NEIGHBOURHOOD CONTEXTS AND OPPORTUNITIES FOR YOUTH GAMBLING IN MONTREAL, QUEBEC

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ABSTRACT

Gambling has become an increasingly accessible and acceptable form of entertainment in North America and worldwide in recent decades. Legalized gambling activities in Canada generate annual governmental revenues that totalled 12.9$ billion dollars in 2005 and estimates indicate that over 70 percent of the adult population and nearly as many young people participate in some form of gambling in a given year. Beyond a source of entertainment and governmental revenue, gambling is an emerging public health issue at the centre of numerous social and health costs including suicide, depression, criminal and delinquent behaviour, domestic violence, family dysfunction, financial troubles, and increased risk of developing multiple addictions.

Video lottery terminals (VLTs) are among the most popular and controversial gambling activities in Quebec and Canada. The increased availability and popularity of gambling activities like VLTs is cause for concern given high rates of gambling among vulnerable youth populations and what is known about the links between excessive gambling and serious social and health consequences. Gambling research has traditionally focused on identifying individual factors that influence gambling behaviours, like personal decision-making, impulsivity and self-control.

This dissertation employs conceptual themes from health geography and population health to frame gambling as a behaviour best understood through a consideration of both individual characteristics and characteristics of surrounding social and physical environments. A mixed methods approach was adopted to explore individual and environmental factors of neighbourhoods that influence youth VLT gambling. Four research objectives were addressed: 1) to describe the socio-spatial distribution of gambling opportunities surrounding high schools in Montreal; 2) to model VLT use by youth in Montreal as a function of individual and social contextual characteristics (including VLT accessibility); 3) to develop an in-depth understanding of why youth gamble; and 4) to develop an understanding of the social norms that are supportive of youth gambling.

Assessment of the distribution of VLT gambling opportunities (n=400) high school locations (n=305) and neighbourhood socio-economic conditions within the Montreal Census Metropolitan Area revealed VLT opportunities were more abundant in economically disadvantaged and inner-city school neighbourhoods. A student survey (n=2672) in Montreal and geographic data of VLT locations and socio-economic conditions of school neighbourhoods demonstrated that the majority (60%) of youth reported gambling in the past year and nearly one tenth reported gambling weekly. Twelve percent of students reported playing VLTs and one in three students reported VLT use by friends. Students most often reported gambling for fun, money, entertainment and excitement. Logistic regression models of VLT use showed male sex, engaging in other risky behaviours (particularly marijuana use),

attendance at schools where gambling is prevalent, having friends who use VLTs, and travelling to non-home destinations after school to be predictors of reporting VLT use among the student sample.

Youth in focus group discussions (n=36) articulated that they gamble for excitement and entertainment, since "everyone else does", and because gambling fills a void when there are no other opportunities for recreation and leisure. Males were more familiar with gambling than females and mentioned poker, betting on sporting events, and dice as popular activities. Females preferred instant win (scratch) and lottery tickets. Youth recognized that excessive gambling posed a risk of adverse health and social consequences but generally considered moderate gambling to be harmless. Opportunities to reduce youth gambling and negative impacts of gambling identified by youth included education and awareness campaigns, greater individual control and setting personal limits, and increased opportunities for alternate leisure activities.

School officials discussed the pervasiveness of gambling opportunities in local school neighbourhoods and the social acceptance of gambling as entertainment in their schools. Officials and youth described gambling as part of male culture and an activity tightly linked to amateur and professional sporting events. The perceived social and health risks from gambling varied according to the type of gambling activity (for example VLTs were viewed as more harmful than sports betting), and the magnitude of gambling participation (casual and mainly social gambling versus habitual or reckless gambling).

This study contributes to health geography and population health literature on the social determinants of health by demonstrating the importance of considering the social context of a health-related behaviour like gambling. The research demonstrates the value of combining approaches to develop an understanding of how decisions about health-related behaviours are made in the context of the broader 'upstream determinants'. For practice, the thesis identifies the environment as a key point of intervention for the reduction of gambling-related health risk.

RÉSUMÉ

Au cours des dernières décennies, les jeux de hasard sont devenus une forme de divertissement de plus en plus accessible et acceptable en Amérique du Nord et dans le monde. La légalisation du jeu au Canada a généré quelque 12,9 milliards de dollars de recettes pour le trésor public en 2005. On estime que plus de 70 p. cent de la population adulte et presque autant de jeunes s'adonnent à une forme ou une autre de jeux de hasard dans une année donnée. Outre le fait qu'il est source de divertissement et de revenu gouvernemental, le jeu est un problème émergeant au chapitre de la santé publique. Il est au cœur de nombreux problèmes sociaux et de santé, notamment le suicide, la dépression, les comportements criminels et délinquants, la violence familiale, la dysfonction familiale, les problèmes financiers et le risque accru de développer des dépendances multiples.

Les appareils de loterie vidéo (ALV) font partie des jeux de hasard les plus populaires et portant le plus à controverse au Québec et au Canada. L'accessibilité et la popularité croissantes d'activités comme la loterie vidéo ont tout lieu de nous inquiéter considérant leur prolifération auprès des populations de jeunes vulnérables et les liens entre le jeu excessif et les problèmes de santé et sociaux graves. Traditionnellement, la recherche sur le jeu a été axée plus spécifiquement sur l'identification de facteurs individuels ayant une incidence sur les comportements de jeu, comme la prise de décision personnelle, l'impulsivité et la maîtrise de soi.

Ce mémoire s'appuie sur des thèmes conceptuels tirés des domaines de la géographie de la santé et de la santé des populations pour conceptualiser le jeu en tant que comportement plus facilement compris lorsque sont prises en compte les caractéristiques individuelles, mais également les caractéristiques des environnements sociaux et physiques avoisinants. Une double approche méthodologique a été utilisée pour explorer les facteurs individuels et environnementaux des voisinages qui incitent les jeunes à jouer à la loterie vidéo. La thèse s'articule autour de quatre objectifs de recherche : 1) décrire la distribution sociospatiale des occasions de jeux de hasard présentes dans le voisinage des écoles secondaires à Montréal, 2) modéliser le jeu de loterie vidéo chez les jeunes à Montréal en tant que fonction des caractéristiques individuelles et sociales tout à la fois (y compris l'accès aux ALV), 3) approfondir notre compréhension des raisons qui poussent les jeunes à s'adonner aux jeux de hasard et 4) comprendre les normes sociales qui favorisent le jeu chez les jeunes.

L'analyse de la distribution des occasions de jouer aux ALV (n=400), des endroits où sont situées les écoles secondaires (n=305) et des conditions socioéconomiques des quartiers compris dans la région métropolitaine de recensement de Montréal a révélé que les occasions de jouer aux ALV étaient plus nombreuses dans le voisinage d'écoles situées dans les quartiers centraux et économiquement défavorisés de la ville. Un sondage auprès des

élèves (n=2672) de Montréal et des données géographiques sur l'emplacement des ALV et sur les conditions socioéconomiques du voisinage des écoles ont démontré que la majorité (60 %) des jeunes s'étaient adonnés à des jeux de hasard dans l'année et que près d'un dixième s'y adonnait toutes les semaines. Douze pour cent des élèves ont dit jouer à la loterie vidéo et un sur trois a dit que ses amis jouaient aussi. Les jeunes jouent le plus souvent pour le plaisir, pour l'argent, pour le divertissement et pour l'excitation. Les analyses de régression logistiques appliquées au jeu sur les ALV ont permis d'identifier les variables explicatives suivantes dans l'échantillon des élèves : sexe masculin, s'adonner à d'autres comportements à risque (surtout l'usage de marijuana), fréquenter une école où les jeux de hasard sont courants, avoir des amis qui jouent à la loterie vidéo et ne pas rentrer directement à la maison après l'école.

Les jeunes (n=36) qui ont participé à des groupes de discussion ont dit qu'ils « jouaient » pour l'excitation et le divertissement, parce que « tout le monde le faisait » et parce que les jeux de hasard comblaient un vide quand il n'y avait pas d'autres activités récréatives et loisirs. Les garçons étaient plus familiers avec les jeux de hasard que les filles et, parmi les activités populaires, ils ont mentionné le poker, les gageures sur les évènements sportifs et les jeux de dés. Les filles prisaient quant à elles les jeux où l'on gagne sur-le-champ (*gratteux*) et les billets de loterie. Les jeunes reconnaissaient que le jeu excessif avait des conséquences négatives sur le plan social et sur la santé, mais ils considéraient, règle générale, que jouer avec modération était inoffensif. Les jeunes ont identifié les facteurs suivants pour aider à réduire la propension au jeu chez les jeunes et ses conséquences négatives : campagnes d'éducation et de sensibilisation, plus grande maîtrise de soi et se fixer des limites personnelles et un plus grand nombre d'activités récréatives de rechange.

Les dirigeants scolaires ont discuté de l'omniprésence des occasions de jouer à l'argent dans le voisinage des écoles. Ils ont aussi parlé de l'acceptation sociale des jeux de hasard comme forme de divertissement dans leurs écoles. Les dirigeants et les jeunes ont décrit le jeu comme faisant partie de la culture masculine et comme activité étroitement liée aux sports amateurs et professionnels. La perception des risques du jeu de hasard sur le plan social et pour la santé variait en fonction du type de jeu (par exemple, les ALV étaient considérés comme plus dommageables que les paris sportifs) et de l'intensité de la participation à ces activités (jeu surtout social et occasionnel par opposition à jeu d'habitude ou téméraire).

Cette étude vient enrichir la documentation des domaines de la géographie sur la santé et de la santé des populations traitant des déterminants sociaux de la santé. Elle permet de démontrer l'importance de prendre en compte le contexte social des comportements qui ont une incidence sur la santé – s'adonner à des jeux de hasard étant un de ces comportements.

Cette recherche démontre la valeur d'utiliser une combinaison d'approche pour comprendre, dans le cadre de « déterminants en amont » plus généraux, comment les décisions entourant les comportements liés à la santé sont prises. Eu égard à la pratique, cette thèse détermine que l'environnement est au cœur de toute intervention pour réduire le jeu comme facteur de risque pour la santé.

TABLE OF CONTENTS

INDEX OF TABLES AND FIGURES

AUTHOR CONTRIBUTIONS

This thesis consists of three related manuscripts that have or will be submitted to peer-reviewed journals for publication.

Manuscript 1, Chapter 3 "Video Lottery Terminal Access and Gambling Among High School Students in Montréal" by Dana Wilson, Jason Gilliland, Nancy Ross, Jeffrey Derevensky and Rina Gupta. Jason Gilliland, Nancy Ross, Jeffrey Derevensky and Rina Gupta contributed intellectually and provided comments on drafts of the manuscript. Nancy Ross contributed financially to the research. Jeffrey Derevensky and Rina Gupta provided access to the survey data.

Manuscript 2, Chapter 4 "Focus groups with youth about the appeal of VLTs, why youth gamble, and advice from youth on how to reduce gambling" by Dana Wilson and Nancy Ross. Nancy Ross contributed financially to the research, contributed intellectually and provided comments on drafts of the manuscript.

Manuscript 3, Chapter 5 "Social norms around gambling in local school environments and implications on youth attitudes and behaviours towards gambling" by Dana Wilson and Nancy Ross. Nancy Ross contributed financially to the research, contributed intellectually and provided comments on drafts of the manuscript.

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CHAPTER ONE
DISSERTATION INTRODUCTION AND OBJECTIVES

1.1 INTRODUCTION

In recent decades gambling has become an increasingly accessible and acceptable form of entertainment and a source of public revenue that many governments worldwide have become reliant upon (Derevensky & Gupta 2004). Amendments to the Criminal Code of Canada in 1969 and 1985 sanctioned growth of large-scale lotteries, casinos and electronic gambling machines[1] (EGMs) across Canada. This, in turn, has made gambling more accessible in local neighbourhoods and has allowed for the continued increase in participation by the general public (Shaffer & Hall 2001, Korn 2000, Shaffer et al. 1999, Campbell & Smith 1998, Eadington & Cornelius 1997, National Council of Welfare 1996, McMillen 1996). Gambling has become very popular in Canada and, as a result, revenues from gambling activities in Canada have increased steadily from $2.7 billion in 1992 to $12.9 billion in 2005 (Statistics Canada 2006a).

Beyond a source of entertainment and governmental revenue, gambling is an emerging public health issue with gambling at the centre of numerous social and health costs (Korn 2002, Shaffer & Korn 2002, Poulin 2000). While the majority of gamblers in a given population gamble within their personal and financial limits, a proportion gamble excessively and experience a variety of difficulties (Wheeler et al. 2006, Korn et al. 2003). Unhealthy or problem gambling has been linked to many serious outcomes such as poorer mental health including depression and suicidality, criminal and delinquent behaviour, domestic violence, family dysfunction, financial

1 Electronic gambling machines (EGMs) are devices that offer several games per device on a video screen. There are three primary types of EGMs, including slot machines (e.g., like those found in casinos), video poker and video lottery terminals (VLTs) (Turner & Horbay 2004).

troubles, and increased risk to developing multiple addictions (Delfabbro et al. 2006, Grant & Kim 2002, Shaffer & Korn 2002, Stewart et al. 2002, Doiron & Nicki 2001, Derevensky & Gupta 2000, Fisher 1999, Gupta & Derevensky 1998, Derevensky et al. 1996). Gambling problems have become common in Canada. The 2002 Canadian Community Health Survey[2] (CCHS) measured the prevalence of gambling problems nationwide using the Canadian Problem Gambling Index[3] (CPGI) (Marshall & Wynne 2003). The survey revealed that 76.0% of the national population above the age of 15 in 2002 had gambled in the past year and 2.0%, or approximately 627,000 Canadians, had a gambling problem in 2002 (Marshall & Wynne 2003).

Research is beginning to demonstrate that gambling itself, and problem gambling in particular, increase as opportunities to gamble become more abundant (MacDonald et al. 2004, Grun & McKeigue 2000). According to the CCHS, provinces containing the greatest concentrations of VLTs and permanent casinos per capita almost always have the greatest rates of gambling problems (Cox et al. 2005). Gambling opportunities are also often concentrated in areas where the most vulnerable (e.g., most socio-

2 The CCHS is a set of nationally representative cross-sectional health surveys conducted in two year cycles by Statistics Canada (2002) that assess health status in Canadians aged 15 and older. The first year of the cycle (those ending in " .1" , like 1.1) consists of a general health survey sampling approximately 130,000 Canadians that enables reliable data estimates at health region levels (there are 122 in Canada). The second year of the cycle (those ending in " .2" , like 1.2) consists of a focused health survey covering specific issues (i.e., in cycle 1.2, mental health was a major theme and in cycle 2.2 nutrition was a major theme) and samples approximately 35,000 Canadians that enables reliable estimates at the provincial level.

3 Canadian Problem Gambling Index (CPGI) is a 31-item tool developed by a research team affiliated with the Canadian Centre on Substance Abuse (CCSA) to measure problem gambling in Canada in general population surveys (Ferris & Wynne 2001). The CGPI contains 9 items (the PGSI) that focus on determining gambling prevalence information, and the remaining 22 items assess indicators of gambling problems including gambling involvement and problem gambling correlates including the social and environmental context of individuals like family history of gambling, and history of drug and alcohol use (Ferris & Wynne 2001).

economically disadvantaged) members of society reside (Wheeler et al. 2006, Gilliland & Ross 2005, Korn 2000, MacDonald et al. 2004, Welte et al. 2004, Derevensky et al. 2003, Grun & McKeigue 2000). In fact, studies indicate that gambling access and uptake follow a socio-economic "gradient", and vulnerable populations often experience a disproportionate burden of gambling problems (Gilliland & Ross 2005, MacDonald et al. 2004, Shaffer & Korn 2002, Grun & McKeigue 2000). The unequal access to and consumption of gambling commodities among socio-economically vulnerable groups has led critics to call gambling revenues a form of regressive taxation (Korn 2002).

