 'machine zone,' an affective state of balance and calm, as described by Schüll (2012). Although EGMs were a key aspect of the gambling experience, it was a mediator, in many ways, between them and transcendental forces. This research highlights the strong emphasis on the secondary illusion of control as described by others (e.g., Ejova et al., 2015) where control is situated outside the individual.

The test of faith rationalization was used to explain the importance of persistent faith despite continued failure. This is similar to Abt and McGurkin's (1992, p. 415) likening of gambling to religion, where the pursuit of 'an immediate secular reward' is 'culturally analogous' to the pursuit of 'a future heavenly reward.' Some argue Protestant beliefs about wealth and investment formed the basis of capitalism, and there is a kind of perverse and inverse analog to the Protestant work ethic and the spirit of capitalism (Weber, 1905/1930) in the rationalizations of these participants. Revealing a strange paradox in the gambling context, the ethical imperative of Protestantism, the virtuous accumulation of wealth through one's vocation, seemed to be a consideration for these participants in their journey to a secular form of salvation. Well aligned with the Protestant ethic's focus on rational capitalism, rationalizations revealed that salvation would require unwavering faith, in the form of controlled determination and righteousness. That is, many respondents qualified their worthiness by explaining that they would practice fiscal restraint, in alignment with the Protestant values of prudence and frugality. Respondents appeared to draw on both cultural and religious understandings to rationalize outcomes adding some support to Ejova and Ohtsuka's (2020) thesis that EGRBs are derived from broader beliefs that are common across cultures.

The gambling experience described by the study's participants seemed to edge towards religious expression and experience, especially given their persistent and unwavering intuitive faith and need for a higher moral order. As Hahmann (2016) described in her research on gambling beliefs, the well-documented gambler's fallacy did not simply reflect a 'self-correcting process in which a deviation in one direction induces a deviation in the opposite direction to restore the equilibrium' (Tversky & Kahneman, 1974, p. 1125). Being 'due for a win,' instead, reflects notions of moral worth, she explained. Here too a win was reserved for a morally worthy player expressed by, but not limited to, tempered avidity, controlled play, and good character. Not expecting a win was a way to curb their avarice. Only those who practised restraint, and were thereby unmoved by greed, would demonstrate the moral worth of a winner nearing themselves to a secular salvation. In an earlier study, bingo players spoke of the importance of not expecting a win, suggesting a similar notion of unworthiness marked by greed that should be avoided when gambling to win (King, 1990). While participants needed to temper their expectations to prove moral worth, their drive to pursue a win was propelled by an inherent need to have their worthiness validated. This calls to mind Weber's comments about the fundamental need for religious legitimacy:

The fortunate is seldom satisfied with the fact of being fortunate. Beyond this, he needs to know that he has a *right* to his good fortune. He wants to be convinced that he 'deserves' it, and above all, that he deserves it in comparison with others. He wishes to be allowed the belief that the less fortunate also merely experience his due. Good fortune thus wants to be 'legitimate' fortune.

If the general term 'fortune' covers all the 'good' of honor, power, possession, and pleasure, it is the most general formula for the service of legitimation, which religion has had to accomplish for the external and the inner interests of all ruling men, the propertied, the victorious, and the healthy. In short, religion provides the theodicy of good fortune for those who are fortunate. (1915/1946, p. 271)

Notions of moral worth are culturally pervasive, and participants might be pulling from broader cultural or religious beliefs when rationalizing their continued involvement in gambling. In this vein, Binde's (2007b) content analysis of 2,000 Swedish newspaper articles about lottery winners revealed that these winners were readily described in terms of moral worth, with blessings bestowed on the good and those in need. He suggested that such tales might fill the void left by folklore teachings and organized religion.

The final rationalization was directed outward, focused on the role of others in negative gambling

outcomes. Hayano (1978) similarly found that wins among poker players were often attributed to their own performance, while others were held responsible for losses. This rationalization did not manifest as simple blame deflection, but instead was congruent with what Toneatto (2002) described as 'luck as contagion,' in line with the 'law of contagion,' in his work on EGRBs. That is, energy, be it positive or negative, in the gambling context, could somehow transfer to those surrounding it and thus influence gambling outcomes. This form of cognitive framing is highly entrenched in our collective cultural consciousness, perhaps best exemplified by the widespread popularity of self-help books like *The Secret* (Byrne, 2006). Premised on the law of attraction, *The Secret* detailed how thoughts are made from 'pure energy,' through a process where like energy can attract like energy. For example, positive energy will attract like energy and can, thus, improve a person's condition. The pervasiveness of this cultural phenomenon was evident in the rationalization centered on blaming others, with respondents referring to the law of attraction, both of positive and negative energy.

In their entirety, these findings offer critical insight into the governing logic of these participants in addition to the deeper meaning they attach to gambling. This knowledge can help inform problem gambling interventions. Cognitive behavioural therapy (CBT), which targets EGRBs, is one of the foremost treatment approaches and uses a variety of techniques to challenge EGRB, such as questioning their evidential or formative basis, reframing explanations of gambling outcomes, and considering neglected evidence (Toneatto et al., 2007). While CBT has shown promise in the treatment of problem gambling, relapse and treatment non-response to CBT remain high (Toneatto & Millar, 2004). A key consideration might be the applicability of treatment techniques surrounding evidentiary facts when gamblers discredit such information in the gambling context. In fact, Reith's (2002) logic applies here: knowledge is socially constructed and 'adapted to meet the requirements of particular situations,' and in this sense, gamblers 'reject the knowledge provided by probability theory, adopting instead another type, more relevant to the environment of chance' (p. 156). Situated in a sacred space, participants in this study embraced supernatural and even divine insights while also drawing on culture more generally in their rationalizations.

Reflecting on the importance of culture in CBT treatment, Okuda and colleagues (2009) explained that cultural beliefs play a role in maintained behaviour and need to be considered in the application of specific interventions, such as those aimed at challenging EGRBs. Similar to Abt & McGurrian (1992, p. 415), participants described how gambling provided a 'cultural system of meaning and ritual' that was deeply important to them. Problem gambling interventions may, therefore, benefit from the application of less oppositional treatments in favour of more empathic, or

goal- and value-oriented treatment types, such as Motivational Interviewing (Yakovenko et al., 2015) or Acceptance and Commitment Therapy (Nastally & Dixon, 2012), which might help build a therapeutic alliance. In a similar vein, spiritual or holistic interventions/treatments (e.g., mindfulness or spiritual interventions, or Gambler's Anonymous) (Adedyoin et al., 2014; Schuler et al., 2016; Toneatto et al., 2014) might offer a connection to something greater than the individual. The selection of a more spiritual therapeutic approach should be tailored to the client and could perhaps be paired with more formal therapies for a more effective problem gambling treatment (e.g., Schuler et al., 2016).

What these rationalizations ultimately reveal is that gambling holds special meaning and may fill a deeper emotional or spiritual void. If gambling meets a need for deeper (and even sacred) meaning, this makes it all the more important to better understand the significance of the activity from the perspective of those involved in it and to be sensitive and mindful of this in the development and application of interventions aimed at curbing problem gambling.

Limitations and Opportunities for Future Research

This research draws on the gambling experiences, beliefs, and attitudes of EGM players, situated in a specific geographical context, so our findings are not generalizable to the full spectrum of gambling engaged persons. This research was also based on a convenience sample of 43 participants, including a combination of those gambling at the moderate-risk or problem level; however, given the preliminary nature of this research, these findings do offer unique insight into how players make sense of their losses and the deeper meaning and significance attached to gambling itself. Given that the adopted framework originated outside of the addictions field, there is an opportunity for future research to explore how these rationalizations might extrapolate or generalize to individuals without gambling problems.

Conclusion

This study uncovered the deeper significance affixed to the gambling experience. References to faith and morality suggest that gambling itself could be interpreted as a form of religious expression and experience. To better understand what draws people to gambling and keeps them engaged in the activity, despite adverse consequences, a complex interplay of psychological, sociocultural, and environmental/contextual factors should be considered. Dawson's (1999) framework, applied to the gambling experience, helped to determine the rationalizations used to justify behaviour that has significance for problem gambling treatment. While cognitive behavioural therapy is widely used to treat problem gambling, more holistic and less confrontational approaches might warrant consideration in light of findings that point to gambling

as a deeply meaningful activity. As noted in the work of Dawson (1999, 2012), dissonance management benefits from social processes (e.g., prior preparatory processes, social support processes) that strengthen rationalizations and, in turn, faith in prophetic confirmation. Future research should attempt to determine how social processes factor into dissonance management in the gambling context.

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Ambiguity and Abjection: Residents' Reactions to a New Urban Casino

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Abstract: While the social and economic costs and benefits of new gambling locations have been studied extensively, less is known about how new venues are experienced in view of city residents' spatial and sociocultural identities. This study examines residents' opinions and expectations on a new small-scale casino in the City of Tampere, Finland, as a case of new gambling opportunities in an urban setting. Nine focus group interviews were conducted with 43 Tampere residents three years prior to the scheduled casino opening. The study points out ways in which the residents struggled conceptually with the casino project. When speaking about it, participants drew on imagery from popular culture, drawing a sharp line between casino gambling and the everyday convenience gambling so omnipresent in Finnish society. As residents of a historical industrial urban region, the participants positioned themselves as critical of the municipality's aims to brand the venue in a larger experience economy entity. By drawing on the concepts of city image and city identity, this study is able to demonstrate that the cultural geographical intrusion of new physical gambling spaces can appear to be harmful to the city character. In this case, that harm is likely to hamper the success of the City of Tampere's experience market, of which the new casino is part.

Keywords: casino, city image, city identity, city residents, gambling, place-belongingness

Introduction

The social and economic implications of casinos are a well-covered topic in gambling studies. Researchers have been able to point out some positive consequences such as economic growth, reduced unemployment, and decreased illegal gambling (Bondolfi et al., 2008; Govoni et al., 1998; Koo et al., 2007). On the other hand, the establishment of new venues has also been shown to correlate with a growth of crime, family disruptions, problem gambling, and overall municipality expenses (Gerstein et al., 1999; Grinols & Mustard, 2006; Room et al., 1999; Welte et al., 2016). Regardless of the conclusions, the generalizations of the findings remain limited. Typically, studies have focused on large-scale casinos, which are tourist destinations in themselves. The implications of smaller casino initiatives outside an Anglo-Saxon context have scarcely been the object of gambling studies.

Eadington (1998) divides casinos into destination resort casinos and urban casinos. Destination resort casinos are typically located in remote areas where the local tourism industry, at times even the local economy, relies almost entirely on the casinos. The positive

economic impacts have been rather easy to argue for large-scale rural Native American casinos (e.g., Evans & Topoleski, 2002), where the opening of the gambling venues has brought about a rapid economic boost in employment and tax revenues. Urban casinos are, for their part, located in cities with a wider variety of other activities in trade, entertainment, and culture. Here, the casinos are not considered as the region's main tourist destinations. Despite the more limited economic impact, urban casinos have also been used as a revitalizing strategy for declining areas (Mazar, 2018) or even as a part of (re-)branding of a city (Gotham, 2007).

In 2021, Finland's second casino will open in the City of Tampere. With a population of 235,000, Tampere is the second largest urban region in Finland and is one of the country's growth centres. After an initial failed plan to establish a casino close to the Russian border that would target tourists, the Finnish gambling monopoly changed its strategy and chose Tampere as a location. This location was selected for its year-round customer base, independent of tourist seasons (Valtavaara & Harju, 2016). Located inland, far from country borders, the Tampere casino will mainly target the local and national market. It is planned as part of a larger

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commercial complex, currently under construction in the heart of the city centre. When finished, this multipurpose arena with a hotel, an ice hockey stadium, commercial space, and private housing will substantially shape both the city's skyline and the entertainment and business industries.