Young people are also increasingly being considered at risk for gambling problems in Canada and elsewhere (Martins et al. 2007, Delfabbro et al. 2006, Pietrzak & Petry 2006, Jacobs 2004, Griffiths & Wood 2004, Oei & Raylu 2004, Clarke 2003, Clarke & Rossen 2000, Poulin 2000). Canadian studies indicate that like adults, youth gamble often, however a larger proportion may be at risk of experiencing gambling problems. Approximately 70 percent of adolescents (ages 12 to 17) gamble at least once in a given year, and of those who gamble, 4-8% exhibit significant gambling problems while 8-14% are at risk of developing or relapsing into serious gambling problems (Derevensky & Gupta 2006). High rates of gambling among young people coupled with the increasing availability and popularity of gambling activities is cause for concern given what is known about the links between gambling availability and serious public health outcomes (Lynch et al. 2004, Stewart et al. 2002, Doiron & Nicki 2001, Shaffer & Hall 2001, Korn 2000, Korn & Shaffer 1999, Griffiths 1993). Moreover, adolescence is a vulnerable developmental period, and involvement with gambling at an early age may impact youth health and development, and may also be a precursor for further problems in adulthood (Delfabbro et al. 2006, Derevensky & Gupta 2004).

Video lottery terminals (VLTs) are one gambling activity that has become highly popular and controversial in Canada and in other countries worldwide. VLTs are a form of EGM that offer participants a selection of fast-paced, user-friendly gambling activities including slot games, video poker, video blackjack or keno (Turner & Horbay 2004). Unlike traditional slot machines that pay out winnings with coins, winnings from a VLT are often cashed out by way of a voucher that is requested by a player when a desired number of credits (wins) have been accumulated. VLTs are highly successful sources of revenue in the eight Canadian provinces where they have been legalized (VLTs outside of casinos are not legal in Ontario and British Columbia) (Azmier & Clements 2001). VLTs tend to be located in familiar community venues like neighbourhood bars and restaurant lounges where gambling activities have not traditionally been accessible (Cox et al. 2005, Dickerson 1993). VLTs are, furthermore, considered more addictive than traditional gambling activities and are associated with increased risk of problem gambling (Cox et al. 2005, Volberg 2002, Doiron & Nicki 2001). The combination of their widespread availability and addictive nature has earned VLTs the label of the "crack cocaine of gambling" (Dowling et al. 2005, Derevensky & Gupta 2000, Fisher 1999).

This dissertation examines VLT gambling among youth[4] in Montreal, QC. The broad approach taken in the dissertation is that geographic

4 The age range defined for adolescence varies across nations. The transition from childhood to adolescence is typically considered to happen between 12 and 15 years of age, and extends into the early to middle twenties. During the International Youth Year in 1985, the United Nations defined youth as young people between the ages of 15 and 24. This research uses the UN (2005) definition for youth but extends the lower age limit to begin as early as 12 years of age in accordance with existing studies on gambling among young people (See Stinchfield & Winters 1998). This research focuses on young people between the ages of 12 and 24, but uses the terms "youth", "adolescent" and "young people" interchangeably. It should also be noted that youth in developed countries are the main focus in this research.

accessibility[5] to VLT machines is an important component to understanding how and why youth gamble, given that VLTs have become prolific in the neighbourhood landscapes that youth frequent. Young people of today are the first in history to be raised with gambling so strongly embedded in social and economic sectors of society. Youth may be particularly responsive to electronic gambling activities like VLTs that reflect the information and technology age in which they have been raised. Since their legalization in Quebec in 1994, the video lottery system has grown into a network of 13,516 VLTs distributed among 3,122 sites throughout the province - nearly one third of which are located in Montreal (Loto-Quebec 2006a). Impacts of introducing VLTs into youth-frequented environments on their health and well-being have not been fully explored.

Theories developed to understand individual health behaviours vary, although many acknowledge that individual characteristics and cognitive processes alone are insufficient to produce in-depth understandings of health behaviours (Schofield et al. 2003, Bandura 2001, Fishbein & Ajzen 1975). Instead the social and physical environments of individuals are viewed as factors critical to our understanding of why people adopt or alter certain health behaviours (McNeill et al. 2006, Armitage & Conner 2000, Blaxter

5 Geographic or spatial accessibility typically describes the ease of accessing or reaching a particular amenity or location and the character, quality and quantity of the amenity (Smoyer-Tomic et al. 2004). Accessibility includes both objective measures like physical distances, time and topographical points, as well as subjective measures including participant self-report data, perceptions about the amenity, cultural, social and gender-based factors influencing access (Smoyer-Tomic et al. 2004, Estabrooks et al. 2003). In this research, VLT accessibility is considered as the presence (or absence) and quantity of VLTs in a given area bounded by physical distances, the nature or conditions of the location or neighbourhood where VLTs are present, and the accessibility of VLT sites. This dissertation considers VLT accessibility as a factor that may influence VLT or other gambling behaviours, and critically evaluates how levels of VLT accessibility vary among groups with similar social characteristics (e.g., income levels).

1990). Dimensions of the social environment[6] that may influence gambling behaviours include social norms and socio-economic conditions. Aspects of local physical environments[7] that may play a role in gambling uptake include the presence of local facilities containing gambling amenities and local sites for alternate forms of recreation and entertainment.

Much gambling research has centred on patterns and prevalence of gambling in areas and individual risk factors associated with problem gambling (Hardoon & Derevensky 2001, Poulin 2000, Fisher 1999, Gupta & Derevensky 1998, Stinchfield & Winters 1998), with less emphasis on how environments may influence or support gambling behaviours (Welte et al. 2004). Further, youth perceptions and experiences with local environments, and how youth make decisions about gambling behaviours is poorly understood. Studies have begun to suggest that unhealthy gambling may be minimized through a better understanding of the local social and contextual factors that influence gambling (Doiron & Mazer 2001, Korn & Shaffer 1999). Indeed, there have been recent calls by Korn (2002, 2000) for a public health approach to critically evaluate the consequences of gambling on the health of populations rather than isolating research efforts on individual behaviours and gambling addiction.

Early approaches to addressing problem gambling focused mainly on individual-level interventions to treat and prevent problem gambling (Eber & Shaffer 2000). While individual-level interventions can improve gambling-related outcomes among a small group of problem gamblers, this dissertation

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6 Definitions and dimensions of the social environment vary but typically include social support and social networks, socio-economic position and income inequality, racial discrimination, social cohesion and social capital, social norms and neighbourhood factors (McNeill et al. 2006)

7 Physical environments include aspects of the natural and built environments such as green and pedestrian-friendly spaces, pollution levels (e.g., air and water quality),

takes the perspective that interventions focused on individuals will have little impact on gambling-supportive environments that influence broader population-wide gambling trends.

Similar to research that has examined environments supportive of smoking or obesity (e.g., McNeill 2006, Frohlich et al. 2002), there is a growing recognition that gambling is a socially mediated practice that is highly influenced by surrounding social and physical environments. Changes to legislative environments have increased the places where smoking is prohibited like workplaces, restaurants, bars, schools and other public places. Studies suggest that altering local environments to change social norms have had a more profound influence on smoking rates than individually targeted prevention campaigns and pharmacological aids (Gallus et al. 2006, Jarvis & Wardle 2005, Merzel & D'Affitti 2003, Ross & Taylor 1998). The same approach may hold true for gambling and reducing gambling and problem gambling rates across populations may be most effectively accomplished through greater attention to social and environmental contexts.

To address the growing concern of youth gambling, a better understanding of the social and physical environments that influence youth gambling is imperative. Determining how prevalent and accessible gambling opportunities like VLTs are in youth environments and understanding why youth choose to gamble are important steps in addressing youth gambling. This dissertation adopts a population health perspective to examine youth VLT gambling as a behaviour that is embedded in the surrounding environment. A population health approach recognizes that decisions individuals make about particular health-related behaviours are not only a matter of personal choice but are also closely related to the broader

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presence of industrial facilities, waste disposal services and sites, extent of urbanization, urban design, housing type and quality (Stafford & McCarthy 2005)

environmental contexts and social conditioning of individuals (Rose 1992). Population health approaches consider the broader social and physical environments that influence individual and population health, identify social disparities that produce health inequalities and how inequalities may be remediated (Frank 1995). The academic home of this dissertation is health geography, however obvious parallels exist between health geography and population health. Both health geography and population health are committed to understanding the connections between social and physical environmental contexts and health outcomes and both aim to identify, understand and remediate disparities in health between groups.

1.2 HYPOTHESES AND OBJECTIVES

An underlying assumption of this research is that gambling (and other health-related behaviours) is influenced by a combination of social and physical environments and individual characteristics. This dissertation is organized around three main hypotheses. They are:

i) Accessibility to VLT gambling is greater in school neighbourhoods with lower socio-economic conditions than in more affluent school neighbourhoods.

ii) Accessibility to VLTs is associated with increased VLT use.

iii) Youth gambling is a complex behaviour influenced by a combination of individual characteristics of youth (e.g., sex, other health-related behaviours), their school and broader social environments.

To address these hypotheses the following objectives were derived for the dissertation research:

a) To describe the socio-spatial distribution of gambling opportunities surrounding high schools in Montreal using geo-spatial data.

b) To model VLT use by youth in Montreal as a function of individual and social-contextual characteristics (including VLT accessibility) from survey data.

c) To develop an in-depth understanding of why youth gamble through collective conversations with youth.

d) To develop an understanding of the social norms supportive of youth gambling in schools through collective conversations with youth and interviews with school officials.

1.3 DISSERTATION STRUCTURE

This thesis contains three primary manuscripts (chapters three through five) that address hypotheses and objectives outlined in the introduction (Chapter one). Each chapter preceding the introduction contains a section that briefly details how the chapter fits within the broader dissertation objectives. Background material to situate the manuscripts in coherent bodies of literature is presented in a review chapter (Chapter two). Findings of each manuscript are reviewed and summarized in relation to the broader objectives and hypotheses in a concluding chapter (Chapter six). All literature cited is listed at the end of the dissertation.

1.4 OVERVIEW OF CHAPTERS

Chapter two reviews the subdiscipline of health geography, population health and gambling as a health issue. Emphasis is placed on risky health-related behaviours that contribute to morbidity and mortality differences among individuals and groups. Gaps in understanding and addressing health behaviours effectively among populations are emphasized through a discussion of early health promotion efforts that overlooked the role of the social environment in influencing health-related behaviours and health outcomes. The population health approach is described as one that has been popularized in response to the poor understanding of the factors that produce health differences among populations. The review concludes by introducing youth VLT gambling as an example of a risky health-related behaviour that has clear connections with local social and physical environments despite these connections being largely overlooked in previous gambling research. Gambling in Canada, VLT gambling and youth gambling are reviewed to provide background on the growth of the gambling industry, the popularity of

modern electronic gambling activities like VLTs and youth as a population being increasingly considered for gambling problems.

Chapter three presents results of an assessment of the distribution of VLT sites surrounding Montreal high schools and analyses of a student survey (n=2672) conducted in Montreal on VLT and other gambling and related behaviours. The socio-spatial distribution of VLT sites and high schools was assessed to determine if there was a social gradient to VLT opportunities surrounding high schools. The student survey was analyzed to describe youth gambling attitudes and preferences, and to identify risk factors for VLT gambling among the sample.

Chapter four presents results of focus group discussions held with youth (n=36) from three high schools in Montreal to explore youth perceptions about gambling. Topics discussed include the appeal and access of gambling activities, relationships between gambling and public health, and opportunities to reduce youth gambling. Attention was given to individual youth responses in discussions and group interaction to consider how youth articulate their gambling experiences and beliefs in peer settings. Efforts taken to make the focus group process transparent included a detailed reporting of methods and consideration of group interaction among participants in discussions rather than individual responses exclusively.

Chapter five explores social norms around gambling through key informant interviews with school officials from three high schools and responses from group discussions with youth in those same schools. Perceptions about local gambling norms and attitudes and youth gambling specifically were explored. Youth awareness and interest in gambling were considered in relation to recent increases in legalized gambling activities and local gambling norms.

Chapter six discusses research findings and summarizes the dissertation. A summary of the research objectives and findings is provided in

section 6.1. In section 6.2 substantive contributions are summarized and include the following findings: VLTs are more abundant surrounding poor high schools in Montreal; sixty percent of a sample of Montreal youth reported gambling in the past year, individual risk factors identified for VLT use were male sex, engaging in other risky behaviours like marijuana use, attending schools where gambling is prevalent among students, having friends who use VLTs and travelling to destinations other than home after school; focus group discussions with youth explored why youth gamble, youth views on the adverse impacts from gambling, and advice youth had to reduce negative consequences of gambling; key informant interviews with school guidance counsellors and youth group discussions described the prevalence and acceptability of male gambling and the vulnerability of youth in general to local trends and opportunities for risk taking, articulated a range in perceived risk of harm from gambling activities, and emphasized the role of accessibility of gambling activities and the acceptance of gambling among society as influential to youth gambling.

Methodological contributions of this dissertation are reviewed in section 6.3 and focus on the value of quantitative (i.e., spatial analysis, survey analysis) and interpretive methods (i.e., focus group discussions, key informant interviews) to answer distinct but related questions about patterns and processes of health-related behaviours among youth. Section 6.4 summarizes policy contributions stemming from the results of this research and section 6.5 offers a few concluding thoughts on this dissertation.

CHAPTER TWO
HEALTH GEOGRAPHY, POPULATION HEALTH AND GAMBLING AS A HEALTH ISSUE

2.1 THE GEOGRAPHIES OF HEALTH

This dissertation finds its academic home in health geography, a field involved with understanding how places and people interact and produce varying health outcomes across populations (Gesler & Kearns 2002, Macintyre et al. 2002, Gatrell 2001, Kearns 1993). The term health geography is a contemporary adaptation of the more traditional term medical geography, where the latter has been described as focused on examinations of human health, disease, and health care (Meade & Earickson 2000). Although the terms medical geography and health geography are used interchangeably at times, a main distinction that sets the two research traditions apart is the *descriptive* focus of early medical geography in contrast to the *interpretive* emphasis of health geography. Medical geography research traditionally has examined patterns and variations in health and is concerned with *identifying* and *describing* risks for poor health or disease and understanding access to and availability of resources and health care services required for optimal health within and across places (Gatrell 2001, Taylor 1993). Health geography research, on the other hand, is concerned with understanding and explaining *why particular health patterns exist*, *how health is experienced* by individuals and populations, and *what actions can be taken* to remediate undesirable health outcomes and achieve desirable ones (Curtis & Taket 1996, Litva & Eyles 1995).

Medical geography is rooted in positivist philosophical approaches and structuralist theories that dominated geography and most disciplines across the social sciences in the first half of the 20th century (Gatrell 2001). Positivist approaches rely on empirical methods including testable hypotheses and quantitative methods to obtain scientific, 'objective' knowledge to explain

various social phenomena (Curtis & Taket 1996, Eyles 1988). Structuralist theories focus on the role of broader social and political structures, organizational features or power structures of a given society in defining human behaviour and social change (Gesler & Kearns 2002, Wilton 1999, Chouinard 1997, Litva & Eyles 1995).