This study focuses on residents' meaning-making of the opening of the new Tampere casino. While gambling itself is a widespread activity among Finns (Salonen et al., 2019), this only applies to convenience gambling spaces. These spaces are part of people's everyday routines, easily accessible and located at the Finnish supermarkets, gas stations, and shopping malls (Egerer & Marionneau, 2019). Brick-and-mortar casino gambling, on the other hand, is geographically very limited as there is only one casino in the country, located in the capital, Helsinki. By unfolding residents' cultural constructs of casino activities and the cultural geographic fit that such activities have for Tampere, we argue this dimension is crucial for the survival of gambling locations as political and value-laden projects. From this perspective, the sustainability of gambling establishments is not measured in a quantified sum of costs and benefits (e.g., Anielski & Braaten, 2008). Instead, our perspective tends towards the less tangible factors of the city image (Gilboa et al., 2015; Peighambari et al., 2016), city identity (McCarthy, 2006), and place-belongingness (e.g., Antonsich, 2010; Kuurne & Gómez 2019).

City Image, City Identity, and Urban Planning

Every city is a combination of its unique history and its culture, people, physical landmarks, and several other factors. The concept of 'city image' influences how the city is perceived in people's minds (Gilboa et al., 2015), and refers to spatial and tangible dimensions of the city's physical environment, such as its location in the country, its characteristic architecture, as well as its services, transportation, and entertainment facilities. City image can also refer to intangible factors, such as its business opportunities (Peighambari et al., 2016), but generally does not include aspects of the cities' social identities, neighbourhoods, and places (McCarthy, 2006).

The concept of city image partly overlaps with the concept of 'city identity,' but a fundamental difference is that city image is based on *impressions*, while city identity 'relates to a city's history and circumstances, which imbue it with a degree of distinctiveness. In other words, identity relates to the city's character' (McCarthy, 2006, pp. 245–246). City identity is socially constructed and refers to the ways the city is experienced by different stakeholders; for example, the identity of the city as experienced by an entrepreneur is different from that of an unemployed person or a student (Gilboa et al., 2015).

Although a city's image evolves naturally over time, city branding is an attempt to strategically alter a city's image in a specific direction (e.g., Kavaratzis, 2005). Both

city image and city identity can be drawn upon and synergized in a city's branding strategy. However, several studies suggest that, in order for city branding to succeed, residents' involvement in city branding processes and their internalization of the city brand is vital (Antonsich, 2010; Eadington, 1998; Kavaratzis, 2005; Kunzmann, 2004). A mismatch between the residents' image of their city and the one officially aspired to would render the city branding futile.

The success and failure of a city branding is typically measured in economic terms (Kunzmann, 2004). The City of Bilbao, Spain, is a textbook example of a successful city branding in relation to a cultural landmark. The opening of the Guggenheim Museum transformed Bilbao, a former declining industrial city, into a world-class cultural destination that brings economic benefits to the region. Bilbao's city image has thus considerably changed by the goals to which its branding aspired. While cities can benefit from global brands, trying to recreate these global success stories can easily result in indifference, which is opposite of the cultural uniqueness, or unique selling points, that city branding hopes for.

The establishment of casinos has also been considered effective at revitalizing or rebranding declining areas (Mazar, 2018), with Atlantic City, New Jersey, USA, as perhaps the best-known example (Karmel, 2008). Las Vegas, Nevada, USA, symbolizes, incorporates, and materializes *The Tourist Casino Destination* per se. Hannigan (2007) has defined a 'casino city' as a city trying to replicate the Las Vegas success story of casino gambling, consumption, and tourism with all its adherent positive by-products. Casino cities hope to become international tourist destinations with the help of luxury products and services combined with gambling venues. However, despite city planners' best efforts, becoming the next Vegas is bound to be an unrealistic plan: casino cities have been instead described as dual cities; that is, cities with graphic downsides—such as increased crime rates and the economic hardship of other local businesses—while casinos may, at the same time, appear to be bringing economic benefits (Hannigan, 2007).

While previous studies have covered various questions related to quality of life and residents' attitudes towards casinos, there is a lack of research into residents' views on casino venues from a city image and city identity perspective. Several studies have mapped the perceived socio-economic impact of large gambling venues from the perspective of city residents (e.g., Kang et al., 2008; Lee & Back, 2003; Spears & Boger, 2002). According to Kang et al. (2008), residents tend to see the economic and social impacts of gambling venues as positive for their community if they experience personal benefits from them in terms of, for example, employment or entertainment. Jawad and Griffiths (2010) note that, while the residents of Swansea, UK, mentioned the economic benefits of the city's first casino, they were still strongly against the opening of a

second casino in their community, due to their overall negative attitudes towards gambling as an activity. These works illustrate how the venue opening, city identity, and views on gambling as an activity are entangled in locals' perceptions of casinos.

Florida (2012) discusses the importance of urban planning in view of the so-called creative class, which consists of well-educated creative professionals with good income. According to Florida, the creative class is at the core of the competition between cities for new businesses, investments, and tax revenues. Creative professional jobs are not as tied to a certain place as typical working class, service, or agricultural jobs. Therefore, the creative class can more freely choose their place of residence and commercial activities, and as a result, their residential choices are the ones that attract new businesses and investments to the region. Florida also points out that the creative class is not interested in the physical tourist attractions or sports stadiums that many cities focus on developing when choosing a place to live. For the creative class, the '3T's'—technology, talent, and tolerance—can be the most meaningful aspects of a city. Cities with a large proportion of the creative class often effuse an image of tolerance and diversity (Florida, 2003).

Florida's argument about the creative class generating growth in city regions inevitably leads to questions of belongingness and for whom cities are planned and marketed. Antonsich (2010) discusses the concept of place-belongingness as it relates to personal, intimate feelings of '*I belong here*' but also to the politics of belonging, which are discursive practices of socio-spatial inclusion/exclusion. Even when marketers have visions of promoting new commercial projects to attract new residents, and keep the current ones happy, eventually people choose their place of residence for various other reasons (employment opportunities, quality of life, and so on), as well as the individual's biography (Savage et al., 2005).

In sum, acknowledging elements of residents' life circumstances and notions of belongingness tends to make city branding strategies more sustainable. Nonetheless, such an acknowledgement is often a neglected dimension when city leaders and administrators introduce new commercial enterprises in the city planning. Residents' city image and city identity constructs offer valuable insight into how new gambling enterprises settle in new environments in a sociocultural sense.

Historical Context of the City of Tampere

In the 19th century and at the beginning of the 20th century, Tampere was first and foremost an industrial city with most of the country's textile, wood processing, and metal industry located in the city (Haapala, 2005). As an industrial worker's town, Tampere became the centre of many of Finland's important political events in the early 20th century. In 1905, during the general strike, the famous Red Declaration was proclaimed in its

central market square; in 1918, during the Civil War, it was a strategically important communist stronghold (Tepora & Roselius, 2014). While certain paper, textile, and forest industries continue to function in the city, its current growth has been built on mechanical engineering and automation, information and communication technologies, and health and biotechnology (Business Tampere, 2021).

The city's current technological development can partly be related to the founding of the University of Tampere (Sipilä, 2005). As the most important industrial centre in Finland since the late 19th century, a need for a technical higher institution had emerged at the beginning of the 20th century, which led to the founding of a new university in an exceptionally homogenous, non-academic environment. Over the years, the university has grown into the second largest in Finland. Today, over 37% of the Tampere residents have a university degree (City of Tampere, 2020). With a strong university emphasis on media and journalism, both public services and commercial audiovisual media companies have broadcasting studios in Tampere. The cultural life has grown with many famous events and museum locations, especially in the 2000s, which has allowed Tampere to project an image of a city for the creative class (Bottà, 2020). While the shift from a 20th century industrial town to a city with a population of versatile backgrounds has been particularly conspicuous in the case of Tampere, the 21st century gentrification processes follow a similar pattern in other larger Finnish cities (see Ehrström, 2016; Jauhiainen, 1997).

Seven Tampere-based real-estate business operators, one of which was a 100% city-owned amusement park, competed against each other to host the new casino. As the winning bid, the forthcoming casino will be opened as part of a brand-new consumption and leisure-time venture of the Tampere Deck and Arena, unofficially called the 'Experience Arena,' which is being built around the central railway station. In addition to a multipurpose arena for major sports events, concerts, and conventions, the complex also houses a hotel, several restaurants, plenty of commercial space, and around 1000 residential apartments (SRV, 2021). The casino will have a selection of over 100 electronic gambling machines, several table games, and poker tournaments. It will employ 80–100 people (Valtavaara & Harju, 2016). The Tampere casino plans were not introduced to the residents at any stage of the bidding process. Nor were the plans discussed at the city council, although the city actively promoted the casino project by putting together the casino application for the gambling monopoly on behalf of the real-estate operators.

Data and Methods

Nine focus group interviews with 19 women and 24 men living in Tampere were conducted in 2018 (two years after the decision to establish the casino, and

around three years prior to the expected opening). The interview protocol consisted of two parts: the first concerned the casino project, and the second was more generally about the regulation of gambling and gambling provision in Finland. The latter part allowed participants to reflect on the casino project from an overall gambling policy perspective.

The participants in the study were recruited via e-mail from a list of participants of a previous Finnish population survey who had given their consent to be contacted for additional interviews (see Salonen et al., 2017; Salonen et al., 2019). Three hundred thirty-one Tampere residents had expressed their interest to participate for further studies. For practical reasons we contacted only the 243 persons who had included an email address and sent them an email invitation with a link to participate in a focus group. Based on an earlier focus group study with a similar recruitment strategy in the Helsinki region (Egerer et al., 2018), we expected a rather small number of volunteers. For this reason, the groups were formed by chance: the participants could sign up for the focus groups by choosing a date that suited their schedule.

All groups were a mix of women and men over the age of 18. While we did not ask participants specifically for their age, persons of all age groups seemed to be represented. Groups had 3 to 7 participants, with an average of four participants; interviews lasted from 60–100 minutes.

Focus group interviews can potentially provide insight into how people reason around topics that are rather distant or abstract (Liamputtong, 2016). This method served our aims since the casino is not yet built and there is only one other casino in Finland. Envisioning a currently non-existing casino in their own hometown and speaking about casinos more generally as phenomena were likely to be a rather abstract and unfamiliar discussion topic for the participants.

The interview protocol included three images taken from the city's original casino application. The first picture was an illustration of the 'Experience Arena,' portrayed as a large roulette table at night. The second picture presented an electronic gambling machine with a winning line of five Tampere coats of arms. The third picture showed several poker chips with the text 'Casino Tampere All In.'

After seeing the images, participants were asked to discuss their perceptions of the casino and its implications for Tampere. We introduced some questions to direct the discussions but told the participants that they did not have to follow the protocol (see Fig. 1).

After discussing their views on the pictures, the participants were shown a promotional video that was compiled from architectural illustrations of potential locations for the casino, portraying the city almost entirely at night (City of Tampere, 2016). Along with uplifting music, the video also included stylish pictures that showed people having a good time inside a casino.

In the video, the lifestyle of the 'golden era' of Las Vegas casinos was drawn upon through images of luxury cars and yachts. The cars in the video were luxury models of Mercedes-Benzes, Audis, and BMWs. To highlight the extraordinariness of the casino, women in the video wore cocktail dresses and most of the men wore suits—one man wore an all-white suit and another a bowler hat. Both the pictures and the video clip displayed the imagery of a nighttime economy. The video also disclosed the names of the proposed locations and real-estate operators.