In medical geography, a positivist-structuralist approach typically considers the spatial patterning or geographical determinants of health with the use of spatial and statistical analyses of socio-environmental and population health data (Gatrell 2001). Biomedical[8] concepts of health are most common in traditional medical geography since biomedical health conditions can be examined with scientific measurements that are replicable, like blood pressure monitoring for example, or the detection of a malignant tumour. Aggregate individual-level data describing socio-demographic data and other factors or covariates are assessed in relation to health conditions with the assumption that particular social patterns, behaviours or structures influence experiences of health (Gesler & Kearns 2002, Macintyre et al. 2002, Chouinard 1997, Curtis & Taket 1996, Kearns 1993, Eyles 1988).

Medical geography has two broad research traditions, disease ecology and health care access and utilization studies (Kearns & Moon 2002, Gatrell 2001, Meade & Earickson 2000). Disease ecology is rooted in spatial epidemiology and relies on spatial and statistical analyses to study the geographical patterning of determinants of health and establish causal links between social and environmental factors and health outcomes (Curtis & Taket 1996, Litva & Eyles 1995). A classic example of disease ecology comes from physician and anaesthesiologist John Snow's examination of cholera

8 A biomedical view of health typically conceptualizes the human body as a series of components that perform specific functions. A deviation from 'normal' body functioning with a given component is considered a result of an injury or the invasion of disease (Evans & Stoddart 1994a, Rootman & Raeburn 1994, Edgington 1989).

incidence in London, England in 1854 following a resurgence of the cholera epidemic that claimed 500 lives (McLeod 2000). Snow created a dot map of the homes of recent cholera deaths and traced the outbreak back to a nearby contaminated water pump, the Broad Street Pump (McLeod 2000, Meade & Earickson 2000). Snow convinced public health officials to deactivate the pump that resulted in a subsequent drop in cholera deaths. The work of Snow illustrated the role of surrounding environmental conditions, in this case contaminated water in disease transmission, and provided evidence for local public health authorities to make a timely and informed decision. Altering the immediate local environment effectively prevented the further spread of the cholera outbreak[9].

The second tradition of medical geography has examined the provision and utilization of health care. This research has typically focuses on the structure and spatial distribution of health care services and human resources, the access to and equity of forms of health care and the utilization of and need for services among populations (Curtis & Taket 1996, Litva & Eyles 1995). Examples of related research include Rosenberg's (1988) study examining relationships between underlying political, economic, social and cultural features of society and the provision and use of particular health services, namely abortion services. In another example, Cooper et al. (1999) examined the influence of ethnicity, class, housing tenure, family structure and parental employment on the use of health services by children and youth.

While structuralist approaches in medical geography were successful in identifying patterns of health across places and populations, they were criticized for excessive quantification and reductionist approaches that failed to consider individual perspectives and experiences of health. Critics claimed

9 Cholera transmission was believed to occur through miasmata, or contaminated air, and interventions focused on treating/quarantining inflicted individuals (McLeod 2000).

that structuralist approaches overlooked the role of individuals in the production of health and illness and neglected to fully understand the role of human actions and spontaneity (e.g., experiences of people who are affected by health conditions) by stripping the identity and meaning away from the subjects of study (Gesler & Kearns 2002, Kearns & Moon 2002, Wilton 1999, Gesler 1992, Eyles 1988). Further, structuralist approaches were considered to lack theory and attention to the processes linking individual human agency to wider social structures in explanations of why individuals and groups behave the way they do in the context of the places where they live (Frohlich et al. 2002, Dyck 1999, Chouinard 1997, MacIntyre 1997, MacIntyre et al. 1993).

The humanist movement beginning more broadly in the social sciences in the 1960's challenged positivist approaches and structuralist theories that relied on empirical sciences to examine the role of broader social forces in influencing individual behaviour and action (Gatrell 2001, Dyck 1999, Wilton 1999, Litva & Eyles 1995, Gesler 1992). In contrast to the structural or macro approach, a collection of theories under the broader umbrella of postpositivism gained influence in the social sciences that challenged positivist approaches and critically evaluated how knowledge and meaning is socially and culturally constructed (Guba & Lincoln 2004). The term "health geography" was coined in part to demonstrate a shift away from positivist-structural approaches to humanist ones that consider how meaning and knowledge emerges from experience and interactions between humans and their broader social and cultural settings.

Social interactionist or constructionist approaches in health geography have led to a greater examination of how individual human agency, or the micro practices and everyday activities of individuals, work to reinforce or challenge the prevailing social relations or structures in society (Gesler & Kearns 2002, Gatrell 2001, Chouinard 1997). The approach considers

knowledge and meaning to be socially constructed and recognizes the importance of meaning-centred social inquiry and the role of human experience in social change and behaviour (Wilton 1999, Litva & Eyles 1995, Eyles 1988, Ley 1988, Ley 1977). The social interactionist approach and the social construction of knowledge has resulted in a greater consideration of values, meanings and beliefs held by individuals and groups who continually contribute to the construction of knowledge and experience around notions of health, place, the body, embodiment, risk and disability (Gesler & Kearns 2002, Wilton 1998, Curtis & Taket 1996, Litva & Eyles 1995, Eyles 1988, Ley 1988).

Epistemologically, the social interactionist approach has been described as interpretive or subjective and relies on individuality, creativity, experience, meaning, intentions, beliefs and values to determine how humans behave within their particular social context (Gesler & Kearns 2002, Gatrell 2001, Chouinard 1997, Litva & Eyles 1995, Eyles 1988, Ley 1988). Feminist and poststructuralist theories in health geography draw on social interactionist approaches but encourage greater attention to historical gender relations, variability and plurality of voices (including previously unheard voices like those of women and minority groups) in research, multiple perspectives and unique health experiences of lay people as well as experts (Gatrell 2001, Wilton 1999, Chouinard 1997).

Humanist approaches like social interactionism and feminism often employ interpretive methods that provide qualitative, subjective explanations and experiences of various phenomena such as health and health-related behaviours (Williams 2003, Gesler & Kearns 2002, Shim 2002, Gatrell 2001, Wilton 1998, Curtis & Taket 1996, Litva & Eyles 1995). Social geographer Ley (1988:121) describes interpretive research as a focus on social phenomena that can, "make sense of their making sense of the events and opportunities confronting them in everyday life." Popular methodologies of interpretive

research include focus group and in-depth interviews, participant observation, textual analysis, story telling, and autobiographies (Dwyer & Limb 2001, Dyck 1999, Wilton 1999, Litva & Eyles 1995, Ley 1988).

Humanist approaches have also been subject to criticism among the social sciences. For example, in the ways that structuralist approaches have been praised, humanist approaches have been criticized for losing sight of broader structural influences and constraints on human agency (Gesler 1992). Further, interpretive methods have been criticized for a lack of 'rigour' in methodologies and dependence on the subjective intuitive skills of a single investigator or group of investigators (Ley 1988, Baxter & Eyles 1987). More in-depth critiques of humanist and structuralist approaches in explorations of health and health inequalities have ensued and continue (See Wainwright & Forbes 2000, Forbes & Wainwright 2001), although there have also been recent attempts to bridge the discord between positivist-structuralist and humanist-interpretivist approaches by acknowledging both approaches in examinations of the experiences of health across place and space. In line with the blending of positivist and humanist approaches, Giddens (1984) proposed a structuration theory that acknowledges a constant interaction or interplay between broader social structures and individual human agency. The structuration approach considers understanding social structures as impossible without considering the daily activities or social practices of the people that operate within these broader structures (Chouinard 1997, Gesler 1992).

More recently, studies typically rooted in quantitative or interpretivist traditions increasingly acknowledge the other approach or philosophy in their research. Wilton's (1999) in-depth exploration of everyday experiences of individuals living with HIV/AIDs made explicit the context of broader community resources and environments. Also, Wiles (2003:1323) examined the experiences of caregiving in the contexts of the daily geographies of place,

space and time to clarify "the recursive relationship between structural factors that shape care and individuals' experiences and understandings of their experiences." Structuralist approaches have similarly given greater consideration to interpretivist methods to enrich their studies. For example, MacIntyre (1997) called for a better understanding of the recursive and co-dependent nature of people and place to provide a more fine-grained contextualized understanding of how social structures influence mental and physical health outcomes (Worthman & Kohrt 2005). Research into health inequalities has begun to address the lack of interpretive data in large quantitative research inquiries by exploring lay concepts of health inequalities (Macintyre et al. 2005, Popay et al. 2003, Blaxter 1997).

Research into the geographies of health reflects an interest in situating concepts of health in place while recognizing the negotiated and experienced realities of both health phenomena and the spaces and places where health is produced. Health geographers have come to recognize a need for a more explicit adoption of socio-cultural theoretical[10] positions than traditional medical geography explorations to understand relationships between culture, place and health and better understand the processes or pathways that produce health patterns (Gesler & Kearns 2002, Gatrell 2001, Curtis & Taket 1996, Litva & Eyles 1995). Health geographers also typically seek to develop critical geographies of health and demonstrate a commitment to social justice and transformative politics through opposition to and exposing of unequal and oppressive power relations (Kearns & Moon 2002, Meade & Earickson 2000, Curtis & Taket 1996, Dorn & Laws 1994, Kearns 1993, Gesler 1992).

10 Socio-cultural theories consider how individual and social processes develop out of social interaction and embedded cultural knowledge, and the role that the social environment plays in constraining and enabling particular social arrangements (Lantolf 1994).

As is evident, health geography research has become increasingly diverse and often shares close ties with other related disciplines like medical sociology, social or cultural geography, social epidemiology, and public health (Parr 2002). Contemporary themes in geographical research on health include spatial inequalities in health, health and health-related behaviours, socio-economic processes and health inequalities, the importance of different places and different scales of space and place on health outcomes and experiences, the cultural politics of health and health care and processes, implications and importance of historical medical knowledge and power, beliefs and experiences of health and well-being, measuring and defining well-being and health, cultural, social and environmental contexts of health and place, and physical and psychosocial impacts of environmental risks and contamination (Fleuret & Atkinson 2007, Gesler & Kearns 2002, Gatrell 2001, Parr 2000, Curtis & Taket 1995, Elliott 1993, Taylor 1993, Boyle & Lipman 2002, Curtis & Jones 1998, Taylor 1993). While it is becoming increasingly difficult to describe research into the geographies of health simply, much current research in health geography at least implicitly examines health inequalities by emphasizing how *where* you live and *who* you are influences health patterns and inequalities in health across places and populations (Macintyre et al. 2005).

2.2 HEALTH CONCEPTS, INTERVENTIONS AND THE POPULATION HEALTH APPROACH

Concepts of health and recognized health determinants influence how illness is defined and addressed through health and public policy development (Frank & Mustard 1994). Early[11] health policies in Canada

11 In particular, the development and practice of modern medicine rooted in biomedicine, popularized in Western/Central Europe, beginning in the United Kingdom and following into North America and Europe during the industrialization and urbanization period occurring in the 19th century (Brown 2006).

during the 18th and 19th centuries largely mimicked the attitudes and practices occurring in the United Kingdom (UK) (Glouberman 2001). In the early 18th century, infectious diseases such as cholera and smallpox accounted for the bulk of morbidity and mortality experienced among populations and were largely attributed to rapid industrialization, urbanization and increased population densities. Descriptions of health at this time were primarily biomedical and negative, focusing on the absence of illness or disease (Kindig 2007, Brown 2006). Public health policies emphasized illness prevention and protecting the public from the occurrence and spread of disease epidemics primarily through modifying human environments including improving the sanitary conditions and increasing efforts towards hygienic practices of populations.

The public health movement of the 18th and 19th century largely followed the miasma and germ theories. The miasma theory posited that diseases like cholera were a result of unclean or polluted areas and noxious air (Glouberman 2001). Support for the miasmic theory of disease causation by early public health reformers like civil servant Chadwin in England resulted in major sanitary reforms including the construction of sewers, organizing sewage disposal and inspecting outhouses and water supplies (Brown & Duncan 2002, Glouberman 2001, Weisman 1998). Epidemics continued in the mid 1800s and the germ theory was popularized by advocates like Snow in England who asserted that diseases could be communicable between people. The germ theory described disease causation as a result of the invasion of infectious pathogens or micro-organisms into the body. Increasing acceptance of the germ theory in the late 1800s led health efforts to broaden and include quarantining, immunization, pasteurization, pest control, family planning, health education, personal hygiene, and antibiotics (Brown & Duncan 2002, Glouberman 2001, Curtis & Taket 1996, Weisman 1998).

Early public health practices and developments in medical science in the UK and Canada were successful in alleviating the burden of poor health and contributed to declining mortality and morbidity rates among populations until the latter half of the twentieth century (Szreter 2004). However, by the late twentieth century, the epidemiological transition marked a shift in the burden of illness from infectious diseases to degenerative diseases and chronic illness. The epidemiological transition describes a fundamental shift in morbidity and mortality patterns among populations typically attributed to changes in the social, economic and demographic structure of the population (Armelagos et al. 2005). In the UK, a population health transition occurred following the industrialization process in the mid 18th century, while the transition occurred later in Canada following industrialization in the mid 19th century. Mortality rates among populations became less closely associated with communicable and infectious diseases and leading causes of death and illness became more related to complex degenerative diseases related to lifestyle risk factors like heart disease and cancer (Armelagos et al. 2005, Caldwell 2001, Meade & Earickson 2000, Wahdan 1996). Mortality and morbidity differences became increasingly witnessed along social class lines with the highest mortality rates being observed among the lowest social classes (Subramanian et al. 2002, Glouberman 2001, Lynch & Kaplan 2001, Lynch et al. 1997, Frank & Mustard 1994).

The emergence of complex diseases (i.e., diseases with multiple causal factors, including genetic predisposition and environmental exposure), including heart disease and cancer and the social gradient of health exposed limitations of existing public health practices. It became increasingly evident that increases in utilization or expansion of medical care systems would be incapable of alleviating the burden of complex diseases like cancer. Instead, there was a growing recognition that these diseases had multiple underlying determinants embedded in social and economic factors that exist at individual

and population levels (Frank 1995). Health practices and the health trends of populations came under review in efforts to better understand the health transitions occurring among populations and identify how public resources and health policies could more effectively meet population health needs and reduce health gradients (Glouberman 2001, Lalonde 1981).

Initially, the social gradient in health was considered the result of financial barriers limiting economically disadvantaged groups access to health care and better standards of living. Universal health care was established in 1948 in the UK and in 1972 in Canada as a way to improve population health, address the social gradient in health and reduce demands on health and public services (Glouberman & Millar 2003). Removing financial barriers to accessing health care was considered a direct and obvious way to reduce health inequalities and improve the overall health of populations. Health care systems were soon criticized again however since they failed to prevent illness and instead operated primarily as reactionary systems to treat individuals following the development of illness or injury.

In the same years as universal health care was established in the UK, the World Health Organization (WHO) presented a new definition of health in 1948:100 describing health as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." The WHO's definition described health as a multi-dimensional construct and stressed a positive condition like wellness or well-being in contrast with former descriptions focused on negative conditions (Fleuret & Atkinson 2007). Although the definition has caused some debate on how well-being can be measured and defined, the WHO definition provided a broader framework for conceptualizing health that acknowledged the roles of non-biomedical

determinants of health including culture[12], lifestyle, social and physical environments (Taylor 1990). Concepts for understanding and addressing health broadened from biomedical views to recognize the role of environments (both physical and social) in producing health outcomes.

During the 1970's a worldwide discussion began on public health inspired partially by British social medicine professor McKeown's (1972) report that emphasized the historical importance of living conditions and public health care in advancing population health, rather than reactionary medicine (Glouberman & Miller 2003, Labisch 1998). Subsequent reports in North America by Lalonde (1974) in Canada and Fogel (1986) in the United States contributed to the dialogue through historical analyses of health policies and interventions, population conditions and subsequent population health data (most commonly mortality statistics) (Harris 2004, Caldwell 2001, Meade & Earickson 2000). Although these and other studies focused on different regions or populations, time periods and health measures, several key health practices became considered as vital in improving population health. Major health improvements were attributed to immunization and quarantining, modifications to urban environments and water and sanitation systems, population behaviour changes including nutrition and hygiene, and improved living conditions like reduced crowding and increased prosperity and access to resources like food supply (Health Canada 2003, CPHA 2001, Glouberman 2001, Weisman 1998, Frank & Mustard 1994, Lalonde 1981, McKeown 1972).

The benefits of good nutrition and hygiene on the health of populations became of great interest to policy makers seeking to improve population health without increasing the financial burden of health care. Hubert

12 Culture has many definitions and is operationalized in many conceptual frameworks. This dissertation considers culture to include values, systems of belief, and traditions

Laframbroise's work on the "health field concept" in the Lalonde report (1974) and his proposal for health education and social marketing to influence health behaviour changes to improve health sparked the health promotion movement in Canada (Glouberman & Millar 2003). Shortly following the report, Health Canada launched a Health Promotion Directorate in 1978 that emphasized illness prevention by encouraging health-risk avoidance, promoting healthy lifestyles, and assisting people with chronic diseases and disabilities (CPHA 2001, Frankish et al. 1999, Health Canada 1997). Initial health policy stimulated through the movement included education programs like ParticipACTION[13] that communicated the health effects of personal lifestyle choices such as physical activity and proper nutrition (CPHA 2001, Glouberman 2001, Legowski & McKay 2000, Hertzman et al. 1994, O'Neill et al. 1994).

Early health promotion efforts increased awareness of healthy behaviours like physical activity and proper diet and unhealthy or risky behaviours including smoking and neglecting to wear seat belts in cars. However, health promotion advocates soon realized that an overemphasis on lifestyle placed the onus of responsibility on individuals to avoid illness and injury and resulted in a victim-blaming attitude (Glouberman & Millar 2003). Critics of the health promotion movement claimed that a focus on individual lifestyle changes neglects the broader life circumstances and wider social environmental contexts that condition or constrain the individual choices people make (Legowski & McKay 2000, Dunn & Hayes 1999, Labonte 1995, Frank & Mustard 1994, O'Neill et al. 1994). Further, individual approaches do little to reduce the prevalence of risk behaviours in the overall population

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(Wilson 2003).

13 Fitness promotion was implemented through ParticipACTION (formerly known as Sport Participation Canada) formed in 1971 in association with Health Canada to encourage physically active lifestyles and later healthy eating as well (Edwards 2004).

and as a result, the patterns of mortality and morbidity among populations in the last century have remained relatively stable over time (Glass & McAtee 2006, Ross & Taylor 1998, MacIntyre 1997, Susser & Susser 1996, Link & Phelan 1995, Krieger 1994, Blaxter 1990).

A leading thinker in helping to shift the focus of health promotion away from individuals was British epidemiologist Geoffrey Rose. Rose (1992) opposed efforts focused exclusively on health education and individual-awareness programs and suggested that effective health policies must address overarching economic, industrial and political forces acting upon populations. These broad societal forces were the root causes perpetuating health inequalities according to Rose. He argued that the decisions people make about their diet or smoking are not simply matters of individual choice but are closely related to the broader environmental contexts and social conditioning of the individual.

Rose explains:

> *The problems of sick minorities are considered as though their existence were independent of the rest of society. Alcoholics, drug addicts, rioters, vandals and criminals, the obese, the handicapped, the mentally ill, the poor, the homeless, the unemployed, and the hungry, whether close at hand or in the Third World - all these are seen as problem groups, different and separate from the rest of their society. This position conveniently exonerates the majority from any blame for the deviants, and the remedy can then be to extend charity towards them or to provide special services. This is much less demanding than to admit a need for general or socio-economic change.* *Rose 1992: 96*

Rose contributed the concept of the "prevention paradox" or the idea that incremental shifts in the risk factor profile of entire populations can have greater widespread health impacts than approaches that target high risk groups. Rose claimed that individual awareness campaigns have not

proven as successful as anticipated in reducing individual risk factors across populations. Instead health policies and programs that focus on altering broader structural circumstances of societies, later referred to as upstream factors, are more effective in changing health behaviours (downstream factors), of more people over a longer period of time and work best to improve the health of populations (Yen & Syme 1999, Rose 1985). In other words, population health can be improved most effectively by lowering the mean level of risk factors across a population (not just those of high-risk individuals), and shifting the overall distribution of exposure.

Smoking is an example of a health behaviour where successes have been best achieved through approaches that combine policies to modify social and political environments (Jarvis & Wardle 2005, Merzel & D'Affitti 2003, Ross & Taylor 1998). In a review of 32 community-based smoking prevention programs across the United States (US), increases in tobacco taxes were found to make the strongest impact on smoking prevalence in the decade ending in 2003 (Merzel & D'Affitti 2003). Limitations of smoking prevention programs that were identified included an exclusive focus on mass education, lack of sensitivity to population subgroups in communities, failure to target the social environment (i.e., normative behaviours, policies in place that enable smoking behaviours) in addition to individual factors influencing smoking behaviours, and a general inability of programs to address the broader socio-economic and political features that influence health behaviours of communities (Merzel & D'Affitti 2003).

In Italy, a national smoking ban in indoor public places in 2005 resulted in a decrease in short term cigarette consumption (measured by legal sales) by eight percent as well as an increase in support for smoke-free legislation among general public and businesses following the introduction of policies (Gallus et al. 2006). While it is not known if these behaviour changes will produce long term modifications to smoking population wide, it does

indicate policy-level changes affecting short term success in reducing smoking across populations. This supports recommendations for public health efforts to engage in multilevel strategies that work to alter broader policies affecting behaviours as well as education and awareness campaigns and attention to individual cases and high-risk subgroups (Merzel & D'Affiti 2003).

Obesity is another public health issue where environmental examinations have produced greater insight into the factors influencing patterns of obesity among populations than programs focused on individuals. Studies of the broader social environments that influence patterns of obesity have revealed environments that support behaviours and lifestyles associated with obesity, termed "obesogenic". Obesogenic environments include those with high concentrations of fast food outlets, increases in television watching and motorized vehicle use, low concentrations of accessible and affordable nutritious food outlets, limited sidewalks, parks, trails and transit options that encourage physical activity (Wang et al. 2007, van Zutphen et al. 2007, Dorfman & Wallack 2007, Austin et al. 2005, Frank et al. 2004; Hill & Peters 1998).

Criticism of early attempts at health promotion has resulted in a general recognition that social marketing campaigns must avoid stigmatizing or blaming individuals for their behaviours and instead need to encourage voluntary actions and individual empowerment through education and access to information (Merzel & D'Affitti 2003). The role that the social environment plays in the adoption of health behaviours and the health outcomes experienced by populations was considered more fully in the Epp Report (1986) produced by the Canadian Government and the Ottawa Charter produced by the WHO (1986). These reports emphasized the role of the social, economic, and physical environments in influencing health behaviours and outcomes and criticized efforts that lay blame on individual lifestyles for illness (Health Canada 1997, Rootman & Raeburn 1994).

The belief that biological views of health should not exclusively guide policy formulation, combined with the recognition of multiple health determinants inclusive of social, cultural and economic factors, has evolved into a more elaborate conceptual framework known as population health (Frank 1995, Evans et al. 1994, Frank & Mustard 1994, Evans & Stoddart 1990). Population health lacks a concise definition, but in Canada is generally considered a research strategy with the common goal of improving the understanding of the determinants of individual- and population- level health in addition to the implications on research, policy development and resource allocation (Kindig & Stoddart 2003, Frank 1995, Evans et al. 1994).

The Population Health Project (PHP) of the Canadian Institutes for Advanced Research (CIAR) created in 1987 was central to the development of the population health framework in Canada and supported research by an interdisciplinary group on the social and economic determinants of health (CIAR 2004, Frankish et al. 1999, Frank 1995). The PHP was designed to develop a better understanding of consistently superior health enjoyed by those members of society in upper socio-economic positions (Evans et. al 1994). The population health approach addresses social equity issues through a particular concern for upstream determinants as advocated by Rose including large-scale structural characteristics of human environments that act as precursors to the health outcomes experienced across social strata (Hepworth 2004, Skinner 2002).

It should be noted however, that population-based approaches to improving health have been questioned for their effectiveness at increasing equity across populations (Starfield 2007, Victora et al. 2000). An "inverse equity hypothesis" has been considered whereby population-level health interventions result in inequities between rich and poor groups, typically becoming wider initially before they become smaller. In other words, those in lowest socio-economic strata, who are typically most in need of interventions

to reduce health inequities, are last to benefit from these programs. Instead, the poor generally experience similar or worse health initially until the rich have achieved an improved level of morbidity or mortality and the poor are able to access the intervention to improve health (Victora et al. 2000). Overall (absolute) improvements to population health have been realized however in reviewing public-health interventions, although it has been argued that continued efforts must be directed towards improving the equity of intervention provision and distribution (Starfield 2007, Victora et al. 2000).

Population health research began by identifying and describing determinants regarded as influential on both individual and population health and exploring how these determinants differ across space and between places (Frank 1995, Evans & Stoddart 1994, Rootman & Raeburn 1994). The PHP initially employed experts in the areas of health policy analysis and economics and later took on experts in the social sciences, genetics, and epidemiology (Frank 1995). Research from the PHP was published in a book *Why are Some People Healthy and Others Not?,* which demonstrated profound evidence of the links within and among characteristics of social, economic and physical environments and outcomes on health and health behaviours (Evans et al. 1994b).

Population health research elsewhere has continued defining and delineating social determinants of health including the demonstration of causal relationships between socio-economic variables like income, education and employment and a variety of health outcomes including cardiovascular disease and cancer using spatial and statistical methods (Glouberman & Millar 2003, Kosteniuk & Dickinson 2003, Subramanian et al. 2002, Adler & Newman 2002, Glouberman 2001, Marmot et al. 1997, 1991). This has included a variety of themes including psychosocial determinants of health, proximal features in environments that mediate health outcomes, and area-based health studies.

Studies on the psychosocial dimensions of health include individual perceptions and experiences of neighbourhood danger, personal control and demand at work, stress and post-work relaxation, social support and relationships, social exclusion and integration, and lifestyle limitations (Subramanian et al. 2003, Wilkinson & Marmot 2003, Meade & Earickson 2000, Frank 1995). Humanist approaches and theory-driven research have been considered to make a shift beyond disease aetiology alone to gain a better understanding of how health is understood and experienced by individuals and groups.

Studies examining characteristics of the immediate social environments of individuals or groups include proximity and access to resources like fresh produce or fast foods, transportation options, opportunities for health-promoting behaviours like parks and recreation centres, and environments that support health-damaging behaviours such as smoking (Wilkinson & Marmot 2003). Area-based studies address questions raised about the relative importance of health determinants across places, such as the effect on health from living in a particular neighbourhood or community (Ross et al. 2004, Wilson et al. 2004, Acevedo-Garcia et al. 2003, Kawachi & Berkman 2003, Ross et al. 2002, Squires et al. 2002, Cattell 2001, Acevedo-Garcia 2000, Massey 1996). Variation in health outcomes and determinants have been categorized as functions of the characteristics of people (i.e., compositional features), the characteristics of places (i.e., contextual features) and more recently the socio-cultural and historical characteristics of people in places (i.e., collective features) (Andrews & Moon 2005, Frohlich et al. 2002). Area-based studies have inspired assessments of concepts and definitions for places like local neighbourhoods, including technical aspects of identifying appropriate and meaningful neighbourhood boundaries as units of analysis for health (Dietz 2002).

Although a great deal of evidence supporting the role of social determinants in population health has been documented, the precise physiological pathways through which elements of the social environment are manifested into health outcomes remain unclear (Starfield 2007, Kaplan & Lynch 1997, Macintyre 1997). Research directions include a shift to understand the relative importance of health determinants in different places and among different populations and subpopulations, the development of conceptual models to identify and understand health determinants and particularly policy-relevant health determinants, and the effectiveness of population-based health interventions (Starfield 2007, 2006). For example, research has begun to try to understand the mechanisms that link determinants to health outcomes, such as how stress gets *under the skin* and plays a role in biological mechanisms within the body and produces health outcomes (Frohlich et al. 2002, Kaplan & Lynch 1997, Macintyre 1997, Syme 1994).

The CIAR's pioneering work on the determinants of population health and development of a framework for understanding population health was officially adopted in Canada in 1994 with the formation of the Population and Public Health Branch (PPHB) at Health Canada (Health Canada 2004). Frank (1995) outlined primary tenets of the population health framework to include:

i) Acknowledgment of socio-economic and cultural factors as major population health determinants that manifest along social class lines and supersede medical care inputs and use.

ii) Recognition that prosperity and equitable distribution of wealth are equated with better health outcomes at the population level.

iii) Understand that proximal socio-economic environments of an individual have profound impacts on health status (e.g., through psychological pathways, coping skills).

iv) Recognition that health and developmental experiences in early childhood (including fetus and in utero experiences) have long-term implications on health throughout the lifecourse.

v) Proclivity for health policies that are multi-sectoral and target a range of socio-economic and biological health determinants.

vi) Support for population health research that incorporates interdisciplinary skills, multiple research methods and levels of focus.

Population health research based on these fundamental principles is widespread, but in general strives to understand the determinants of health, examines social inequities and policies that perpetuate them, and recognizes individual experiences as important health determinants. Further, population health research places an emphasis on vulnerable subpopulations (e.g., young, old, impoverished, unemployed, recently immigrated, visible minorities) and values a community-level approach (e.g., community support and participation) in policy and program development (Frank 1995).

2.3 A POPULATION HEALTH APPROACH TO YOUTH VLT GAMBLING

This dissertation examines youth gambling through the blending of health geography and population health approaches. Gambling is viewed as a behaviour embedded in social and physical environments and is thus intimately connected to the local geographies of populations and individuals. Gambling is also considered a behaviour with implications on the health of individuals and populations. To bring together health geography and population health in this study of youth gambling, the main tenets of population health are considered in light of local opportunities and experiences of gambling. Attention is given to social inequalities that can contribute to disparities in gambling opportunities and behaviours and youth are recognized as a vulnerable and under-researched subpopulation. Further, the experiences and perceptions of youth are valued as factors that can influence health behaviours like gambling and the importance of community

is demonstrated through an assessment of video lottery terminals as one localized gambling opportunity in youth environments.

2.3.1 Gambling and Health in Canada

Gambling is described as an activity involving the risk of money or something of value on the outcome of a game or event when the probability of winning or losing is uncertain and to some magnitude is determined by chance (Shaffer & Korn 2002). There are currently four main types of legalized gambling schemes in Canada: lotteries, casino style gambling, charitable gambling, and pari-mutual wagering (Table 2.1).