All interviews were recorded, transcribed, anonymized, and analyzed using qualitative content analysis. We used an inductive approach when first looking for the main themes, 'letting the material speak to us.' Our aim was to gain insight into the underlying cultural dimensions that the participants were drawing on when they spoke about the casino project. We thus began by coding the interview data loosely in broad categories (e.g., pro, against, casino, gambling) and sharpened the categorization after highlighting repeated and overlapping themes (e.g., meaning-making of gambling + Tampere connotations). The analysis was performed by the Atlas.ti software (see Drisko & Maschi, 2015).

Questions for discussion after showing the participants three pictures.

1. Have you heard about the plans to open a casino in the city?
2. What kind of thoughts do these pictures raise?
3. What positive and negative impacts could the casino bring?

Questions after showing the video.

1. What is the message in the video?
2. How would the alternative locations shown in the video suit the casino?
3. How does Tampere appear in the video?

Fig. 1. Interview Protocol

Due to the prospective nature of the study, a follow-up study will be conducted after the casino opening. This is a qualitative study, which focuses on the meaning-making logic and not on opinions. The 43 persons interviewed in this study are not representative of the population of Tampere.

Results

In the interviews, city image and city identity constructs appeared in several entangled ways: in speculations regarding the casino's role in Tampere, the branding strategy of the City of Tampere, and casino gambling as a local and global phenomenon. The relationship between the residents and the casino project was negotiated in four main dimensions: (a) residents' self-understanding, (b) the contract between

the municipality and its residents, (c) city image, and (d) evaluations of the pros and cons. Even if many possible positive effects were mentioned and the conversation tone was often humorous and light, the four meaning-making dimensions make up a whole that resists, pushes away, and more or less 'abjectifies' the casino project as a whole (see Kristeva, 1982). Below we account for the main traits in this conversation.

(a) Residents' Self-Understanding

The casino was at odds with the residents' understanding of their hometown. The casino was seen as non-compliant with Tampere as a city concept. When assessing the impacts of the casino, the participants emphasized the 'down-to-earth' image of Tampere and would stress the forthcoming casino as a foreign addition in view of the city's *true* identity. As residents of Tampere, the participants felt that they were the real experts on the essence of the city. The participants described themselves as Tampere residents in terms of ordinary people 'wearing comfy sportswear instead of showing off.' For them, 'Tampere is all about red bricks and workers' (Female, Focus group #1).

Many of the participants mentioned that they had never been to a casino, and they would emphasize the fact that their views were 'based on their own notions and apprehensions,' as opposed to knowledge or experience. Both the casino images and the city's marketing material incorporated imagery from popular culture, drawing on James Bond movies and Las Vegas aesthetics. The images of luxury and exclusiveness portrayed in the marketing material triggered thoughts about whether the participants would feel comfortable paying the casino a visit:

Oh, no! The way people were illustrated [in the video] in the possible locations, they looked kind of ... very important ... Really, when you look out the window, the streets and the people ... I don't know how many VIPs from the video you'd even find on the streets. But you've got to polish the image, I know. But I just don't see Tampere in that way. (Female, Focus group #9)

To the participants, it seemed clear that they were not the target audience of the promotional material. Yet, despite their doubts, the participants thought that locals were far more likely to be casino patrons than international tourists. The discrepancy between the exclusive marketing and ordinary people was strongly emphasized in the boundaries drawn spatially between places 'meant for locals' on the one hand, and 'meant for more high-status people' on the other. The casino project embodied a foreign city element targeting the extraordinary:

I'm not their target group ... Not in any way. When you think about the celebrities who visit

such places. I doubt I'll ever set foot in there. (Male, Focus group #5)

The positioning of themselves as critical bystanders whose views have been disregarded in the city decision-making processes was particularly distinct when talking about the oddity and foreignness of having a casino in the city:

This just shows sort of robbery mentality. Näsinneula [The Tampere landmark observation tower] doesn't fit here. (Male, Focus group #1)

Analyzing the many techniques used for refusing the casino as a phenomenon and as a city element, one can turn to Kristeva's concept of abjection: the casino appears to be something that 'disturbs [the] identity, system, and order'; it is something that does not respect the 'borders, positions, [and] rules' (Kristeva, 1982, p. 4) of the city image and identity of Tampere.

(b) The Contract Between the City of Tampere and its Residents

In addition to feeling neglected and unable to identify with the promotional material, the participants pointed out the one-sided decision to build the casino. They expressed that it was solely a top-down administrative decision, which is a truthful depiction of the matter: the residents had little or no information about the casino plans nor the attempts to alter the city's image through city branding. Although the building of the arena was a heated topic locally, the participants felt that the casino and cutbacks on other investments were topics that were overshadowed by or hidden in the discussions on the overarching arena project. As a result, the decision to have a casino in Tampere was never opened up for public discussion.

The unsatisfying communication between the city and the residents was also expressed as disappointments in the city decision makers' priorities:

Male 1: *Other things are being cut back, but still, there's money to invest in this.*

Male 2: *Yes, and the role of an ordinary person is to be the victim of cuts rather than enjoy the fruit of the city's successful business.*

(Focus group #6)

The discussions about residents being ignored in the casino plans and its adherent city branding strategy were mixed with talk about gambling-related harms. Together, these discussion traits position the participants as removed from the casino project. The project seemed more like a betrayal of the residents by the municipality:

I feel a bit sold off. I mean, has the city sold out itself? Is it even a right thing to do that they [the

gambling monopoly company] chose Tampere?
(Female, Focus group #9)

This denial of civic participation in the city planning is a disruption in the residents' feeling of belongingness to their hometown (e.g., Antonsich, 2010). While the casino is a mismatch to their understanding of Tampere's identity, here the lack of an open democratic discussion between citizens and decision-makers becomes the main object of criticism.

(c) Tampere's City Image

The possibility that the casino images in the promotional material might become a reality was seen as an undesirable path for the city, one that would risk much of its humble charm. The participants abjectified the casino as an alien artefact that would spoil Tampere's city image, in the eyes of both locals and non-locals. By recognizing the marketing objectives of taking advantage of casino images from popular culture, the participants could carry on the story of the glamorous casinos presented to them while simultaneously criticizing its lack of compatibility with the city's essence. Exclusive images that emerged from the marketing material struck the residents as the opposite of the essence of Tampere:

Female: *We're the wrong target.*

Male 1: *For me, those pictures resemble an utopistic, Las Vegas-style business hub. It just doesn't fly. It's really plastic and superficial, though wrapped in the coat of arms of Tampere. It's building up this business image, I guess.*

Female: *Exactly. Fancy life and everything. How sweet it is, it's what you see in movies. Fancy dresses and money and not a care in the world.*

Male 1: *Well, maybe. Just maybe, it [the casino] could fit here, although I'm not fully hoping for that. Tampere is a quite small town, rustic. It just feels too vain. A need to get everything that shines.*

Male 2: *Hope it never gets to that. It's far from the Tampere I know. Luxury cars and lots of bling-bling, so impersonal. The best thing about Tampere is missing. The range of all kinds of red brick buildings, all that is wiped out. Nothing positive about that.*

(Focus group #2)

The participants also opposed the image in the city's promotional material that presents Tampere as a large metropolitan city. They were much keener on keeping the city as it is, instead of handling the ambiguity created by the casino and the city images evoked in the promotional material. The residents saw Tampere as easily approachable for people who live in regional, mostly rural, areas. The 'down-to-earth' image of Tampere was understood as ordinariness and everydayness of the people living in Tampere and

nearby areas. They pointed out that the material represented 'Tampere turned into Monaco' (Male, Focus group #1), worrying that Tampere would 'lose its personality' (Female, Focus group #2).

(d) Evaluations of the Pros and Cons

All focus groups cherished the idea of the casino bringing economic synergies for the city. The kind of entertainment and leisure tourism envisioned by the participants was built around 'friends coming to town to have fun' (Female, Focus group #5) and 'men wearing pinstripe suits and smoking cigars' (Male, Focus group #6). The groups speculated that the casino could bring more jobs, boost other businesses, and, perhaps, make Tampere an attractive, alternative destination for a night out. Yet these economic benefits were weighed against the participants' knowledge of gambling problems caused by the more familiar convenience gambling. The marketing material was interpreted as *an attempt* to pursue an image of a dynamic metropolitan city, while the forthcoming (casino) gambling problems were considered as *self-evident facts* waiting ahead. Casino gambling-related problems were considered harsh for an individual problem gambler as 'some gamblers get addicted [to gambling] for a fact,' which leads (inevitably) to 'a short-term loan after another' (Focus group #8) because 'in real life, it's not like you just stop by, put a few coins into a slot machine and then leave and go home' (Male, Focus group #6). Some participants also expressed their concerns of new types of financial crime that could come along with the casino:

Male 1: *The one thing that comes to my mind ... money laundering. I mean, if the stakes are high, so's the cash flow. What about organized crime then?*

Male 2: *I guess so. If there's one thing that will never disappear, it's cash. You just carry cash in and out. I don't know how it goes but whatever you win ... the winnings are legitimate.*

(Focus group #6)

Yet, in weighing the casino's benefits and costs, the groups were able in this matter to name the ambiguity brought by the casino, without needing to reject it in its entirety.

Discussion

This study has inquired into how the residents of Tampere view the new casino. When the participants of this study discussed the new casino, they would draw on pop-cultural notions of casino gambling on one hand, and the city image of their hometown on the other. In this juxtaposition, they alienated themselves from the project in three ways (Table 1).

The first way of alienating themselves from the project was through the city image. The participants positioned their hometown as a down-to-earth and

humble city compared to the anonymous global metropolis evoked in the marketing material.

Secondly, the casino became an intruder by targeting a rich and famous clientele, while dismissing ordinary people (i.e., the residents of Tampere). Into this dichotomy also falls the breach of the democratic contract between the city and its residents, as the participants problematized the city administration’s decision to exclude locals and override ordinary people’s opinions about an issue with the potential to create harm and expense for the social and health sectors.

Finally, the participants made a distinction between the city image of their hometown, with its everyday convenience gambling, and the Las Vegas–style gambling environment as presented in the city marketing.

The abject is something that disturbs the usual order (Kristeva, 1982). Here, the abject is represented by the casino, which is experienced as disturbing the city residents’ image of the city, their feelings of belonging to Tampere, as well as their view of everyday gambling culture in Finland (Table 1).

Table 1
The Casino as Abject

	Residents’ normative image	Construct used for expressing ambiguity and abjection towards the new casino
City	Finnish, down-to-earth, and humble	<ul style="list-style-type: none"> • Nordic growth centre • Global anonymous metropolis
Residents	Workers and ordinary people	<ul style="list-style-type: none"> • VIPs, rich people, city administration
Gambling	Convenience gambling in shops and kiosks	<ul style="list-style-type: none"> • Currently available ‘time-out’ gambling positioned as something totally different • Las Vegas–style gambling environment as something foreign

While still being humorously called ‘the Manchester of Finland,’ in reality Tampere has long ceased to be an industrial worker’s town. It is now an urban centre whose growth is based on technology, research and development, and services. Likewise, the socio-economic structure of Tampere’s population has diversified; now ranging, for example, from the ‘creative class’ to students and people working in the service sector.

The place-belongingness of residents involves a cultural boundary-making that keeps unwanted influences and obstructions on the outside. Yet place-belongingness is also a matter of politics of belonging: it is either exclusion or inclusion. Starting from these terms, including the residents in the planning of such projects sounds, thus, not only desirable (Antonsich, 2010), but in the light of this study, also possible. Participating in city planning gives residents a chance to feed fewer tangible concerns (e.g., residents’ self-understanding and the city image) about the process of establishing new casinos.