Table 2.1 Types of gambling in Canada

Four main types of gambling activities in Canada	
Lotteries	Include large lotteries that occur regularly like Lotto 6/49, instant win (scratch) tickets, sports betting and electronic gaming machines (EGMs) not contained in casinos (like VLTs)
Charitable gambling	Includes bingos and raffles licensed to charitable organization
Pari-mutuel wagering	Includes racetrack wagering like horse-betting
Casino gambling	Includes all gambling activities including EGMs located within casinos
Source: Campbell & Smith 1998	

Gambling is publicly regulated in Canada and effectively serves to generate public revenues without increasing taxes (Campbell & Smith 1998). Legalized gambling activities in Canada generate enormous governmental revenues that have grown steadily in recent years (Table 2.2). Net revenues from lotteries, EGMs including VLTs, and casinos were $12.9 billion dollars in 2005 making gambling the biggest consumption tax in Canada ahead of the combined net tax profits of tobacco and alcohol that totalled $7.3 billion in 2005 (Statistics Canada 2006, Azmier 2005).

Table 2.2: Gambling revenues in Canada in 1999/2000 and 2003/2004

	Gross[14] (Net[15]) Revenue 1999/2000 $ Millions	Gross (Net) Revenue 2003/2004 $ Millions
British Columbia	558 (532)	1,889.6 (727.6)
Alberta	1000 (856)	1,591.0 (1125.2)
Saskatchewan	332 (254)	456.3 (261.0)
Manitoba	412 (236)	468.1 (245.0)
Ontario	3319 (1974)	4,917.7 (2091.6)
Quebec	2676 (1328)	2,585.5 (1459.3)
New Brunswick	198 (87)	209.1 (119.3)
Nova Scotia	336 (178)	387.0 (174.4)
Prince Edward Island	28 (13)	34.7 (18.1)
Newfoundland & Labrador	174 (101)	204.8 (107.6)
Territories	7 (4)	N/A
Total	9040 (5561)	12,741.9 (5561)
Source: Azimier 2005:2, 2001:3		

The provincial and territorial governments play multiple roles as owner, overseer, regulator and promoter of gambling operations (Campbell & Smith 1998). Between 1892 and 1969 gambling activities were under federal jurisdiction by law under the Criminal Code of Canada (CCC). The CCC was amended in 1969 to enable the federal government to create a national lottery in 1970 to fund the 1976 Olympics in Montreal, and again in 1985 to transfer all legalized gambling operations to the provincial/territorial levels[16] with the exception of the national lotteries (Azmier 2001, Campbell & Smith 1998). Since the 1985 amendment, introduction of casinos and EGMs has been witnessed in several provinces across Canada and there are now more technologically sophisticated gambling opportunities and higher average

14 Gross Revenue is the value after prizes are awarded and does not include licensing fees, charitable gambling or horse racing revenue (Azmier 2005).

15 Net Revenue is the amount after expenses, prize payouts, commissions. Win taxes, revenue accrued and lost calculated and reported varies by province. Does not include licensing fee revenues or charitable gambling and horse racing revenue (Azmier 2005).

16 Decisions over what gambling activities will be legalized and to what extent they are distributed among populations is left to the discretion of each province and territory independently.

expenditures and revenues than ever before (Odegarrd 2004, Statistics Canada 2004, Shaffer & Korn 2002, Korn 2000, Campbell & Smith 1998, Eadington & Cornelius 1997, McMillen 1996, National Council of Welfare 1996) (Table 2.3).

Table 2.3 Gambling venues in Canada in 2005-2006

	Bingo halls	Casinos[17]	EGMs[18]	Racing venues[19]	Poker rooms[20]	Lottery ticket outlets
British Columbia	32	20	21	26	5	4390
Alberta	47	17	1099	47	16	2280
Saskatchewan	21	7	684	8	N/A	785
Manitoba	0	4	552	19	1	842
Ontario	101	10	27	107	8	10798
Quebec	291	3	3125	28	0	9843
New Brunswick	0	0	628	4	0	1005
Nova Scotia	0	2	456	14	2	1167
Prince Edward Island	0	0	73	2	0	208
Newfoundland & Labrador	0	0	569	1	0	1293
Total	492	63	7234	256	32	32611
Source: Canadian Partnership for Responsible Gambling 2007:2.						

Growth of the gambling industry in Canada and elsewhere in recent decades has led to increased gambling participation and popularity (Shaffer & Hall 2001, Shaffer et al. 1999, Campbell & Smith 1998, McMillen 1996). Governments[21] often emphasize social benefits of gambling, particularly that

17 Casinos are permanent and include charity, commercial, Aboriginal (both on and off First Nation Reserves).

18 EGMs include slot machines and VLTs that are located inside bars, bingo facilities, casinos and racetracks.

19 Horse racing venues include minor (less than 15 racing days per year) and major (more than 15 race days) racetracks and teletheatres.

20 Poker rooms include player-banked poker played against or between patrons other than the house (hosting venue), located in gaming venues.

21 For example, provincial governments and government-established corporations or agencies that oversee gambling operations (e.g., Loto-Quebec, the Atlantic Lottery Corporation, the Ontario Lottery and Gaming Corporation, the Western Canada Lottery Corporation and the British Columbia Lottery Corporation).

gambling funds charity and other public services (Campbell & Smith 1998). Gambling has been marketed as a leisure activity for affluent members of society and an enterprise that holds the promise of potential increases in socio-economic position for the working class (McMillen 1996). The argument could be made that sensible wagers resulting in financial gains can increase individual wealth, a factor that is associated with better health outcomes (Wilkinson & Marmot 2003, Shaffer & Korn 2002). Social, healthy or responsible gambling is described as gambling where participants make informed decisions and sensible wagers (Korn et al. 2003).

Social gamblers receive the most health benefits from gambling including benefits associated with leisure, play and socialization. Gambling venues provide opportunities to bring communities together to engage collectively in entertainment, socialization, and leisure associated with gambling (Vander Bilt et al. 2004, Smith & Abt 1984). Vander Bilt et al. (2004:374) describe social benefits from gambling, "like going to a movie, being at a pub or participating in physical activity, gambling venues may provide a healthy change and respite from the demands of everyday life or social isolation." Vander Bilt et al.'s (2004) study of gambling involvement and mental health among the elderly revealed that gambling activities have the potential to improve social support through social integration including a sense of connectedness and socialization through leisure time. Responsible gambling is considered a fun or pleasurable activity that can provide a balance or equilibrium from social responsibilities like employment (McMillen 1996). Recreation and having fun are considered important determinants of health and well-being and work to reduce stress and anxiety (Wilkinson & Marmot 2003, Smith & Abt 1984). Thus in moderation, gambling activities can be viewed as having health benefits by encouraging socialization and individual stress reduction (Wilkinson & Marmot 2003).

Although gambling is a government-regulated and endorsed activity, it is contentious and complex with numerous health, social, and economic costs to society (Eadington 1997). Gambling results in different tangible and psychological experiences that are dependent on the type of gambling activity, the participant, and on other social and contextual factors of the gambling environment (Simmons et al. 2003, McMillen 1996). Eadington (1997:7) discusses the erratic deliverables of gambling that, "capture the imagination and the spirit. It can be tremendously enjoyable. Yet the same activity can bring some people beyond the brink of despair." Thus, although gambling has the potential for pleasure and benefits of socialization, gambling is also capable of devastating the lives of individuals who become problem gamblers (Shaffer & Korn 2002, Eadington 1997, McMillen 1996, Fleming 1978). Adverse social, financial and health problems experienced by individuals who gamble to the point of incurring personal and financial harm are considered to also negatively impact a range of people in their immediate social networks, including families, friends, employers, and health and social service organizations that address gambling issues (Derevensky & Gupta 2004, Shaffer & Korn 2002, Politzer et al. 1992).

As a risk-taking behaviour, gambling is controversial since it consistently produces 'winners', including governments, industry and the minority of gamblers who make money, and 'losers', comprising the vast majority of gamblers who experience financial losses and other adverse effects from gambling. Studies indicate that as gambling availability increases, so too does problem gambling among populations (Cox et al. 2005). Critics claim that while gambling revenues are generated at the cost of the health and well-being of populations, only a fraction of gambling proceeds are directed towards programs aimed at reducing the impact of problem gambling (Korn 2002). The endorsement of gambling activities by governments has been criticized since it effectively transforms an inherently risky activity into a normalized and acceptable one (McMillen 1996). Critics consider the

fundamental principles and ethics of gambling to be immoral and consider the rise in gambling popularity in relation to declines in moral standards and 'positive' social influences such as religion (Eadington 1997, McMillen 1996). Gambling is also considered as an undesirable vice that encourages greed and has been deemed unethical because it presents the opportunity for monetary compensation without traditional or 'just' labour efforts (Eadington 1997, McMillen 1996).

Individual gambling is typically classified into social or normal, at-risk, problematic or sub clinical and pathological gambling (the latter category includes probable pathological, extremely pathological, in-transition, and compulsive gambling) (Shaffer & Korn 2002). The majority of gamblers in a given population are categorized as social gamblers, whose impulse towards and participation in gambling activities is considered 'healthy' or within their personal and financial limits (Korn et al. 2003). Unhealthy or problem gambling occurs when individuals gamble outside of their personal and financial limits and experience varying levels of difficulty from these behaviours. Problem gambling is viewed on a type of continuum, with frequency of gambling and experience of negative effects ranging to the most extreme point at which gambling is considered pathological.

Pathological gamblers are considered those who gamble outside of their personal and financial limits thus facing severe levels of financial, personal, familial, academic and emotional distress on account of their involvement with gambling (Poulin 2000, Fisher 1999, Gupta & Derevensky 1998). Problems from gambling were formally recognized by the American Psychiatric Association (APA) in 1980. Pathological gambling was classified as a psychiatric disorder of impulse control along with pyromania and kleptomania. In the Diagnostic and Statistical Manual of Mental Disorders (3rd edition), pathological gambling is characterized as "a chronic and progressive failure to resist impulses to gamble, and gambling behaviour that

compromises, disrupts, or damages personal, family, or vocational pursuits. The gambling preoccupation, urge, and activity increase during periods of stress. Problems that arise as a result of the gambling lead to an intensification of the gambling behaviour. Characteristic problems include extensive indebtedness and consequent default on debts and other financial responsibilities, disrupted family relationships, inattention to work, and financially motivated illegal activities to pay for gambling" (APA 1987:324).

Health issues associated with gambling vary according to the level of gambling participation and the emotional and financial outcomes experienced from gambling. Depression, suicide and suicide ideation, criminal behaviour and delinquency, domestic violence and family dysfunction, financial difficulties and heightened risk to developing multiple addictions are among the outcomes that have been linked with gambling activities (Shaffer & Korn 2002, Stewart et al. 2002, Doiron & Nicki 2001, Derevensky & Gupta 2000, Fisher 1999, Gupta & Derevensky 1998, Derevensky et al. 1996, Frank et al. 1991).

Problem gamblers are considered those individuals who fall short of the diagnostic criteria for pathological gambling but are considered to be in a preliminary stage of this progressive disorder. Problem gamblers are described as individuals who lose excessive amounts of money through gambling and exhibit patterns of gambling that compromise personal, family or vocational pursuits (Lesieur 1998). Features of problem gambling include gambling with increasing amounts of money to achieve desired outcomes (e.g., psychological rewards like excitement), chasing losses[22], selling personal belongings or borrowing money to obtain funds to gamble, making larger

22 Chasing losses is an expression used to describe gambling behaviours where a gambling strategy is adopted, adhered to or increased despite gambling participation resulting in a series of or increasing losses of gambling wagers (Linnet et al. 2006).

wagers than can be afforded to lose, and recognition of a potential gambling problem).

In 2002, Cycle 1.2 (Mental Health and Well-Being) of the Canadian Community Health Survey (CCHS) included the Canadian Problem Gambling Index (CPGI), a tool to measure gambling involvement, level of risk and associated problems. Problem Gambling Severity Index (PGSI) is a component of the CPGI that categorizes individual behaviours into five groups: non-gambling, non-problem gambling, low risk gambling, moderate risk gambling, and problem gambling (Ferris & Wynne 2001). Analysis of the PGSI revealed that 75.8% or 18.9 million Canadians (above the age of 15) gambled in 2002, and 5% or 1.2 million Canadians had a gambling problem or were at risk of having a gambling problem (Marshall & Wynne 2003) (Table 2.4). The adverse impacts of gambling on the quality of life of individuals, families, and communities have been raised as an increasingly important public health issue in Canada (Korn et al. 2003, Marshall & Wynne 2003, Shaffer & Korn 2002, Korn 2000, Poulin 2000).

Table 2.4: Gambling behaviours of Canadians in 2002 from CCHS 1.2

	Gamblers	Non-problem gamblers	At-risk or problem gamblers			
			Total	Low -risk	Moderate-risk	Problem gamblers
Total	18887	17699	1188	697	373	118
%	100	93.7	6.3	3.7	2.0	0.6
Canadian estimate (thousand)	18900	17700	1200	700	370	120
Source: Marshall & Wynne 2003						

Video lotteries are among the most popular and controversial gambling activities in Canada. Video lottery terminals are a form of EGM that offer a selection of games in a single machine including slot games, video poker, video blackjack and keno (Turner & Horbay 2004). Video lottery terminals are user-friendly and can be played relatively easily without prior experience or knowledge of particular gambling rules (Azmier 2001, Dickerson 1993).

Gambling activities offered by VLTs are fast-paced, and gambling events or outcomes from wagers, occur at a more rapid rate than lotteries that have events occur once or twice a week. The continuous audio and visual sensory stimuli VLTs provided to players has been considered hypnotic and even alienating since little social interaction is required between players and their surroundings (Azmier 2001, Johannsen & Gottam 2003, Dickerson 1993).

Although VLTs are similar to the gambling activities found within casinos (e.g., computerized slot machines), they are much more accessible among local neighbourhood environments than activities exclusive to casinos (MacDonald et al. 2004, Azmier 2001, Shaffer et al. 1999, Campbell & Smith 1998, McMillen 1996). In 1990 provinces began introducing VLTs, beginning with New Brunswick, and to date all provinces in Canada operate VLTs with the exception of British Columbia and Ontario (Table 2.5). VLTs have proven to be important sources of revenue in Canada and are among the most efficient gambling activities for governments to offer since they require little in the way of labour to operate and maintain (Azmier & Clements 2001). It is interesting to note that without VLTs, Ontario and British Columbia make the least amount of profit per dollar spent in the gambling industry (Azmier 2005).

Table 2.5: VLTs outside of casinos and racetracks in Canada in 2002/3 and 2005/6

	VLTs in bars or lounges 2002/3 (2005/6)
British Columbia	0 (0)
Alberta	5995 (5981)
Saskatchewan	3760 (3978)
Manitoba	5058 (5361)
Ontario	0 (0)
Quebec	13896 (13086)
New Brunswick	2560 (2631)
Nova Scotia	3234 (2361)
Prince Edward Island	406 (338)
Newfoundland & Labrador	2597 (2644)
Total	37506 (34019)
Source: Canadian Partnership for Responsible Gambling 2006:2, 2007:2	

EGMs like video lotteries are considered to be more addictive than previous traditional gambling activities (Dowling et al. 2005, Smitheringale 2003, Turner & Horbay 2004, Doiron & Mazer 2001). In fact, one quarter of Canadians reporting VLT use in 2002 had a gambling problem or a potential problem (Marshall & Wynne 2003). Further, studies indicate that a disproportionate amount of gambling revenues come from problem gamblers (Smith & Wynne 2002), and the majority of revenues generated from VLTs may actually come from problem gamblers (Williams & Wood 2004).