An adjusted, ‘glocalized’ Tampere version of the global Las Vegas casino concept might not only trigger a more favourable welcome from the locals, but might also create a great selling point in the experience economy market that emphasizes the uniqueness of consumption (Sidali et al., 2015).

How desirable this is from the vantage point of gambling harm prevention, is, of course, another question. Because of how their city’s image evolved historically, some cities might be a better fit for casino development. Then again, some cities might not be

suitable for a casino under any circumstances. While not talking about Tampere per se, our respondents were very clear that an amusement park visited by families does not qualify as a location for a casino at all. Not only from perspective of gambling harm prevention, but also because opening a casino might spoil the image of a family-friendly destination. Therefore, family-friendly locations should refrain from activities considered intrusions on that image.

Conclusions

This study holds valuable lessons for the further development of gambling research, and we draw two main conclusions.

Among the residents interviewed for this study, the casino project was seen as an outside intrusion of an alien gambling culture into the midst (literally and figuratively) of their city. Firstly, the phenomenon of casino gambling was not seen as a typical kind of Finnish—not to mention Tampere—gambling, even though physical gambling machines are widely available and online casino gambling is popular in Finland. In gambling research, this matter would typically have been conceptualized as a question of low social accessibility to casino gambling venues (e.g., Abbott, 2007). Social accessibility is one factor, which mediates the relation between availability, gambling participation, and possible problem gambling. Yet, from the perspective of place-belongingness, the physical and social proximity (e.g., Kuurne & Gomez, 2019) of the gambling venue turns the gaze towards possible sociocultural contamination of local space. In this

framework, it becomes thus possible to grasp gambling harm in a wider dimension than only in terms of problem gambling and its toll.

Furthermore, a mismatch between the casino and city identity—not a general negative attitude towards gambling (cf. Jawad & Griffiths, 2010)—led the participants to oppose the plans for the new casino. Clearly, factors unrelated to gambling are important for residents' approval or disapproval of gambling venues in their local region. The social accessibility is thus not only a matter of (gambling) culture but can in fact be highly local. An overall conclusion of the study is therefore that gambling location establishments should be evaluated on their cultural spatial contexts from the perspectives of the local residents in whose living environment they will become a part. A small urban casino might be rather insignificant to the local economy and to the daily lives of the locals, but this study demonstrates that the significance lies elsewhere; that is, in the compatibility of the casino with the city's identity.

This has been a first attempt to grasp new physical gambling venues in a novel framing, the frame of the local residents. More research is needed on how gambling venues impact people's perception of spatial hometown safety, well-being, and comfort.

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A Genealogical Analysis of the Medical Model of Problem Gambling

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Abstract: By applying Foucault's genealogical approach, this article understands the ascension of the medical model of problem gambling as a happenstance and contingent effect of a new form of social control (biopower). The investigation reveals the cumulative effect of some of the heterogeneous components surrounding the medical model's creation: discourses; institutions; laws; regulatory decisions; administrative measures; scientific proposition, and philanthropic, moral, and philosophical arguments. In the process, it becomes apparent that the medical model is an effect of a form of control that is embedded in the population itself as a norm and follows the schemata of confessional discourse. This power is disciplining individual bodies and regulating populations towards normality by making problem gamblers critically examine themselves and discursively reveal the results. However, the present subjectivity for problem gamblers (i.e., how they understand themselves and how they are understood by those who would improve them) is an effect of the type of power contained in the confession as well. A certain form of subjectivity is created by admitting 'I am powerless over gambling.' While the language problem gamblers use to describe themselves is a mere effect of power, it nevertheless determines how they think of themselves and their relationship with gambling.

Keywords: medical model, problem gambling, genealogy, biopower, confession, gamblers anonymous

Introduction

The gambling landscape has witnessed a drastic transformation in recent decades. Just fifty years ago, gambling was largely unavailable, but now the opportunity to gamble presents itself at many convenience stores, gas stations, websites, bars, racetracks, and casinos. At the same time, the language surrounding the issue of problem gambling, pathological gambling, or addicted gambling (PG) has changed. This analysis assumes that abnormal gambling or PG is not given by nature; that is, it is not ontologically out there—it is not 'a universal feature of human existence, but a historically and culturally specific way of understanding, classifying and regulating particular problems of individual conduct' (Keane, 2002, p. 6). PG has long been considered deviant, but that deviance has been progressively categorized as a sin, a crime, and, now, as a disease. Originally, PG was described as a moral weakness that contravened the Protestant work ethic, but the discourse of gambling addiction has now been medicalized. Calling PG a disease has focused the *clinical gaze* into the body of the individual while blurring social causes, contexts, and remedies. When

gambling was a sin, the family and the church were agents of social control, but in our hyper-positivistic scientific world, PG has become a disease under the auspices of a medical model (Conrad & Schneider, 1980).

The medical model (MM) of PG that I am referring to finds the cause of deviant gambling behaviour 'within the individual, postulating a physiological, constitutional, organic ... agent or conditions that is assumed to cause the behavioural deviance' (Conrad & Schneider, 1980, p. 35). The human sciences (e.g., psychology, psychiatry, neuroscience) subscribe to this model by holding that the source of the problem is to be found inside the problem gambler's body. Neuroscience, for instance, argues that changes in the brain's learning and reward system cause irresistible urges that a gambling addict is literally powerless to resist. The problem gambler's own physiology (e.g., genetic code, neurons, dopamine) is said to attack itself and its own interests, which results in a fundamental loss of behavioural control. Thus, the physical changes in the brain are labelled as damage and are claimed to be evidence of a disease (Volkow et al., 2011).

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Researchers and clinicians employ this model today to explain and treat PG, but what is the history of the MM, how did it supplant the moral model to become the dominant paradigm, and how do these changes affect how persons classified as problem gamblers understand themselves and their relationship with gambling? My intent is to demonstrate that the emergence of the MM of PG can be understood, through a Foucauldian lens, as a happenstance and contingent effect of power, but more importantly, to show how the governance of gambling problems by this model is effected through techniques that attempt to form certain kinds of subjectivities. Being diagnosed as having a disease or admitting 'I am powerless over gambling,' has the potential to create subjects who consider themselves to be disordered, sick, and separate from more *normal* populations. They may come to believe that there is a physical problem inside their body that hijacks their better judgement and results in a loss of control of their gambling behaviour. Further, these concepts can be held by gambling addicts with what Foucault might call an air of 'scientificity.' The point of the analysis is to show that present subjectivity for those classified as problem gamblers is an effect of power, and that the techniques employed attempt to create new subjectivities.

By applying Foucault's genealogical approach, this article reveals the important cumulative effect of some of the seemingly insignificant, disconnected, and minute details surrounding the MM's creation. The model is supported by a heterogeneous collection of discourses, institutions, laws, regulatory decisions, administrative measures, scientific propositions, and philanthropic, moral, and philosophical syllogisms, and this paper illuminates several key elements that have been particularly generative. Under the assumption that the tentacles of the heterogenous elements can be traced to the medicalization of deviance writ large, my investigation begins by looking at the medicalization of alcohol abuse and how a growing list of other deviant behaviours, including PG, began to be described as a disease inside the body too. However, it is first necessary to delineate Foucault's genealogical method before applying it to the emergence of the MM of PG.

A Genealogical Approach

The key to genealogy is realizing that an epistemic framework (e.g., the MM), just like people and nations, has a history, and illuminating this history helps us to understand its social status and practical implications. The point is not to show if the MM is true or false, effective or ineffective. Instead, the objective is to diagnose how the model operates, how it emerged, isolate its political function, and pinpoint how it is related to and supported by various social practices. Most importantly, a genealogy connects these historical changes in social practices with changes in subjectivity; that is, how persons who are classified as problem gamblers understand themselves and are understood

by those who would improve them: 'What has this kind of knowledge, this type of power made of us?' (Foucault, 2003a, p. 191)

For Foucault, power does not exist in social or political institutions and flow from top to bottom (e.g., MM of PG). Power is not possessed by some and imposed on others but is embedded in the network of social relations. Any time power is exercised, there is a network of resistances, but it is not a binary opposition between oppressors and oppressed (Foucault, 1990).

The exercise of power is not violence; nor is it a consent ... it is nevertheless always a way of acting upon an acting subject ... by virtue of their acting or being capable of action. A set of actions upon other actions. (Foucault, 1982, p. 789)

Because power acts on and through individual bodies, 'power relations are both intentional and nonsubjective' (Foucault, 1990, p. 94); that is, power is imbued with calculations, aims, and objectives, but this does not mean that any individual, social organization, or political institution can be held responsible (Foucault, 1990). Power does not repress subjects, it creates them, and present subjectivity is always an effect of power (Foucault, 1980). We are social creatures, and to be a subject (person) we must act on others and be acted upon; that is, be *governed*. This is accomplished through techniques (training, regulation, surveillance, discipline) that I understand as *normative social practices* but what Foucault would call *techniques of power*. A genealogy's primary concern is how power (normative social practices) interacts with knowledge to create the understanding we have of ourselves today (subjectivity).

The task of the traditional historian is to reconstruct facts and place them into a phyletic, teleological, and coherent narrative that culminates at the pinnacle of the present, but for Foucault, they neglect human experience in their quest to get to the absolute causes. On the other hand, a genealogy is concerned with topics that are usually ignored by historians: human values, knowledge, truth, and concepts. It explicitly rejects teleologic explanations and never supposes that a currently accepted conceptual discourse is some kind of epistemic endpoint, a perfect culmination, or the necessary outcome of infallible reasoning. Genealogy is against historical foundationalism and 'opposes itself to the search for "origins"' (Foucault, 1977, p. 140). The point is not to show the evolution of human conceptual experience, but to show the tangled web of interrelations between its heterogeneous elements. Genealogy exposes the insignificant and forgotten historic details and understands a change in epistemes by examining the microphysics of power relations (Foucault, 1995). Throughout this article, I will investigate the MM's ascension and large-scale acceptance by scientists and researchers genealogically

by looking at the microphysics of power acting on individual bodies.

Foucault's genealogical studies focus on the sciences that refer to persons (e.g., psychology, psychiatry), and which have played a major role in creating *governable* subjects (N. Rose, 1999). In the *History of Madness* (2006), Foucault examined the discovery of the mentally ill subject by psychiatry and found the discursive changes revealed the operation of a new form of governance for deviants. The point is not to undermine the human sciences but to understand how, by making ourselves objects of our own knowledge, we have become the subjects (persons) who exist today. Foucault thinks 'the task of philosophy is to describe the nature of today, and of ourselves today' (2003c, pp.93–94). By drawing on Kant's reflections on the Enlightenment, he develops a philosophical ethos that calls for a critique of our present through a 'historical ontology of ourselves' (Foucault, 2010, p. 45). A genealogy is a history of how 'we understand ourselves, and how are we understood by those who would administer, manage, organize, improve, police and control us' (N. Rose, 1999, p. vii).

A Dispositif Analysis

A genealogy of the present begins with a self-reflective assessment of our current situation: it isolates a specific social practice and investigates its descent and emergence. In this article, I identify the MM of PG as a vital technique of power for governing gambling problems and consider how we ended up in this position. I am not interested in a history of the MM *per se*, but instead am picking out an important technology of power and tracing it back through time. The point is to reveal how the MM is an effect of power, and how applying this power to individual bodies creates the social subjects who exist today. I concentrate on the sciences involved in PG treatment, where the relationship between power and knowledge is highly visible, and use a method which shows that the knowledge revealed by these sciences is central to the modern governance of excessive gambling. It is a method of analyzing the practices that have made us subjects, objects, and instruments of power (Dreyfuss & Rabinow, 1983).