Efforts to reduce the burden of gambling-related public health costs focus mainly on the treatment and prevention of pathological and problem gambling (Eber & Shaffer 2000). Several screening protocols like the PGSI in the CPGI are used to assess and diagnose gambling and difficulties among individuals (Shaffer & Korn 2002, Lesieur 1998, APA 1980). Treatment programs are available to individual problem gamblers including special assistance phone line services, treatment at multi-addiction centres, awareness and prevention campaigns promoting responsible gambling, voluntary self-exclusion from casinos, monitoring at-risk problem gambling groups, and self-help devices introduced into casinos and within gambling machines (Derevensky & Gupta 2004, Shaffer & Korn 2002). Other services available to problem gamblers and people closely connected to those individuals include self-help multi-step group programs like Gamblers Anonymous, and Gam-Anon that share principles and strategies of Alcoholics Anonymous, Al-Anon and Alateen (Korn 2000, Lesieur 1998).

Only recently efforts have been made to alter communities or local environments to change gambling behaviours. Strong public opposition to VLTs across Canada has led to the curtailment of future expansion of VLT venues in Quebec, New Brunswick and Prince Edward Island beginning in 2000. These provinces have worked to reduce and redistribute VLTs within their respective provinces by placing periodic moratoriums on growth and

reducing the number of VLTs in some lower income areas (Azmier 2005). In Quebec, Loto-Quebec has implemented a VLT redistribution program announcing a reduction of VLT sites (not machines) by 31% over three years. Removal and redistribution of VLTs will be based on the consideration of local socio-economic characteristics and balance of machine distribution. Initial activities of the plan involved removal of 217 machines from socio-economically vulnerable locations and the concentration of 758 others into a small number of VLT-dense sites (Loto-Quebec 2004). Following the redistribution plan beginning in 2004 in Quebec, the rate of growth in gambling revenues decreased for the first time since VLTs were introduced in the province. The next phase of the redistribution plan includes closing 1142 VLT sites in Quebec and moving the 2500 VLTs that were in those sites to four gaming halls in Quebec (Trois-Rivieres, Quebec City, Mont-Tremblant and north Montreal) called Ludoplexes (Loto-Quebec 2007)

It has been speculated that recent reductions in the growth of gambling revenues may be a result of regulatory controls restricting the growth of gambling commodities like VLTs rather than a decline in consumer demand for gambling (Azmier 2005). Goals to reduce unhealthy gambling across populations and among vulnerable groups like the economically disadvantaged, elderly and youth may thus be best achieved through continued public health interventions that promote environments that are supportive of abstaining from gambling or responsible gambling. Public health interventions addressing other health behaviours like smoking have begun turning to environmental solutions for health rather than continuing to focus on indivdual-targeted efforts alone. Modifying local environments may also provide the greatest potential for making population-wide and long-term impacts on social norms and values surrounding gambling.

2.3.2 Social inequalities in the health burden of gambling

In epidemiological terms, gambling opportunities in an area resemble an "exposure" that places a given population at risk of developing gambling problems. Access to gambling opportunities may seem ubiquitous across urban areas in Canada and North America, since typically at least one form of gambling commodity (i.e., lottery or scratch tickets, EGMs, sports betting, bingos) can be found in areas where convenience stores, grocery stores, bars, or service organizations are present. However, a close examination of the prevalence of gambling venues and concentration of gambling commodities in local environments reveals that gambling opportunities are not always uniformly distributed. Instead, the most vulnerable (e.g., most economically disadvantaged groups) members of society often have increased exposure to gambling opportunities, and past research has shown that gambling increases as opportunities become more abundant (Cox et al. 2005, Gilliland & Ross 2005, MacDonald et al. 2004, Derevensky et al. 2003, Grun & McKeigue 2000, Korn 2000).

Although on average, high-income households spend more in terms of absolute dollars on gambling than lower-income households, studies indicate that lower-income households spend proportionately more of their incomes on gambling (Shaffer & Korn 2002, Lesieur 1998). In a study of household spending in Canada, it was reported that of those households that participated in gambling activities in 1996, households with incomes of $80 000 or more who gambled spent 0.5% of their incomes, while those households with incomes less than $20 000 who gambled spent 2.2% of their income on gambling activities (Korn 2002). Further, groups with low education levels gamble more intensely and spend proportionally more income than those with university education (MacDonald et al. 2004). Gambling revenues have also been examined in relation to problem gambling. For example, a review by Lesieur (1998) of gambling expenditure data in three Canadian provinces and

four states in the United States (US) revealed that the average proportion of gambling revenues generated by problem gamblers ranged from 22.6% to 41.2% with an average of 30.4%.

In addition to socio-economically vulnerable populations, members of society who have been found to be at risk for experiencing a gambling related problem include males (especially young single males), youth and seniors, females, homeless persons, socio-economically disadvantaged groups, special populations including casino employees, persons with existing mental health issues, and those with particular ethno-cultural backgrounds including non-European, recent immigrants, ethnic minorities, refugees, and Aboriginal heritage groups (Rota-Bartelink & Lipmann 2007, Odegarrd 2004, Petry et al. 2003, Volberg 2002, Shaffer et al. 2002, Shaffer & Korn 2002, Weibe 2001, McNeilly & Burke 2000, Shaffer et al. 1999, Stinchfield et al. 1997). In light of the concerns over the socio-economic inequalities in gambling access and consumption, public revenues from gambling have been called a regressive form of taxation that burdens groups who have the most to lose from gambling activities (Korn 2002, Schissel 2001).

2.3.3 Youth: a vulnerable and under-researched subpopulation

There are approximately 1.2 billion youth in the world today between the ages of 15 and 24 (UN 2005). Despite comprising nearly one fifth of the world's population, young people are still a relatively under-researched population (UN 2005). Adolescence is typically considered a stage in the life cycle between childhood and adulthood where the skills needed to assume the roles and responsibilities of adulthood are developed (Simpson et al. 2006, Richter 2006, Kershaw et al. 2005, Call et al. 2002, Harris et al. 2002, Dumont & Provost 1999). Adolescence can be a trying time as this stage of life is marked by changing experiences, increased developmental challenges, new opportunities for independence and decision making, experimentation and sensation seeking (He et al. 2004, Morrongiello & Dawber 2004, Roth &

Brooks-Gunn 2003, Cook et al. 2002, Harris et al. 2002, Brooks-Gunn 2001, Bradizza & Stasiewicz 1999, Brofenbrenner 1986).

On the surface, adolescence appears to be one of the healthiest periods in the lifecourse since youth have presumably overcome childhood health risks (e.g., the high risk of infancy) and have not yet experienced conditions associated with adulthood and later life stages (e.g., declining health, chronic illness) (Call et al. 2002). Youth are a vulnerable population however, since the physical and psychosocial developments and health experiences that occur early in the lifecourse from infancy to childhood to adolescence can have lifelong and cumulative impacts on the health conditions experienced into adulthood (Richter 2006, Kershaw et al. 2005, Morrongiello & Dawber 2004, Call et al. 2002, Brooks-Gunn 2001, Bradizza & Stasiewicz 1999, Hedberg et al. 1999). Most of the leading causes of morbidity and mortality among adolescents are behaviourally mediated and include a range of risky health behaviours (He et al. 2004). Critical events, behaviours and experiences that occur during adolescence that can have long-term implications on health and well-being include educational attainment (e.g., finishing or leaving school), joining the workforce, bearing children, risky behaviours including substance and tobacco use and gambling, violence and delinquency, sexual activities, physical activity and diet, peers and friendships, and civic involvement (Richter 2006, Call et al. 2002, Griffiths 2004, Gupta & Derevensky 1997).

Studies adopting a lifecourse perspective examine how early life factors such as socio-economic conditions and biological, behavioural and psychosocial processes influence health status in adulthood and across the lifecourse (Hertzman & Power 2003, Kuh et al. 2003, Kawachi et al. 2002, Lynch et al. 1997b, Power & Hertzman 1997). Socio-environmental contexts that have been identified as particularly influential to health behaviours and outcomes during adolescence include home environments, family socio-economic conditions, peer groups and peer risk-taking behaviours, school

contexts and local neighbourhood settings (Kershaw et al. 2005, Morrongiello & Dawber 2004, Cook et al. 2002, Willms 2002, Brooks-Gunn 2001, Moen 2001, Bronfenbrenner 1986). Inequalities embedded in the social environments of youth have been related to the systematic gradient in health outcomes and limit health opportunities early in the lifecourse (Simpson 2006, Kershaw et al. 2005, Torsheim et al. 2004, Willms 2002, Aber et al. 1997, Vagero & Illsey 1995). Disparities among family-, school-, neighbourhood- and peer-level environments have been related to child and adolescent outcomes including increased risk of poor emotional, mental or physiological health (i.e., injury, respiratory illness, neonatal and post neonatal mortality rates, body mass index), psychosomatic illness, academic failure or dropout, antisocial or delinquent behaviours, low physical activity and poor diet, teen childbearing, the uptake of risky behaviours such as substance use, sexual activity, and gambling (Chen et al. 2006, Prelow et al. 2006, Simpson 2006, Kershaw et al. 2005, To et al. 2004, Catalano et al. 2004, Damon et al. 2004, Moore et al. 2004, Park 2004, Torsheim et al. 2004, Boyle & Lipman 2002, Pickett et al. 2002, Willms 2002, Brooks-Gunn 2001, Dumont & Provost 1999, Sampson et al. 1999, Sucoff & Upchurch 1998, Vagero & Illsey 1995). It is increasingly clear that health-related experiences in early life and inequalities in those experiences have strong bearings on health outcomes across the life course making youth a vulnerable subpopulation.

2.3.4 Youth experiences and perceptions as health determinants

Youth typically spend more time in their local neighbourhood environments than they spent during their childhood and have increasing independence and autonomy from parental or guardian supervision (Morrongiello & Dawber 2004, Drukker et al. 2003). A decrease in supervision is often coupled with an increase in time spent with peer groups. The role of peers in shaping individual behaviours often becomes more pronounced during this period. New environments and social contexts to explore often

include new opportunities for engaging in risk-taking activities. Risk-taking behaviours are exploratory or experimental activities that are typically considered a common and a central developmental process of adolescence as youth move towards adulthood (Michaud 2006). Risky behaviours produce variable outcomes and contribute to overall adolescent morbidity and mortality. Examples of risky youth behaviours include substance use, sexual activity, poor dietary habits and lack of physical activity, risky driving, and violent acts (Kulbok & Cox 2002). Gambling is also a risky health-related behaviour that is becoming increasingly common among youth (Shaffer & Korn 2002, Stewart et al. 2002, Doiron & Nicki 2001, Derevensky & Gupta 2000, Fisher 1999, Gupta & Derevensky 1998, Derevensky et al. 1996, Frank et al. 1991).

Traditional research on risky behaviours emphasized the role of individual risk factors and individual biological and psychological explanatory models that influence decision-making. As outlined earlier in this chapter, the focus on individuals has been critiqued for neglecting the role of broader social contexts in which individual behavioural decisions are made and facilitated. For example, social and legislative acceptance, promotion and sanctioning of activities like smoking or alcohol consumption is considered pivotal in the development or maintenance of these behavioural trends (Michaud 2006, Reyna & Farley 2006, Swart et al. 2006, Currie et al. 2004, Welte et al. 2004, Wakefield et al. 2003, Korn 2000, Yen & Syme 1999). The importance of the social contexts of gambling and problem gambling has been identified as an essential research priority (Doiron & Mazer 2001, Korn & Shaffer 1999).

Young people of today are being raised in environments where gambling activities are more available and accessible than previous generations. In the case of gambling there is a poor understanding of the impact that changing gambling technologies like the introduction of VLTs

and legislative amendments will have on youth populations. Youth perceptions and involvement with gambling is still being assessed and is subject to constant change with gambling opportunities changing frequently. Future health implications that will emerge in their youth and later adult years are still unknown.

2.3.5 Importance of local gambling policies

Youth gambling is embedded in the social contexts in which youth live, study and play. Gambling and VLT gambling in particular are typically localized activities. To understand youth VLT gambling, the local environments of youth must be understood in relation to VLT opportunities and social norms around gambling. Further, the experiences and attitudes of youth in these environments must be understood, to identify the appeal of gambling and why youth gamble in particular settings. Two useful concepts for exploring youth perceptions of environments and behaviours are MacIntyre et al.'s (2002) local opportunity structures, and Galster and Killen's (1995) metropolitan opportunity structures and sets. Opportunity structures are defined as socially patterned features of the physical and social environment that either prevent or promote healthy lives. Macintyre et al. (2002, 2000, 1993) applied their framework to explore the patterning of opportunity structures among economically contrasting neighbourhoods in Scotland. This neighbourhood comparison assessed neighbourhood-level features including recreation facilities, transport services, food retail outlets, and also individual-level characteristics including self-reported physical activity and perceptions about and experiences in local neighbourhoods. Their study revealed that opportunity structures promoting healthy living were systematically weaker in poorer neighbourhoods. They also found that some neighbourhood amenities like tennis courts were not always distributed in a gradient-like fashion across wealth, suggesting a gap in understanding the

processes responsible for distribution of some local level amenities or health-promoting/detracting opportunities (Macintyre et al. 2002, 1993).

Galster and Killen's (1995) metropolitan opportunity structures are described as objective neighbourhood characteristics such as employment structures, housing, education and welfare systems, as well as local social networks including social norms and decision making contexts. Opportunity sets are considered an individual's knowledge of and perceptions about the opportunity structure, including the estimated negative or positive consequences associated with various choices and activities possible to the individual in their neighbourhood. In relation to behavioural research, metropolitan opportunity structures present various behavioural settings for human activity. Participation in a given behavioural setting, however, is dependent on the opportunity sets (knowledge, perception) of the individual, including their consideration of the consequences arising from their engagement in that activity.

Borrowing from these two concepts may help to operationalize the population health framework and explore neighbourhood opportunities for VLT gambling among youth. The concepts imply that understanding youth gambling may be best achieved through a focus on individual youth characteristics, local neighbourhood features including social resources and norms (and inequalities in these resources), and youth perceptions about gambling and gambling opportunities in these local environments. Both MacIntyre et al. (2002) and Galster and Killen's (2002) frameworks analyzed individual characteristics through a combination of self-reported data on the phenomenon in question as well as an exploration of perceptions individuals hold about that issue.

2.4 SUMMARY

This chapter presented youth gambling as an emerging public health issue that can be effectively understood through the population health

framework and from within the discipline of health geography. The review of health geography summarized the shift in focus from identifying patterns of health to understanding why health patterns exist and how undesirable or unjust processes and patterns may be remediated. Contemporary health geography research places greater emphasis on the values, perceptions and experiences of individuals and groups as important factors in understanding health and health determinants. Health geographers increasingly stress how place matters for health by providing a range of opportunities for individual experience, action and behaviour.