Foucault calls his method of analysis a *Dispositif*, or, poorly translated, an 'apparatus,' and says it has three methodological functions:

firstly, a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measure, scientific statements, philosophical, moral and philanthropic propositions ... Secondly, what I am trying to identify in this apparatus is precisely the nature of the connection that can exist between these heterogeneous elements ... Thirdly, I understand by the term 'apparatus' a ... formation which has

as its major function at a given historical moment that of responding to an *urgent need*. (1980, pp. 194–95)

The apparatus is the method of analysis created by the genealogist, but it is also the intelligibility and coherence that a practice possesses in order to organize, control, and constitute social subjects. Following Foucault, the apparatus is not only an approach (method) for analyzing power/knowledge, but it is also the result of the analysis that makes certain regimes of practice intelligible for the genealogist. In addition, an apparatus is the grid of intelligibility through which subjects come to understand the 'truth' about themselves. Foucault wants to identify exactly what form of rationality, or intelligibility, which is itself an apparatus, that allows specific social practices to function (Dreyfus & Rabinow, 1983).

In the pages that follow, I will take the MM to be an apparatus as a method of analysis. This entails an investigation of three themes: first, an exposition of the ensemble of heterogeneous elements supporting the MM (e.g., discourses, institutions, regulatory decisions, scientific statements, administrative measures, philosophical and philanthropic propositions); second, I identify the confession as the form of rationality, or grid of intelligibility, that connects the heterogeneous elements and allows them to constitute and control social subjects; third, I will conclude by determining the strategic need to which the model is responding.

Madness, Medicine, Deviance, and Disease

The first threads of the MM's apparatus can be traced to the surge of medicalizing various forms of deviance during the 18th and 19th centuries. During this period, a variety of socially unacceptable practices began to be described in medical terms. The loudest discourse to suggest that excessive actions were caused by a disease inside the body surrounded alcohol abuse. In colonial America, being habitually drunk was regarded as a choice that some people made for pleasure. Overdrinking was frequently chastised in books and from the pulpit, but there was no discussion of alcoholism being a disease or that it caused a loss of behavioural control. Dr. Benjamin Rush was the first person to suggest otherwise (Levine, 1978). He was a prominent colonial who signed the United States Declaration of Independence, was the Physician-General in the Continental Army, and held a seat in the Continental Congress. At the Philadelphia College of Physicians, Rush trained more future physicians than anyone else of the time, and his compiled writings composed the first American medical textbook (White, 1998). Rush (1812) was the first to suggest that deviant behaviour (madness), in general, was caused by a diseased mind and not by demonic possession, and he is widely considered to be the father of American psychiatry (Penn Medicine, 2017).

For Rush, disease states were firmly linked with moral problems. Morally, he thought that disease entered the world with the Fall of Adam and mankind's purpose was to overcome the evils of the world (Carlson & Simpson, 1964). But Rush also had a physicalist account: madness was caused by capillary tension in the brain and could be medically treated by bloodletting. The physician needed to gain total control over the patient through a combination of therapy and punishment—treatment that was designed for submission. So, madness was a problem in the body of the insane, it caused a failure of reason, and was a moral offence to God. Rush saw disease in any behaviour he deemed irrational (e.g., lying, crime, and drunkenness) or in behaviour that did not happen to comply with his worldview (Conrad & Schneider, 1980). When moral and social disapprobation are the diagnostic criteria, then this clears discursive space for any abnormal behaviour to be called a disease.

Rush's first target was alcohol abuse: he defined alcoholism as a disease of the will that causes a loss of control over drinking behaviour: 'The use of strong drink is at first the effect of free agency. From habit it takes place from necessity' (Rush, 1812, p. 266); 'drunkenness resembles certain hereditary, family and contagious diseases. I have once known it to descend from a father to four out of five of his children' (Rush, 1810, p. 8). Rush believed that disease states were caused by an imbalance of the body's four fluids—phlegm, blood, black bile, and yellow bile—and the proper treatment for any disease involved a rebalancing of the four fluids through bleeding, sweating, purging, and blistering the skin (White, 1998). Rush (1810) recommended treating alcohol addiction by administering a severe whipping, creating terror, inducing perspiration, vomiting, blistering the ankles, an oath before a magistrate, religious conversion, and bleeding the alcoholic. He thought bloodletting 'should always be used ... where there is reason to fear from the long duration of the disease, a material injury may be done to the brain' (1810, pp. 31–32). Rush also called for a special 'Sober House, where alcoholics could be confined and rehabilitated ... [and] would consist primarily of religious and moral instruction' (1948, pp. 354–55).

In Rush, morality and medicine were formally linked. Disease states are physical problems inside the body, but they are not morally neutral. They are abnormal and do not reflect proper or desirable human functioning. The explicit normativity of moral discourse is replaced with the implicit normativity of being designated a disease. Rush's disease of the will plays a dual role by supposedly explaining how alcoholism is both a physical and a moral problem (Valverde, 2005). Calling some behaviour a disease reflects the morals of society and is always a social and political judgement. Medicine, by its very nature, is value-laden: designations of health or disease invoke what the human organism ought to be and reflect the whole range of a community's values

(Englehardt, 1974). The stage was set for designating almost any socially sanctioned activity as a disease. For instance, in 1851, Samuel Cartwright delivered a paper to the Medical Association of Louisiana that announced a new disease: 'The cause in the most of cases, that induces the negro to run away from service, is as much a disease [*drapetomania*] of the mind as any other species of mental alienation, and much more curable, as a general rule.' Freedom was often disciplined with a MM when it was found in subjugated populations, such as women, Indigenous Peoples, and slaves.

PG had been a major theme in moral-minded discourse for centuries. In fact, the amount of social criticism directed at this vice far exceeded that which was directed towards either alcoholism or drug addiction (Bernhard, 2002). Given the level of outrage, it is not surprising that PG began to be described as a disease that chronically and progressively overwhelmed the moral character of its unfortunate victims (disease of the will). Bernhard (2002) provides the following examples:

Gambling is a disease ... when it is inoculated into the system of the child, the gambling germ grows and grows until when that child reaches the age of twenty-five, he loses his sense of right and justice and expands his sense of greed. (Stough, 1912, as cited in Bernhard, 2002, pp. 99–100)

Its poison is insidious. Once in the system, like malaria, it chills and fevers and unfits for life and shatters the constitution ... and the habit grows until a desperate mania, or a horrible insanity, robs character of purpose, piety, and purity, and brings the end of a blasted life. (Breedon, 1899, as cited in Bernhard, 2002, p. 167)

Something from the outside (germ, poison) gets inside a problem gambler's body and takes control of that body's actions and intentions. The problem gambler is originally conceived as suffering from disease of the will: 'a creature driven by a restless desire for novelty, excitement, and action and propelled by forces that are unwilling by their helpless owner' (Reith, 2007, p. 42).

Experts and Expert Systems

Calling PG a disease separates out a specific type of person and makes problem gamblers visible; it constitutes them 'as the object of possible knowledge' (Foucault, 1995, p. 251). However, knowledge is not independent from power because each creates the other and they are joined together in discourse. Knowledge is imbued with power: it is the power to speak the truth, to discriminate, to discipline, to regulate, to see (Foucault, 1990). The disease of PG creates a new object of knowledge, so experts and expert systems appeared to fill the PG power/knowledge possibility. Foucault argues that after the Enlightenment, a form of power (biopower)

emerged to organize new relationships between knowledge, power, discipline, deviance, and individual bodies. Western societies experienced exploding populations, but the police cannot be everywhere nor watch everyone, so a form of power was needed that was embedded in the population itself: 'we saw the emergence of techniques of power that were essentially centred on the ... individual body' (Foucault, 2003b, p. 241). This bio-power is composed of two techniques: the *discipline* of individual bodies and the *regularization* of populations. The element which circulates between the two techniques is the *norm* (normative social practice): 'The norm is something that can be applied to both a body one wishes to discipline and a population one wishes to regularize.' (Foucault, 2003b, p. 253)

Foucault calls the political rationality that supports biopower *raison d'état*. This reasoning claims that the state, and state power, is an end in and of itself. State power increases as individuals *and* populations are healthy, well behaved, and productive, but it also 'presupposes the constitution of a certain type of knowledge' (Foucault, 2003a, p. 195). Biopower's political rationality (the state as an end in itself) created the discursive space for the birth and flourishing of the human sciences (e.g., psychiatry) in order to administer the normalization of individuals and populations. Through supervision and discipline, experts in PG emerged as a new form of knowledge/power that could normalize problem gamblers and have followed the model first employed at the Mettray Penal Colony:

not exactly judges, or teachers, or foremen, or non-commissioned officers, or 'parents,' but something of all these things in a quite specific mode of intervention ... technicians of behaviour: engineers of conduct, orthopaedists of individuality. (Foucault, 1995, p. 294)

Medical Prospecting

The first formal attempts to medicalize PG came out of the school of psychoanalytic thought. Herman von Hatteningberg (1914) thought PG was rooted in childhood trauma, urethral-anal ambitions, and masochism. Ernst Simmel (1920) thought PG represented a regression to the anal-sadistic level and invoked themes such as masturbation, foreplay, orgasm, defecation, ejaculation, castration, and masochism. Freud (1928) evaluated Dostoevsky's gambling habit and supposed it might be a substitute for masturbation, but he struggled to explain PG and eventually concluded that it was an addiction. Importantly, Freud linked PG, alcoholism, and drug addiction together, and thought they resulted from a single addiction syndrome (Rosenthal, 1987). In 1943, Edmund Bergler published 'The Gambler: A Misunderstood Neurotic,' which explains PG in terms of chronic masochism, cravings, and uncontrollable passion.

In 1958, Bergler published *The Psychology of Gambling*, which is identified as the official genesis of the MM of PG (Castellani, 2000). It contains a new medical discourse that does not suggest that PG is a crime or a sin, but instead is an actual disease that deserves compassion and treatment. Bergler writes that the person with a gambling disorder is a

neurotic with an unconscious wish to lose ... The purpose of this book is to substantiate, with clinical proof, the theory that the gambler has an unconscious wish to lose—and therefore always loses in the long run ... This book is about the neurotic sucker-gambler, hence about psychopathology. (1958, pp. vii–viii)

Bergler says that PG is an 'addiction' (p. 55), a 'denial of the "reality principle"' (p. 19), and that an addicted gambler rarely 'seeks treatment of his own free will ... Are there "self-cures" in gambling? Absolutely not' (p. 239).

Note the discursive elements: anal-sadistic, masturbation, masochism, ejaculation, addiction, chronicity, uncontrolled passion, denial, and the necessity of treatment. For these psychoanalysts, the problem is inside the body and treatment consists of some form of talk therapy (e.g., free association) that resolves a problem gambler's internal conflict.

In *The History of Sexuality* (1990), Foucault identifies the confession as a major technique in the functioning of biopower and argues psychiatry emerged as an effect of this form of social control. The psychiatric confession, as an instrument of power, follows the schemata exemplified in 17th century Catholic confessional manuals:

confession[s] of the flesh ... meticulous rules of self-examination ... to all the insinuations of the flesh: thoughts, desires, voluptuous imaginings, delectations, combined movements of the body and soul; henceforth all this had to enter, in detail, into the process of confession and guidance. (Foucault, 1990, p. 19)

Sex was not to be discussed in an open or direct manner, but its correlations and ramifications needed to rigidly pursue: 'a shadow in a daydream, an image too slowly dispelled ... everything had to be told. A twofold evolution tended to make the flesh into the root of all evil' (Foucault, 1990, p. 19). Father Sengeri required a confession of 'all your thoughts, every word you speak, and all your actions ... do not think that in so sensitive and perilous a matter as this there is anything trivial or insignificant' (as cited in Foucault, 1990, p. 20). This confession was designed to trace the meeting point between the body and the soul (subjectivity), and to expose *the real problem* that lay beneath the surface.