The review of public health efforts described a traditional focus on structural features of society as a way to understand the health of populations. Public health interventions thus typically sought to modify environments to improve health. The health promotion movement on the other hand emerged with a focus on individual behaviour change to prevent the future onset of illness and disease. Early health promotion efforts were criticized for placing blame and responsibility on individuals for their role in health and neglecting the broader environmental circumstances in which individual and group behaviours develop. The population health approach was developed partially in reaction to health promotion and an over-emphasis on individuals. Instead, population health seeks to understand the complexity of the social-embeddedness of health behaviours and the social inequalities and inequities that perpetuate differences in health status within and between populations.

Concerning youth gambling, the impacts that recent gambling expansion in social and physical environments has on impressionable youth are still largely unknown. What is clear is that youth are growing up in environments where gambling has become increasingly prevalent and common and much more so than in previous decades. Stinchfield and Winters (1998:173) note, “this is the first generation of youth to be exposed to such

widespread and easy access to a variety of gambling venues, gambling advertising, and general social approval for an inherently risky activity that was once prohibited."

Population health and health geography both acknowledge multiple social health determinants and are both committed to transformative research that attempts to: improve the understanding of the role of the (social and physical) environment on population health, improve the understanding of dimensions and experiences of health, expose inequalities and unjust power relations that perpetuate health disparities and, identify how health inequalities may be remediated. Health issues like gambling can be considered geographical issues given that gambling is embedded in social and physical environments, and there is a growing recognition that inequalities exist in access to and participation in gambling activities. This thesis thus draws on health geography and population health to better understand the role of individual and socio-environmental factors in influencing youth gambling and VLT gambling, and identify opportunities for interventions where altering environments to reduce gambling and promote youth health may be best achieved.

CHAPTER THREE
INDIVIDUAL AND ENVIRONMENTAL INFLUENCES ON YOUTH VLT GAMBLING IN MONTREAL

This chapter is the first empirical research paper of the dissertation. It addresses the first two dissertation objectives: To describe the socio-spatial distribution of gambling opportunities surrounding high schools in Montreal using geo-spatial data; and, to model VLT use by youth in Montreal as a function of individual and socio-contextual characteristics (including VLT accessibility), from survey data. A condensed version of this manuscript was lead-authored by the author of this dissertation and was published in the Canadian Journal of Public Health in 2005[23].

3.1 INTRODUCTION

Gambling is a risky behaviour that involves uncertain financial outcomes, can be highly addictive, and has been associated with strongly adverse social and health outcomes (Shaffer & Hall 2001, Korn 2000, Korn & Shaffer 1999, Campbell & Smith 1998). Problem gambling has been linked to a number of health-related problems, both physical and psychological, as well as social, familial and financial difficulties (Delfabbro et al. 2006, Hodgins et al. 2006, Langhinrichsen-Rohling 2004, Lynch et al. 2004, Marshall & Wynne 2003, Potenza et al. 2002, Shaffer & Korn 2002, Stewart et al. 2002). Adverse effects endured by problem gamblers are also often experienced among members of their social network (i.e., family, friends, employers, community members and public and social/health service employees) (National Council of Welfare 1996, Politzer et al. 1992).

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23 The publication was part of a student award (Doctoral Population and Public Health Student Award) granted at the Canadian Public Health Association's annual conference in 2005. The award was jointly sponsored by the Institute of Public and Population Health

In 2002, over 75 percent of Canadians reported gambling in the past year, and for five percent of Canadians, gambling was a problem or a potential problem (Marshall & Wynne 2003). Regulatory changes in 1985 and subsequent growth and technological innovations among gambling operations have kept Canadians exposed to a diverse and continually evolving array of commercial gambling activities and sanctioned venues. The introduction of technologically advanced gambling activities like video lottery terminals (VLTs) and internet gambling[24] has revolutionized the appeal and access of gambling activities (Korn 2002, Shaffer & Korn 2002, Eadington 1997).

Video lotteries are electronic gambling machines that offer customers the choice of several fast-paced games through an on-screen menu. They provide visual and audio effects and typically require low-levels of previous skill to play such as line-up games and draw poker (Turner & Horbay 2004, Smitheringale 2003). Activities like VLTs have similarities to video games including an interactive setting and rapid feedback between the user and machine, intermittent rewards, and audio and visual stimulation, which may be especially appealing for youth who are typically familiar with video games (Wood et al. 2004). Indeed, a recent study revealed that youth problem gamblers were more likely to have been video game players before than non-problem gamblers and non-gamblers (Wood et al. 2004).

Increased diversity and distribution of gambling activities across communities is a growing concern for impressionable youth. Results from the CCHS in 2002 revealed that one half of males and one third of females below the legal gambling age reported gambling in the past year across Canada (Marshall & Wynne 2003). Other studies reveal gambling prevalence to be

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(IPPH), the Canadian Public Health Association (CPHA), the Canadian Public Health Initiative (CPHI) and the Public Health Agency of Canada (Appendix A).

24 It should be noted that internet gambling is not currently one of the legalized gambling activities sanctioned in Canada.

higher among youth than adults (Messerlian et al. 2005, Shaffer & Hall 2001). The popularity of gambling among youth and the documented adverse impacts of problem gambling is a health concern for youth of today and future adult populations (Messerlian et al. 2005, Derevensky et al. 2004, Jacobs 2004, Langhinrichsen-Rohling 2004, Shaffer & Korn 2002, Schissel 2002, Korn 2000, Stinchfield & Winters 1998, Poulin 2000).

Since their legalization in Quebec in 1992 and implementation in 1994 the video lottery system has grown into a network of 14,007 VLTs in 2006 distributed among 3267 sites throughout the province (Loto-Quebec 2006). Quebec has the most VLTs per province in Canada and video lotteries are currently among the most popular and controversial gambling activities in the province. Video lotteries have consistently been Loto-Quebec's[25] most profitable sector next to the lottery system since legalization and VLTs generate approximately one third of Loto-Quebec's total revenue income and one half of its annual profits (Loto-Quebec 2004). The video lottery system in Quebec accumulated nearly 1.3 billion dollars of revenue in the 2005-2006 fiscal year (Loto-Quebec 2006). Youth in Quebec may find VLTs particularly appealing if they are abundant among home and school neighbourhood landscapes since they have similar characteristics as childhood video and computer games (Smitheringale 2003). Although minors (i.e., under 18 years in Quebec and under 19 elsewhere in Canada) are legally restricted from VLT gambling and participating in other gambling activities, studies have suggested that access to VLTs among youth is possible due to negligent enforcement at VLT sites (Jacobs 2004).

Research on addictive risky behaviours (like gambling) suggests that youth are an underserved and under-researched population with unique

25 Loto-Quebec is the provincially established organization that manages gambling activities in the province of Quebec (Loto-Quebec, 2004).

characteristics and needs (Bradizza & Stasiwicz 1999). Youth are often considered vulnerable from the stand point that they are impressionable, and youth in Quebec may be an especially vulnerable group. For example, in Quebec, in 1996 suicide (e.g., suicide listed as first cause of death) accounted for nearly 40% of youth deaths (between the ages of 15 and 18) (Farand et al. 2004). Further, suicide rates in Quebec are among the highest of Canadian provinces (Farand et al. 2004). As noted previously, gambling activities have been associated with a number of health-related outcomes including suicide, and thus youth in Quebec may be particularly vulnerable to the negative consequences of gambling.

Montreal is the second largest urban centre in Canada with a population of over 3.6 million people in 2006 (Statistics Canada 2006). It is a cosmopolitan place, with diverse socio-economic conditions across neighbourhoods (Ross et al. 2004). Neighbourhoods in Montreal are also marked by dramatic health disparities including life expectancy differences of more than 10 years between community health centre territories (*Regie Regionale de la Sante et des Services Sociaux de Montreal-Centre* 2002). Gambling activities are entrenched in Montreal's cultural history and contemporary social life. Nearly one third of VLTs in Quebec are located in Montreal (Loto-Quebec 2006).

The commonness of gambling in Quebec culture and abundance of gambling opportunities like VLTs in places like Montreal may have a large influence on the development of gambling behaviours among youth. Much research on risky health-related behaviours emphasizes the role of individual characteristics in youth behaviours, however, there has been less emphasis on understanding the broader contexts (e.g., social trends, environmental settings) in which health-related behavioural decisions are made (Reyna & Farley 2006, Swart et al. 2006, Currie et al. 2004, Welte et al. 2004, Wakefield et al. 2003, Korn 2000, Yen & Syme 1999). This study considers

youth gambling, and VLT gambling specifically, in Montreal as a product of the individual characteristics of youth as well as the social and physical environments that support gambling activities.

Preceding this analysis, Gilliland and Ross (2005) found an increased concentration of VLT machines in poorer neighbourhoods relative to more affluent places in Montreal and Laval. Their study suggested that poorer residents of Montreal and Laval who have the most to lose from the adverse impacts of gambling have the greatest access to VLTs. This present analysis considers if youth attending schools in disadvantaged neighbourhoods had greater access to VLTs in their school environments than students attending more affluent schools. The role of individual characteristics in VLT gambling among youth is also assessed. The specific objectives of this study were to: 1) describe the socio-spatial distribution of gambling opportunities surrounding high schools in Montreal using geo-spatial data, and, 2) model VLT use by youth in Montreal as a function of individual and socio-contextual characteristics (including VLT accessibility), from survey data.

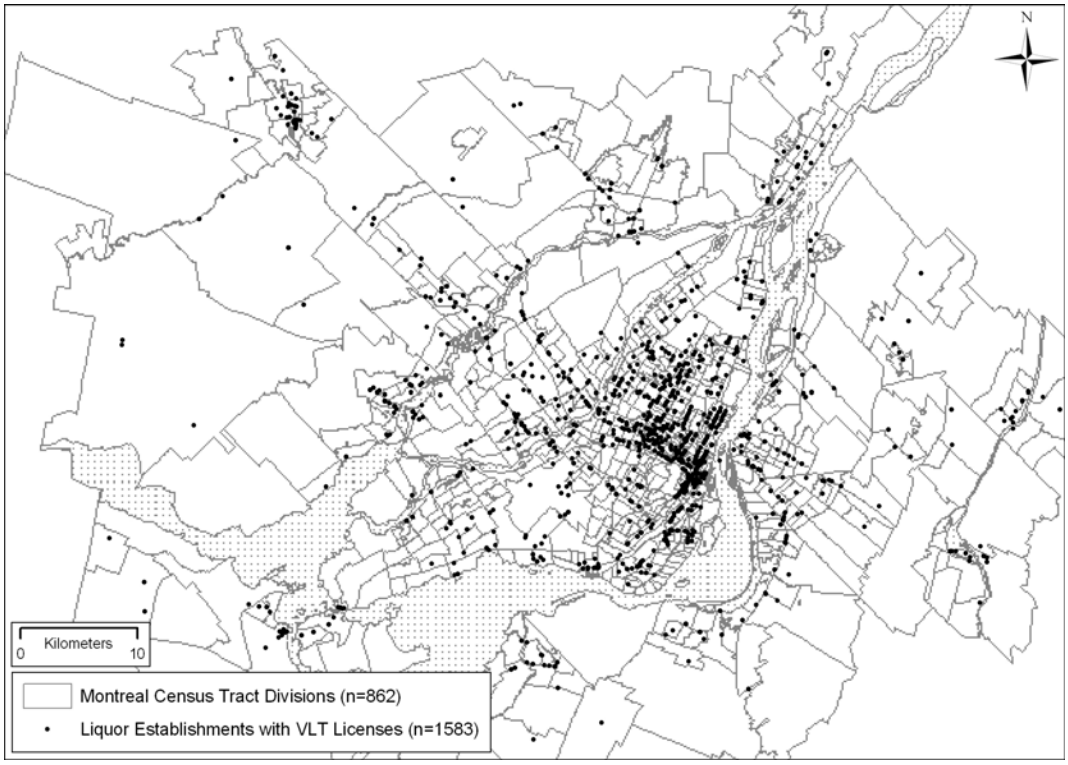
3.2 METHODS

Video lottery gambling opportunities of high school neighbourhoods were explored by linking neighbourhood socio-economic conditions with school and VLT locations in Montreal. A geographic information system (GIS) was created to explore the socio-economic conditions and VLT sites in high school neighbourhoods in the Montreal Census Metropolitan Area[26] (CMA). The listings of all liquor establishments with VLT licenses and secondary schools within the Montreal CMA were geocoded using GeoPinPoint [DMTI Spatial, Markham, Ontario, Canada] and ArcGIS [ESRI, Redlands, California, United

26 A CMA is defined by Statistic Canada (2006b) as one or more neighbouring municipalities that is situated around a major urban core. The neighbouring municipalities

States] software (Figure 3.1). VLT sites and high school locations were placed into census tracts[27] (CTs) (n=862) of the Montreal CMA. Census tracts in which secondary schools were located were assessed by exploring socio-economic conditions (i.e., median household income, proportion of residents with less than a high school diploma, proportion of residents who were visible minorities, proportion of residents who were recent immigrants) from the 2001 census data (Statistics Canada).

Figure 3.1: Map of all liquor establishments in the Montreal CMA with VLT licences in 2002



It should be noted that the home neighbourhood environments of students were also considered initially in this study, but were not included in

must total at least 100 000 people and at least 50 000 people must reside within the urban core.

27 Census tracts are small geographic units in large urban centres with an urban core of 50,000 or more delineated by Statistics Canada for measuring population characteristics. Each census tract typically has a population between 2500 and 8000 (Statistics Canada 2003).

the final analysis. Exploration of student home environments involved linking home postal code information obtained from students through the survey questionnaire to corresponding census tracts. Linking the home environments of students into the GIS involved matching the 6-digit (or minimum of 3 accurate digits) postal codes reported by students with corresponding census tracts (CTs) using ArcGIS version 8.3 [ESRI] software and Statistics Canada's Postal Code Conversion Files[28] (2002) (Figure 3.2). Boundary designations of student home neighbourhoods were evaluated in order to establish sensible neighbourhoods to represent the local home neighbourhood environments of the students who completed the survey. A systematic evaluation of established neighbourhood classifications prior to selecting one for analysis is a way of acknowledging and attempting to address the classic 'modifiable areal unit problem'[29] or MAUP (Heywood 1998).