This involved

the nearly infinite task of telling—telling oneself and another, as often as possible, everything that might concern the interplay of innumerable pleasures, sensations, and thoughts which, through the body and the soul, had some affinity with sex. [A] scheme for transforming sex into discourse. (Foucault, 1990, p. 20)

Psychoanalytic treatment for PG treatment follows the schemata laid down by the confession as an instrument of power and is an ‘incitement to discourse’ that forces muted subjects to speak. It is a scheme for transforming gambling problems into discourse. Biopower is not achieved by disciplining individual bodies or regulating populations via prohibition, but by demanding problem gamblers critically examine themselves and discursively reveal the results. This is a new technique for governing gambling problems that is effected by creating a certain kind of subjectivity, where ‘the problem gambler [is] a site of social abjection; an adult individual reduced to an infantile state’ (Nicoll, 2019, p. 50).

The Confession becomes a Form of Treatment

The first group offering treatment for PG was Gamblers Anonymous (GA). In 1957, two recalcitrant members of Alcoholics Anonymous (AA) decided that the Twelve Steps of AA could be extended to excessive gambling and organized the first GA group (Abt & McGurrin, 1991). GA promotes a disease concept that claims problem gamblers are helpless victims who suffer from a fundamental loss-of-control over their gambling behaviour (disease of the will). Since GA is clearly modelled, step for step, on the program of AA, it is necessary to first understand AA’s relationship with the MM, track the application of confessional discourse, and demonstrate how the program of AA is, at root, a soul-searching confession.

As an element of biopower, the roots of the confession being used to discipline alcoholics can be traced to the middle of the 19th century. The first large-scale treatment to emerge was the Washingtonian Total Abstinence Society in 1840; they were a social support group who believed alcoholism was a disease and reformed problem drinking by demanding that silent voices must speak. They held weekly meetings that resembled a protestant revival and featured ‘experience sharing’—confessions of alcoholic misdeeds followed by glorified tales of personal reformation (White, 1998). Beginning with the New York State Inebriate Asylum in 1864, a new industry began to medically treat addiction. In 1870, the American Association for the Cure of Inebriates (AACI) was formed with only six institutions, but that number grew to over one hundred centres by 1901 (White, 1998). The central doctrine of this organization’s institutions was that addiction was a *true disease* that can improve with treatment just like any

other disease (Jaffe, 1978). Having been influenced by the Washingtonian’s experience sharing, treatment was centred around the confession. The physicians hired to staff these institutions were usually recovering addicts themselves who were already skilled in a confessional style of treatment discourse (White, 1998).

Prohibition ended these kinds of confessional interventions and temporarily killed the disease view, too (White, 2000). For the Temperance movement, the root of the problem was not a disease in the body of the person, but in the dangerous product (alcohol). Created just after the end of Prohibition, AA stepped into a new epistemic and discursive space surrounding the problem of alcohol abuse. Alcohol was not going to be prohibited again, so new ways were sought to govern and control alcoholic subjects’ bodies. In AA, because alcoholism is believed to be a spiritual problem, the MM was initially rejected, though it was later embraced. They accepted the appeal to disease and claimed that the *only* treatment was group therapy and working the Twelve Steps. Dr. Silkworth gave Bill W. (AA’s cofounder) a ‘belladonna cure’ composed of opiates and hallucinogens the night of his spiritual awakening, when he wrote the doctor’s opinion in the ‘Big Book’ (Dodes & Dodes, 2014):

The action of alcohol on these chronic alcoholics is a manifestation of an allergy; that the phenomenon of craving is limited to this class and never occurs in the average temperate drinker

...

[the alcoholic is] suffering from an illness which only a spiritual experience will conquer. (Alcoholics Anonymous, 2001, pp. xxvi, 44)

This medical discourse tries to make sense of a post-prohibition world where the problem of alcoholism was no longer located in the product (alcohol) but is a problem inside the body of a restricted sub-class of people. Silkworth makes an appeal to a disease and says the cure is to admit one is powerless over alcohol. This confession resolves spiritual problems inside the body of the sufferer and is the most important step to recovery (AA, 2001).

However, that is only the first step; working the program of AA is nothing but a series of soul-searching confessions to oneself, to another, and to God. ‘It is the soul of the member that is the main object of AA ... an approach relying primarily on *self-governance*’ (Valverde, 1998, p. 120). The Twelve Steps are used to resolve one’s past *and* one’s present; without developing a daily habit of confession, the alcoholic will surely drink again. The first nine steps involve the self-identification, confession, and resolution of the alcoholic’s past wrongs, shortcomings, and character defects, while the last three steps turn the confession into a form of everyday life: ‘Nothing short of

continuous action upon these as a way of life can bring the much-desired result' (AA, 2012, p. 40)

Step four requires a rigorous moral inventory which must conclude that 'his character defects ... have been the primary cause of his drinking and his failure at life ... [A]ll alcoholics ... will need to cross-examine themselves ruthlessly to determine how their own personality defects have thus demolished their security' (AA, 2012, pp. 50–52). Step five requires admitting 'to God, to ourselves, and to another human being the exact nature of our wrongs' (p. 55). Step six and seven read: 'Were entirely ready to have God remove all these defects of character' (p. 63); 'Humbly asked Him to remove our shortcomings' (p. 70). These defects of character include Pride, Anger, Greed, Gluttony, Envy, Sloth, and Lust; there is also a large emphasis on wrongs of a sexual nature. All of these character defects need to be ruthlessly self-identified and confessed to another (e.g., a sponsor) and to a higher power (e.g., the Group, God) (Pastal, 2015).

After confessing and making amends for one's past moral shortcomings, the alcoholic must always work on those 'character flaws that made problem drinkers of us in the first place, flaws which must be dealt with to prevent a retreat into alcoholism' (AA, 2012, p. 73). Step ten requires continuing 'to take personal inventory and when we were wrong promptly admitted it' (p. 88). This is the step where daily moral inventory and confession to oneself, to another, and God becomes a habit. No alcoholic can stay sober 'until self-searching becomes a regular habit, until he is able to admit and accept what he finds' (p. 88). It is a daily battle with one's own character defects: 'As we glance down the debit side of the day's ledger, we should carefully examine our motives in each thought or act that appears to be wrong' (p. 94)

The Twelve Steps' confession parallels Foucault's scheme for turning sexuality into discourse. It seems clear that this form of recovery does not result from an organic change; the 'healthy and productive life of recovery is a particular mode of existence that comes about not from natural processes of healing or growth, but from a concerted and multifaceted project of self-production' (Keane, 2002, p. 158).

Fuelled by economic and political tinder, much of the epistemic and discursive space surrounding alcoholism was quickly filled by the early leadership of AA, national councils, the federal government, and the courts. Powerful voices coalesced around the idea that alcoholism was a medical disease and the Twelve Steps of AA were the best treatment for alcohol addiction (Bufe, 1998; Dodes & Dodes, 2014; National Council on Alcoholism and Drug Dependence, n.d.; National Institute on Alcohol Abuse and Alcoholism, 2015; Reinarmann, 2005; Roman & Blum, 1997). However, all of these voices are effects of a confessional biopower that is embedded in the population itself as the norm of the Twelve Steps. Interestingly, Dr. Robert Custer and Harry Milt (1985) note the same historical establishment

of alcoholism as a disease in their classic study *When Luck Runs Out: Help for Compulsive Gamblers and their Families*. They accurately observe that the transition of gambling addiction from sin to disease followed the same path as that of alcoholism; Custer and Milt have an entire section devoted to this topic: 'History Repeats Itself' (Custer & Milt, 1985). It is to that history that we will now turn.

Gamblers Anonymous

In terms of treatment methods available for PG, GA entered an almost empty power/knowledge landscape. The program of AA, where addiction is a disease and its treatment demands discursive revelations, found a new pool of *deviants* who needed to be disciplined towards the norm: 'We, at Gamblers Anonymous, believe our gambling problem is an emotional illness, progressive in nature, which no amount of human willpower can stop or control. We have facts to support this belief' (Gamblers Anonymous, 1989, p. 38). Gambling addiction is a primary, progressive, chronic disease and, therefore, a lifelong commitment to total abstinence is the only solution:

members admit their powerlessness over gambling and learn to accept the truth about compulsive gambling—that it is a progressive illness which only can be arrested through total abstinence from gambling ... Through this admission members gain the inner strength to deal with their problems. (Gamblers Anonymous, 1984, pp. 68–69)

Only by admitting one cannot control oneself can one learn to control oneself. As an effect of power, this treatment is a part of biopower's incitement to discourse. GA's treatment requires a soul-searching confession by problem gamblers; they must critically examine themselves and discursively reveal the results. Post-legalization, power is not normalizing problem gambling through prohibition but disciplining individuals and regularizing populations by making them talk about their gambling problems. A chronic, progressive, incurable disease whose treatment involves a confession to a group of fellow addicts.

The confession, as a technique of biopower, found new ways to discipline and regulate more and more problem gamblers towards normality. Members of GA soon began to lobby for widespread acceptance of their medical treatment model. A chance encounter between Dr. Robert Custer (Medical Director of the AA-based alcoholism unit, Brecksville VA hospital) and representatives of AA turned out to be pivotal; he continued the practice of applying the Twelve Step's confession to gambling problems and was responsible for PG's inclusion in the DSM-III. In April 1971, representatives from GA called Custer, looking for help with some of their members who were really struggling.

They wanted to know ... whether we could start an institutional program there at the hospital for the treatment of compulsive gamblers, similar to the one we had for alcoholics ... So I arranged to go to several Gamblers Anonymous and Gam-Anon meetings ... what struck me after just a meeting or two was not just the similarity in the programs but the similarity between the people ... This, frankly, came as a great surprise, because I could not see how there could possibly be any relationship between an addiction to a drug and a behavioural problem like compulsive gambling ... a picture began to emerge that was remarkably similar to the picture of the progressive development of alcoholism ... If the basic AA program could work for gamblers, why would not the treatment program we used at the hospital for alcoholics also work to treat compulsive gamblers? (Custer & Milt, 1985, p. 216–218)

In 1972, Dr. Robert Custer opened the first rehab for gambling addicts at the Brecksville VA hospital. It followed the treatment plan of his alcoholism centre exactly and stressed soul-searching confessions:

As these patients began to tell us in detail about what they had done ... we realized that they all had in common several negative traits of personality and behaviour. These people were dishonest. They lied, cheated, deceived in order to get money to gamble. They were abysmally insensitive to other people's needs and feelings ... we realized that the negative, intolerant, resistive, stubborn, manipulative behaviour was an integral part of the problem ... We had to deal with the personality and behaviour problems. (p. 219–221)

Other than GA, in staff consultations at Brecksville, they decided to

concentrate most of our efforts on group therapy. Group therapy permitted open confrontations—not necessarily by the therapist conducting the session but by the patients themselves ... the open confrontation of group members by each other, their being tough with each other and themselves, not permitting anyone to dodge the issues or avoid responsibility. ... Each person is compelled to sit there and face the group's reaction ... This forces the individual ... to come face to face with his faults and maladaptive behaviour, and to correct them ... Because few people—least of all compulsive gamblers—can stand disapproval and rejection by the group. In order to win acceptance and social approval, they are going

to try to correct their ways. Changes can take place very quickly in group therapy. (p. 222)

The group helps to resolve the real problem: the addict's underlying personality and behavioural defects.

I want to caution that the cessation of gambling does not, in itself, necessarily mean the gambler is recovering ... Unless the other behavioural, emotional, attitudinal and practical evidences of fundamental changes in his personality and character are there, the cessation of gambling will be only temporary. (p. 229)

Treatment involves the production of a new 'addict in recovery' form of subjectivity. This new subject (person) holds the promise of everything the 'addict' identity could *never* be (Keane, 2002). The ability to diagnose is universalized. Every problem gambler becomes an 'expert in recovery' based on their self-diagnosis of their subjective experiences (Valverde, 2005). This form of governance is embedded in the norm of self-examination and confessing to oneself. Here, we find the incongruence between GA's confession and Foucault's: Instead of a sinner confessing to a priest in a church, in Custer's hospital treatment the self becomes *the* expert (priest) in this sophisticated, self-reinforcing form of self-governance.

Custer did not go out looking for this disease, nor did he have any prior interest in PG. It seems that biopower, masked as the confession embedded in the program of GA, acted on and through a body already skilled in AA-style confessional discourse. Members of GA, who already thought PG and its treatment fit within *their* model, brought this issue to his attention. He then used his experiences with AA to link PG and alcoholism together as similar addictive disease syndromes. He also claims that defects of character were the real problem that needed to be fixed. Stopping gambling is not enough—if the defects of personality are not resolved, the addict will gamble again. He claims that the best treatment for PG is to have gambling addicts confront each other in order to produce revealing confessions. Custer believes this therapy uses the power of the group as a form of social control to change the beliefs and values of the individual. By locating his treatment centre in a VA hospital, he made it medical by location, and the force of his argument comes from his own medical authority. Custer defined PG as a disease that

is a psychological illness with psychological causes ... pathological gambling has now been recognized as an illness by the professionals authorized to make this sort of judgement [e.g. Dr. Custer]. (Custer & Milt, 1985, p. 36)

As the 1970s progressed, Custer and GA's medical treatment for PG became the gold standard. By 1991,

there were at least 35 treatment centres running in hospitals, all of which employed some version of GA/Custer's treatment plan (Abt & McGurkin, 1991). Custer and Milt's 1985 book, *When Luck Runs Out*, is considered by professionals to be *the Bible* of gambling addiction research and treatment (Castellani, 2000). PG's journey from sin to sickness is, as noted by Custer, quite similar to alcoholism's. In both cases, the confession (masquerading as the program of AA or GA) found novel ways to discipline and regulate increasing numbers of alcoholics and problem gamblers towards normality.

The next vehicle for biopower was the National Council on Problem Gambling (NCPG), which was created to lobby for the GA/Custer model of PG on the national stage. In 1972, the NCPG was formed when members of GA approached Monsignor Dunne to lead the council and Dr. Custer to serve as medical director (Castellani, 2000). The purpose of the council was to lobby for the disease concept, educate the public, and sponsor research that advances the disease concept (Hyde, 1978): 'Council members petition legal and judicial bodies to acknowledge the compulsive and/or pathological nature of excessive gambling' (Rosecrance, 1985, p.278). The NCPG facilitated the relationship between medical research, treatment centres, and popular opinion: 'By organizing research and publishing it ... the council has clearly charted the medical model's future' (Castellani, 2000, p. 106). Dr. Custer said this about the council:

the medical and psychiatric professions have quickly recognized pathological or compulsive gambling as a disease ... Members of the press ... need a source of scientifically based information so they can interpret this subject for the public and become a *vehicle* for education. [emphasis added] (Custer & Milt, 1985, pp. 48–49)

In 1977, Henry Lesieur published *The Chase: Career of the Compulsive Gambler*, which was based on his personal experiences with GA. He describes the progressive, never-ending cycle of PG:

As involvement increases, the options available are steadily used up and a spiral is created ... A gambler gets more and more involved as he gets deeper and deeper into debt and the stakes he wagers climb ... He becomes more deeply committed to gambling as the only way out. (Lesieur, 1984, p. xvii–xviii)

Along with Dr. Custer, Lesieur has been the loudest voice in of the medicalization of PG. He was responsible for major revisions to the DSM-III-R and DSM-IV and created the first diagnostic tool for gambling (South Oaks Gambling Screen). He was heavily involved with GA and two different national councils, and at the time

was considered the leading figure in gambling research (Castellani, 1997).

The Medical Model's Institutional Acceptance

The MM of gambling addiction was institutionally codified in 1980 by its inclusion in the DSM-III as a 'disorder of impulse control,' where the diagnostic criterion is that the 'individual is chronically and progressively unable to resist impulses to gamble' (American Psychiatric Association, 1980, 312.31). The language of compulsion, progression, and chronicity have the same schemata (disease of the will) that representatives of GA brought to Robert Custer in 1971, but it relies on 'a hybrid combination of ethical and medical judgment, which is at odds with its definition of mental disorder' (Keane, 2012, p.353). Lesieur and Custer name Custer as 'primarily responsible for the American Psychiatric Association's acceptance of the definition of "pathological gambling"' (Lesieur & Custer, 1984, p. 146), and 'the criteria [in DSM-III] were based on research conducted by Custer and Custer (1978) as well as on experiences of the treatment team at the Cleveland V.A. Medical Centre, Brecksville Unit' (Lesieur, 1988, p. 38). The DSM continued the trend where the governance of gambling problems is effected by attempting to designate a disordered subjectivity. With PG, 'the task became the identification and treatment of the addict as *type of individual* who is separate from more normal populations (Nicoll, 2019, p. 46).

Conclusion: Who are we now?

This article used Foucault's genealogical method to approach the MM of PG as an apparatus. The apparatus has the strategic function of responding to an urgent need: The legalization of gambling simultaneously created a vast new pool of potential problem gamblers, and increased gambling has led to increases in social harms. Once gambling was legalized, a form of control was needed that was embedded in the population itself in the form of a norm. The MM emerged strategically as an effect of biopower to discipline and regulate an ever-growing PG population. The MM's apparatus is composed of heterogenous elements of discourses, institutions, scientific statements, philosophical, moral, and philanthropic propositions. I uncovered a small slice of the apparatus's elements: Benjamin Rush, Samuel Cartwright, the Washingtonians, the AACI, Prohibition, AA, Dr. Silkworth, Bill W., Sigmund Freud, Ernst Simmel, Edmund Bergler, GA, Robert Custer, Henry Lesieur, the NCPG, and the DSM. The apparatus is also the nature of the connection that exists between these heterogeneous elements. The intelligibility, or rationality, joining all of these voices for the genealogist and the gambling subject is that they are effects of a form of power embedded in the population, and they follow the schemata of biopower embodied in confessional discourse.

Just as the MM is an effect of biopower, present subjectivity for problem gamblers (how they

understand themselves and how they are understood by those who would improve them) is also an effect of the type of power contained in the confession. The language problem gamblers use to describe themselves affects how they think of themselves and their relationship with gambling. A certain form of subjectivity is created by applying confessional discourse to a problem gambler's body. When an addict admits they are 'powerless over gambling,' it changes who they are, and for Foucault, creates a certain kind of soul (person). This soul

is produced permanently around, on, within the body by the functioning of a power that is exercised on those punished—and, in a more general way, on those one supervises, trains and corrects ... The man described for us, whom we are invited to free, is already in himself the effect of a subjection much more profound than himself. A 'soul' inhabits him and brings him to existence ... The soul is the effect and instrument of a political anatomy; the soul is the prison of the body. (Foucault, 1995, p. 29–30)

Certainly, the MM continues to evolve, and recent decades have seen the emergence and acceptance of biopsychosocial and responsible gambling models (Blaszczynski et al., 2004; Griffiths, 2005), but I suspect that examining these newer models genealogically would reveal the same advance of biopower's confessional discourse in play; that is, the same discursive strands could be traced. At root, every model for PG, whether moral or medical, seeks to explain something that is unexplainable: why would any agent continually choose to engage in a behaviour that is so consistently self-destructive? The MM of PG is an effect of power and it reflects our continued ambivalence towards this question. Is it sin or disease which best explains this kind of abnormal gambling behaviour? Is the best treatment morally or medically based? If PG is a disease, then how can spiritual experiences and resolving defects of character be the cure; and if the cure is overcoming moral weakness, then how can it be a disease? But this is the historical core of the MM of PG: a 21st century disease whose causes and treatments are firmly rooted in the 19th century moral objections to gambling deviance that it replaced. Through diagnostic and disciplinary techniques of confession, problem gambling persists as a medical disease with moral causes and a moral cure.

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Book Review

Cassidy, Rebecca. (2020). *Vicious Games: Capitalism and Gambling*. Pluto Press. 240 pp. \$34.95CAD. ISBN-13: 978-0-7453-4039-5 (paperback)

Rebecca Cassidy is Professor of Anthropology at Goldsmiths, University of London. She is known for her major contributions to the field of the critical gambling studies through her contributions to: *Fair Game: Producing Gambling Research* (Cassidy, R., Loussouarn, C., & Pisac, A., 2013, Goldsmiths, University of London), a research report about the politics and complexity surrounding gambling research; and *Qualitative Research in Gambling: Exploring the Production and Consumption of Risk* (Cassidy, R., Pisac, A., & Loussouarn, C., 2015, Routledge), a book that highlights the need to revisit gambling research using new research methods and paradigms. Cassidy's latest book, *Vicious Games: Capitalism and Gambling*, is grounded in many years of impressive and rigorous fieldwork with 'people who produce, shape and consume gambling' in a variety of spaces, contexts, and jurisdictions. The book explores the expansion of commercial gambling and argues that 'commercial gambling and late capitalism are not merely compatible, they are mutually beneficial and rely on the same narratives' (p. 175). Rooted in a critical perspective, this book furthers the discussion about responsibility in the gambling field, showing how academics, policy makers, operators, and regulators contribute to the constructed discourse around 'responsible gambling.' Cassidy also addresses a fundamental issue in the field: the need to rethink the concept of responsibility, moving from an individual perspective to a collective one that integrates stakeholders and broader society.

I have no choice but to start this review by underlying the challenge of doing justice to the richness of this book, especially as an early career researcher in the gambling field. Indeed, it is a great privilege to write a review about the inspiring work of a remarkable researcher in the field.

The first chapter, 'Gambling's New Deal,' discusses the legalisation and liberalisation of commercial gambling in the UK and explores how a once criminal and tolerated activity became a massive and lucrative enterprise integrated in a broader political and economic landscape. Based on field notes and interviews with bookmakers, policy makers, politicians, and gambling executives, the chapter documents 'how

the industry and successive governments attempted to reframe gambling, from a tolerated working-class habit to a rational expression of individual economic choice' (p. 22).

In the second chapter, Cassidy invites readers to become immersed in the world of raffles as an opportunity 'to think about the meanings of risky, profitable exchange and how these change over time' (p. 42). Her anthropological fieldwork with groups of people who buy raffle tickets illustrates how raffles are culturally rooted in some communities, particularly in the UK. Analyses reveal that, for most of the respondents, raffles are more about sharing resources within the community, creating and nurturing relationships, binding people together, and altruism than about gambling or winning something. Thus, the chapter brings to light a fundamental question: What is gambling? Indeed, although some respondents consider raffles to be gambling, most of them do not. Cassidy illustrates how raffles are proof that 'there is nothing intrinsically anti-social about gambling' (p. 56). According to her, the problem arises when 'gambling acts to solidify and nurture particular distributions of resources, including those that are highly unequal. In these cases, the role of gambling is not to redistribute scarce resources ... but to exacerbate and reinforce inequality, contrary to its nature, and despite its liberating potential' (p. 56).

Chapters three to six offer a deep dive into the world of betting shops in the UK. Together, these chapters present an insightful illustration of the main argument of the book: that commercial gambling and capitalism have evolved together, in an intertwined way, and became mutually beneficial. Cassidy demonstrates how economic and political changes (such as the legalisation of betting shops in 1961, the Deregulation of Betting and Gaming Order in 1996, and changes in taxation in 2001) and environmental changes (for instance the advent of electronic points of sale, virtual races and fixed-odds betting terminals in betting shops, and the online gambling revolution) have profoundly transformed the culture and atmosphere of betting shops, as well as the nature of the activities and relations that take place in them. Where once they were

a social space for people to share common interests and nurture relationships, betting shops have become part of an industry focused on profit.

Chapter four, 'The Rise of the Machines,' is a particularly striking example of the magnitude of the transformation of betting shops and bookmaking. In this chapter, Cassidy 'go[es] behind the scene' and shows how the advent of fixed-odds betting terminals (FOBTs) in betting shops is part of a larger enterprise which 'occup[ies] specific niches in wider gambling ecologies, for historical, social and political reasons' (p. 73). From the perspective of people working in the bookmaking industry, this chapter underlines two main discourses about the advent of FOBTs in betting shops. First, a more common discourse, compatible with the responsible gambling narrative, in which FOBTs are seen as a 'gift of god' for their capacity to generate profit. Within this narrative, people who use these machines are framed as 'life's losers,' 'greedy,' or 'incapable of thinking.' On the other hand, the author has met people who are really worried and uncomfortable with this way of doing business, expressing serious moral concerns about the rise of problem gambling since the advent of FOBTs. The friction between these two narratives raises serious ethical concerns about responsibility that the gambling field must resolve: the absolution of the gambling industry of any responsibility regarding the harms associated with FOBTs. Furthermore, this chapter illustrates how, within this rationale, the responsibility of other actors and institutions involved in the 'gambling ecologies'—for instance regulators, governments (who make profits from gambling), and academics—remain silent. Finally, the chapter underlines important concerns about the relationship between stakeholders and gambling corporations.

Chapter five, 'The Responsible Gambling Myth,' discusses the over-emphasis that the responsible gambling approach puts on individual responsibility, its use as a self-regulation strategy by operators, and the threat that it could represent to corporate profits, which are largely generated by individuals labeled as 'problem gamblers.' What makes this chapter particularly interesting is the description of everyday life in betting shops derived from Cassidy's own experiences behind the counter. In this chapter, she shows how the atmosphere in betting shops has drastically changed since the introduction of FOBTs, as expressed by one manager: 'we have gone from people who are helping someone have a bet on a horse they fancy to prison guards, stuck behind a reinforced counter, being abused by people who know we are exploiting them, robbing them blind' (p. 105). Chapter five highlights the paradox in which betting-shop workers find themselves: on one hand, they are expected to promote the use of gambling machines; and, on the other hand, they are asked to adopt a responsible gambling narrative, placing responsibility on individuals for their losses and problems. Placing workers in this impossible

position exemplifies the inappropriateness of the responsible gambling approach in this particular context.

Chapter six, 'The Bookmakers' Lament,' is based on observations and interviews from 'the trading floor of a UK bookmaker.' It discusses the online revolution of gambling in general, and online betting in particular, where 'an embodied practice based on specialised knowledge and exclusive relationships was being replaced by abstract systems which used algorithms and data to create profitable uncertainty' (p. 111), and in which the bookmaker no longer exists. With the story of this transformation through the words and lived experience of people from the old guard of bookmaking in betting shops, Cassidy exposes a very interesting analysis of the 'last stand of bookmaking,' both in terms of culture and as a business model.

Chapter seven, 'Online in Gibraltar,' is a fascinating glimpse into the world of offshore online gambling operators in Gibraltar. It describes how the 'new gambling industries understand products and customers' (p. 127) and how the responsible gambling narrative is integrated in this new way of doing business. The chapter begins with a presentation of the birth and history of online gambling in the UK: 'the only open market for online gambling in the world' (p. 127). After this introduction, Cassidy brings us with her to Gibraltar, behind the scenes of this particular industry. She explores the way of life of those working in the online gambling industry in Gibraltar, an environment Cassidy describes as a 'work hard, play hard atmosphere' (p. 135). If some workers seem very happy with this culture, others seem more uncomfortable, comparing the industry to 'the seventh circle of hell' (p. 135). The chapter also specifically addresses the 'bet in-play' games, a new form of online gambling game that is proving to be extremely lucrative. Cassidy exposes the very aggressive marketing strategies and mechanics behind this new business, including the use of personal data for targeted marketing. In 'Online in Gibraltar,' Cassidy also raises important concerns about the advent of mobile online gambling games: 'Technology has domesticated gambling, moving it from casinos and betting shops into homes and, most recently pockets' (p. 151). Finally, the chapter delves into a customer service department at Lucky Day, an online gambling operator in Gibraltar. It exposes how people working in that kind of department interact with and create bonds, to some extent, with gamblers. The chapter concludes by exploring how some employees of the online gambling industry consider themselves to be part of the entertainment industry, rather than a business that exploits vulnerable persons for profit. Again, the common narrative shared by people in the gambling industry is about individual responsible gambling, which absolves the industry of any responsibility for gambling harms.

Chapter eight, 'The Regulation Game,' addresses the creation of regulation in the gambling field through

fieldwork undertaken at conferences. More specifically, in this chapter, Cassidy discusses the construction and dissemination of discourses on gambling and how those discourses, and the actors involved (policy makers, gambling industries, academia), contribute to, shape, and transform regulation. This chapter examines the links between politics, gambling industries, regulators, and academics in the creation of regulation politics and their associated issues: 'The co-production of regulation means that different interests are variously promoted and suppressed' (p. 166). This is probably the *game*... Moreover, Cassidy underlines the high risk of conflicts of interest in these circumstances. 'Gambling regulation is a political journey' (p. 171), she writes, 'the way in which it is formally managed and legitimated can help us to understand how those in power think about luck, reward, thrift, class and progress' (p. 173).

This book is a must-read for people interested in critical gambling studies or in an anthropological, sociological, cultural, political, or historical approach to the field. Certainly, it would be of great interest for those interested in the culture of betting shops. One of this book's major contributions is its highlighting of ethics and responsibility in the gambling field. It 'focused on the production of gambling, the ways in which policy makers and corporations work together to align policies, regulation, products and desires in profitable combinations' (p. 174). Moreover, the analysis presented in this book demonstrates how the responsible gambling narrative is the perfect instrument of a capitalist system in which gambling is used to generate profits in an intertwined way. The analysis also reveals the necessity to undergo a major shift in the field by rethinking responsibility in a collective way and by taking into account the role of academia, which is too often overlooked. In conclusion, Cassidy hopes 'to have contributed to an international movement which shifts responsibility for the harm caused by gambling from individuals to the whole of society, including the gambling companies and governments which create the environments and narratives which enable them to flourish' (p. 187). I argue that this book is an extraordinary contribution to that end. As an early career researcher in the gambling field, I would like to thank Professor Cassidy for this great and inspiring work!

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Book Review

Cassidy, Rebecca. (2020). *Vicious Games: Capitalism and Gambling*. Pluto Press. 240 pp. \$34.95CAD. ISBN-13: 978-0-7453-4039-5 (paperback)

Cassidy's book is a noteworthy addition to the gambling studies literature for several reasons:

- 1) It is one of few in-depth anthropological investigations of gambling scenes.
- 2) Her exhaustive qualitative data gathering (years of field work in UK gambling establishments, conducting wide-ranging interviews with gambling industry personnel, government policy makers and regulators, gambling researchers, and problem and non-problem gamblers) has produced a panoramic review of gambling expansion in the UK and Europe since 1980.
- 3) She shows how governments and the gambling industry have positioned commercial gambling as a legitimate, hugely profitable leisure pastime despite its past criminal associations, questionable public value, and there being no public clamour to expand gambling offerings.

Gambling formats discussed range from the relatively benign (raffles and lotteries) to the more pernicious (electronic gambling machines, in-play betting on sports events, and wagering via smart phones). The desire of governments and gambling purveyors to maximize profits has generated faster paced games, higher bet limits, longer hours of operation, and shifted the moral arc of the industry toward exploitation, duplicity, corruption, and greed. For example, light touch governmental gambling regulation; public denial of EGMs' addictive potency, despite uncontested research showing them to be the most hazardous legal gambling activity; bookmakers encouraging consistent losers to gamble more and at higher limits, while cutting off successful punters; and gambling deregulation being described in ethically grey terms such as 'modernization.'

Two gambling scenes described in fascinating detail are the inner workings of UK bookmaking shops and Gibraltar's online betting operations. For instance, we learn how bookmakers establish odds, manage risk, and constantly pursue new ways to line their pockets. Gibraltar's rise to gambling notoriety was the result of its low-tax regime; light touch European gambling regulation; the UK's 2005 *Gambling Act*, which permitted citizens to engage in remote gambling; and

the availability of satellite sports event television broadcasts. Interestingly, interviews with workers in these venues revealed a degree of cynicism toward their consumers. For example, questioning whether there is really a difference between a good, loyal customer and a problem gambler; or speaking derisively about players because there is no optimal playing strategy. Cassidy cites an interviewee describing virtual racing players as 'idiots by definition who'd rather bet on anything rather than nothing.'

Gambling, if done prudently, can be an innocuous leisure pursuit; the problem with the activity lies with its organization and regulation. American legal gambling scholar Jerome Skolnick offered these observations about gambling regulation that should be addressed if the activity is to be operated in the public interest:

- If the purpose of legalizing gambling is to raise revenue, a state will face the dilemma of regulating an industry while at the same time encouraging it to prosper. This idea is at the heart of the current money laundering scandal in British Columbia's lower mainland casinos. Millions of proceeds of crime dollars have been cleansed because of lax regulatory surveillance.
- The inherent contradiction of decriminalizing gambling; that is, the desire to generate funds originally developed by criminals while at the same time dissociating the state from their disrepute.
- The larger the economic interest of the state in gambling, the greater the outside pressure to erode the mechanisms of control.

(Skolnick, J. H. (1978). *House of Cards: Legalization and Control of Casino Gambling*. Little, Brown & Co.)

These verities seemingly are ignored or soft-peddled by the neo-liberal gambling regulatory regimes outlined in *Vicious Games*.

Responsible gambling is another issue discussed in the book. The general theme being that gambling purveyors give lip service to the idea of responsible gambling but resist tough regulations for fear of reducing revenues. There is also the fact that some conservative gambling researchers have developed responsible gambling standards (e.g., the Reno Model)

that are soft and thus industry friendly. This information is deployed by industry to justify the present modest responsible gambling efforts.

More implications stemming from Cassidy's comprehensive field work would be thought-provoking; for example, how to deter gambling-related crime—Macau has been described as a cesspool of financial crime, and money laundering is rampant in North American gambling venues. Also, her views on how best to deal with problem gambling would be of interest—should there be on-site interventions with problem gamblers? Should they be banned? Should there be legislated duty of care to protect against industry predation as exists with alcohol consumption?

Cassidy's book is insightful, carefully considered and thoroughly researched. I enthusiastically recommend it.

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