Four neighbourhood schemes were evaluated as potential home neighbourhood environments for student survey respondents. Three of these were levels of geographic scale available through the census namely census tracts (CTs), census subdivisions (CSDs), and boroughs. The fourth was a

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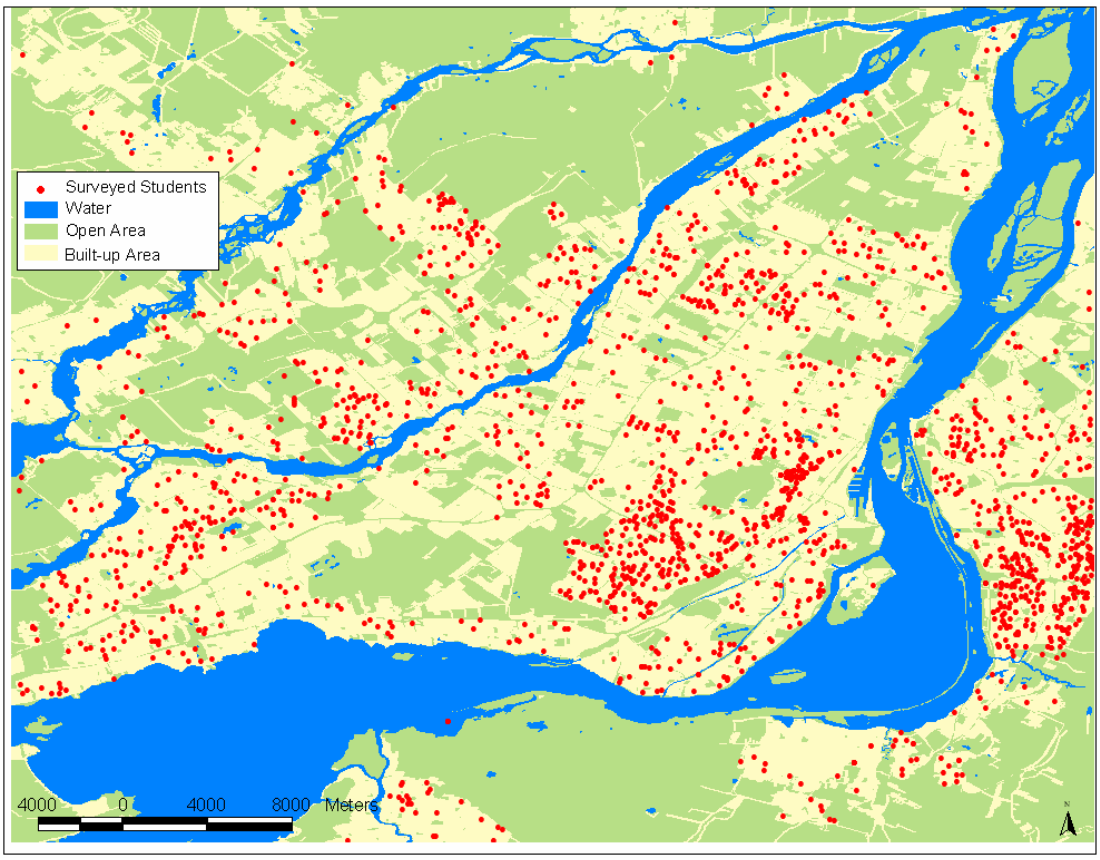
28 Statistics Canada's Postal Code Conversion File (PCCF) is a digital file that provides geographic coordinates to each postal code and enables a user to link six digit postal code data to geographical areas of Statistics Canada, including census data (Statistics Canada 2002).

29 The MAUP arises since relations between variables that are descriptive of an area can change depending on how areal units are selected for analysis. The effect that a particular set of spatial units has on the analyses is referred to as the MAUP. Arbitrary schemes for spatial units can threaten the reliability of analytic results, since the results are in part dependent upon how spatial units are defined and how data characterizing these units are aggregated. Two main issues are raised with the MAUP, namely 'scale' and 'zoning' effects. Scale effect refers to the aggregation of data and most commonly a loss of richness of data within units (i.e. indicators of neighbourhood social conditions) as level of resolution decreases with increasing spatial unit size. Zoning effects result from arbitrary or non-uniform spatial scaling of units (i.e. census tracts or enumeration areas), where virtually an infinite number of possible divisions exist that will influence results based on the selection of geographic boundaries (Heywood 1998).

previously constructed neighbourhood scheme in Montreal called natural neighbourhoods (See Ross et al. 2004). Neighbourhood classifications were assessed to consider the MAUP. Neighbourhoods were compared according to the distribution of students within each of the neighbourhoods, how many neighbourhoods had students proportional to how many did not, if neighbourhoods reflected similar social conditions and may represent student home neighbourhoods (Table 3.1).

Figure 3.2: Map of distribution of students from survey linked into CTs from postal code data



Limitations including the sampling of schools based on school participation, difficulties in establishing a balance between a reasonable number of students per neighbourhood classification (for statistical analysis), and achieving a balance in the ratio of neighbourhoods with students to neighbourhoods without students resulted in student home neighbourhoods being left out of the final analysis.

Table 3.1 Four classification schemes for student neighbourhoods

	Census Tract	Census Subdivision	Borough	Natural Neighbourhood
Number of neighbourhoods	852	67	49	118
Neighbourhoods with students	268	45	34	47
Neighbourhoods without students	483	22	15	71
Students without a neighbourhood	6	2	673	856
Geographical Scope	Montreal CMA	Montreal CMA	Montreal and Laval Islands	Montreal Island Only

Next, the role of individual and environmental factors in VLT gambling uptake was investigated by analyzing the gambling reported by students in the survey and the local VLT gambling opportunities in the school environments of those youth. A VLT concentration measure was included as well as a VLT access measure to examine individual youth gambling while considering the context of the local VLT opportunities in their school environments.

The VLT concentration measure was calculated for every high school neighbourhood. This involved counting VLT opportunities within 500m of school locations, to represent approximately a 10 minute walk for youth. ArcGIS software was used to create 500-m radius buffers around schools and provide a sum value for the number of VLT sites located within each buffer. In Frohlich et al.'s (2002) study on youth smoking behaviours, a similar buffering scheme (i.e., a 10-15 minute walking distance) was applied around school neighbourhoods to assess smoking-related opportunities. Each school was characterized as either high or low exposure using the VLT concentration measure (Table 3.2).

Table 3.2 Summary of school gambling rates, VLT exposure and VLT access variables

ID#	School Sample	% Gamblers in school sample	School Gambling Rates[a]	VLTs in 500m buffer	School VLT Exposure[b]	VLT Access score	School VLT Access[c]
109	33	30.3	Low	0	Low	0.90	Low
21	209	46.9	Low	0	Low	3.40	High
20	107	50.5	Low	2	Low	5.40	High
113	144	57.6	High	0	Low	6.80	High
103	341	59.2	High	0	Low	0.90	Low
107	165	60.6	High	0	Low	4.70	High
102	105	62.9	High	1	Low	1.90	Low
112	102	71.6	High	4	High	2.40	Low

[a]School gambling rates calculated from individual school samples. "High" school gambling rates was designated for those schools where over half of the students sampled in the school reported gambling in the past year, while "low" school gambling rates was designated to schools where less than half of the students sampled reported gambling in the past year.

[b]School VLT exposure calculated from number of VLTs in 500m buffer surrounding schools. "High" VLT exposure was designated to schools with four or more VLT licenses within 500m of the school location, while "low" exposure was designated to schools with less than four VLTs within 500m.

[c]School VLT Access calculated from availability of VLTs in the first ten closest bars surrounding schools. "High" VLT access was designated to schools with an access score of three or more, while "low" exposure was designated to schools with an access score less than three.

The environmental access measure for VLTs was aimed to capture proximal density as well as regularity or commonness of VLTs relative to the occurrence of liquor establishments. Since VLT licenses are voluntary for bar owners, VLT access will not necessarily be high in an area unless these establishments have obtained VLT licenses. By assessing the ratio of liquor licences in an area with and without VLT licenses, it may be possible to gain an appreciation of how common and accepted VLTs are in a given area. This type of assessment of neighbourhood VLTs may provide an evaluation of how

normalized or acceptable VLT gambling might be in particular neighbourhoods, than the VLT concentration measure.

To create the VLT access measure, a spatial interaction model based on straight-line distances between secondary school (n=8) postal code centroids and VLT locations was used (Brown 2005). Video lottery terminal access was calculated by considering the number of VLT licenses (0, 1 or multiple) at the 10 nearest bars to the school's 6-digit postal code. The VLT access of each school was calculated by summing the product of a distance weight (starting at 1 for the closest VLT and decreasing in steps of 1/10 until the weight reaches 0, at the 11th VLT) and a VLT score (0 for bars with no VLT license, 1 for bars with a single license and 2 for bars with more than a single license) (Table 3.3.). Each school was characterized as either high or low access using this measure (Table 3.2).

Table 3.3. Example of VLT access calculation

Liquor-licensed establishments surrounding schools	Distance Weight	VLT scores for Scenario 1	VLT scores for Scenario 2	VLT scores for Scenario 3
1 (first bar)	1.0	2	1	0
2 (second bar)	0.9	1.8	0.9	0
3 (third bar)	0.8	1.6	0.8	0
4 (fourth bar)	0.7	1.4	0.7	0
5 (fifth bar)	0.6	1.2	0.6	0
6 (sixth bar)	0.5	1	0.5	0
7 (seventh bar)	0.4	0.8	0.4	0
8 (eighth bar)	0.3	0.6	0.3	0
9 (ninth bar)	0.2	0.4	0.2	0
10 (tenth bar)	0.1	0.2	0.1	0
School VLT access score		11	5.5	0
Scenario 1 - More than one VLT license at every one of the 10 closest liquor-licensed establishments surrounding schools.				
Scenario 2 - One VLT license at every one of the 10 closest liquor-licensed establishments surrounding schools.				
Scenario 3 - Zero VLT licenses at every one of the 10 closest liquor-licensed establishments surrounding school.				

Univariate and multivariate statistical analyses using the computer software SPSS [version 13.0] were conducted to provide a summary of gambling trends and attitudes reported among the sample. Descriptive analyses were performed separately for the full youth sample (i.e., students under 25 years of age), high school students, youth at or above the legal gambling age, and youth minors. Multiple logistic regression models[30] were used to model VLT use (using a dichotomous variable of VLT use in the past 12 months, yes or no). Explanatory variables included: sex; age; health-related behaviours (whether or not the student had smoked, used marijuana or other drugs (i.e., cocaine, speed, gamma hydroxybutytrate (GHB), ecstasy), or consumed alcohol in the past 12 months; peer/friend gambling; peer/friend VLT gambling; daily mode of transportation between school and home (i.e., walk, bike, school bus, public transit, private car); whether or not the student returns home directly after school; part-time employment or not; the gambling of students at the school in which youth attend[31]; the VLT access measure described above; and, the VLT concentration measure of VLTs within the 500m buffer of each school.

3.2.1 Data Sources

Addresses and the number of VLT licenses for all liquor establishments in 2002 were obtained for the province of Quebec from the *Régie des alcools, des courses et des jeux* (RACJ), the provincial department that oversees gambling operations. School listings and addresses for the province of Quebec were obtained from the *Ministère de l'Éducation* in 2002. Demographic data

30 Logistic regression models are models for binary response variables that have only two outcome possibilities (i.e., VLT use in the last 12 months, yes or no) (Agresti & Finlay 1997). A logistic regression model describes how the proportion of a given outcome, like VLT use in the last 12 months, among a sample of students for example, depends on some number of explanatory variables, like gender, age, peer gambling behaviours.

for the Montreal CMA was obtained at the census tract level from the 2001 Canadian Census, provided by Statistics Canada.

Information about the gambling of students (n=2615) between the ages of 12 and 24 was obtained from a larger survey (n=2672; 1540F, 1132M) of youth. The youth sample was drawn from 17 schools that agreed to participate in the study including eight middle and high schools, six *Collège d'enseignement général et professionnels* (CEGEPs[32]), and three universities across Montreal. Five schools (two middle schools, one CEGEP, and one University) were officially French speaking, while the rest were English. Surveys were provided in the language the students were comfortable in for a total of 2142 English and 530 French completed surveys. The response rate was 97% (Byrne et al. 2004).

The survey was developed by researchers at the International Centre for Youth Gambling Problems and High-Risk Behaviours[33] in collaboration with three researchers affiliated with the Department of Geography[34] at McGill University. The student survey examined a range of demographic characteristics and explored a variety of gambling and related behaviours and preferences[35]. Information about gambling activities and daily habits was solicited from the student sample, including the frequency of participation in fifteen specific gambling activities (Table 3.4). Students were asked to report how often they had engaged in each of the fifteen activities in the last twelve

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31 See Table 3.2 for a description of the school gambling behaviours variable.

32 CEGEPs are educational institutions unique to Quebec that offer technical degree programs or serve as a precursor to university-level undergraduate training.

33 The survey was part of a larger on-going research program at the International Centre for Youth Gambling Problems and High-Risk Behaviours at McGill University directed by Drs Jeffrey Derevensky and Rina Gupta.

34 Twelve survey items focusing on VLTs were developed by Drs Jason Gilliland, Nancy Ross and grad34 See Appendix B for a complete list of survey items.uate student Dana Wilson (author of thesis).

months (i.e., never, less than once a month, 1-3 times a month, once a week or more), and were also requested to list any other gambling activities that they had ever participated in for monetary stakes. Gambling activities were defined as those games played for money stakes, rather than games played for fun.

Table 3.4. Gambling activities queried in student survey

Bingo
Cards
Casino table games (e.g., Blackjack, poker)
Dice/craps
Electronic gaming machines (e.g., VLT, video poker)
Horse racing
Jai Lai
Lottery scratch cards/pull tabs
Lottery draws (e.g., Lotto 6/49)
Maj Jong
Slot machines
Sports betting
Sports betting through the lottery (e.g., "Mise-O-Jeu™")
Spread betting
Stock market

The survey also asked about age of first gamble, motivations to gamble (i.e., fun, excitement, entertainment, relieve boredom, make money), and gambling accompaniment (i.e., gamble alone, with friends, parents, siblings/relatives, co-workers, strangers). Twelve items queried youth specifically about VLTs and these included: the daily duration and mode of transport between school and home, daily lunch break and after school activities, VLT awareness and perceived access and use in local neighbourhoods, individual and peer participation (including frequency and time of gamble). Additional topics assessed in the survey included demographic characteristics (gender, age, and academic level), and participation in other risk-taking activities (tobacco, alcohol and drug use).

Schools that agreed to participate in the study were sent information packages about the research and invitations for students to participate

including parental consent forms and copies of the ethics approval form[36]. Follow-up phone calls were made to confirm interest and participation in the research. Data collection occurred over a six month period beginning in November 2003. Surveys were group administered usually in a classroom and in two cases were conducted in the school library. The author (Dana Wilson) was present in the schools for some of the data collection and assisted in data cleaning of the survey results.

Prior to survey administration student participants were reassured that their participation was voluntary and withdrawal from participating could occur at any time without penalty. Each student participant filled out their questionnaire independently and was assured confidentiality in their responses. Research assistants affiliated with the project were present during the questionnaire administration and answered questions when necessary. The average time to complete questionnaires was 30 minutes. Upon completion of data collection, each questionnaire was assigned a unique identification number to ensure consistency in reporting as well as anonymity. Questionnaires were scanned[37] to record responses and converted to an electronic data file for statistical analysis.

3.3 RESULTS

3.3.1. VLT opportunities in youth environments

High schools located in the inner city of Montreal typically provide the greatest VLT accessibility to their student populations with large numbers (4 or more) of VLT gambling sites located nearby (Figure 3.3). In contrast, most

36 Ethics approval for the survey was obtained through the International Centre for Youth Gambling Problems and High-Risk Behaviours at McGill. See Byrne (2004) for copy of ethics approval form.

37 Questionnaires were scanned using a Fujitsu Scan Partner (620C) and the software program Remark Optical Mark Recognition Remark (OMR) [version 5.5].

of the high schools in the suburban areas in Montreal had fewer (typically zero) VLTs within walking distance. There were greater VLT opportunities in economically disadvantaged high school neighbourhoods across Montreal schools than in affluent school neighbourhoods. Thus, students attending schools in inner city or economically disadvantaged neighbourhoods are much more likely to encounter VLTs during their daily school routines (within 500m of the school they attend) than those students attending schools in suburban and economically advantaged neighbourhoods. Indeed, analyses of VLT opportunities by high school neighbourhood income show that as the median household income of the school neighbourhood decreases, the number of VLTs within 500m of high schools increases in gradient-like fashion (Figure 3.4).

Figure 3.3. Concentration of VLT sites within 500m of high school locations and neighbourhood median household income

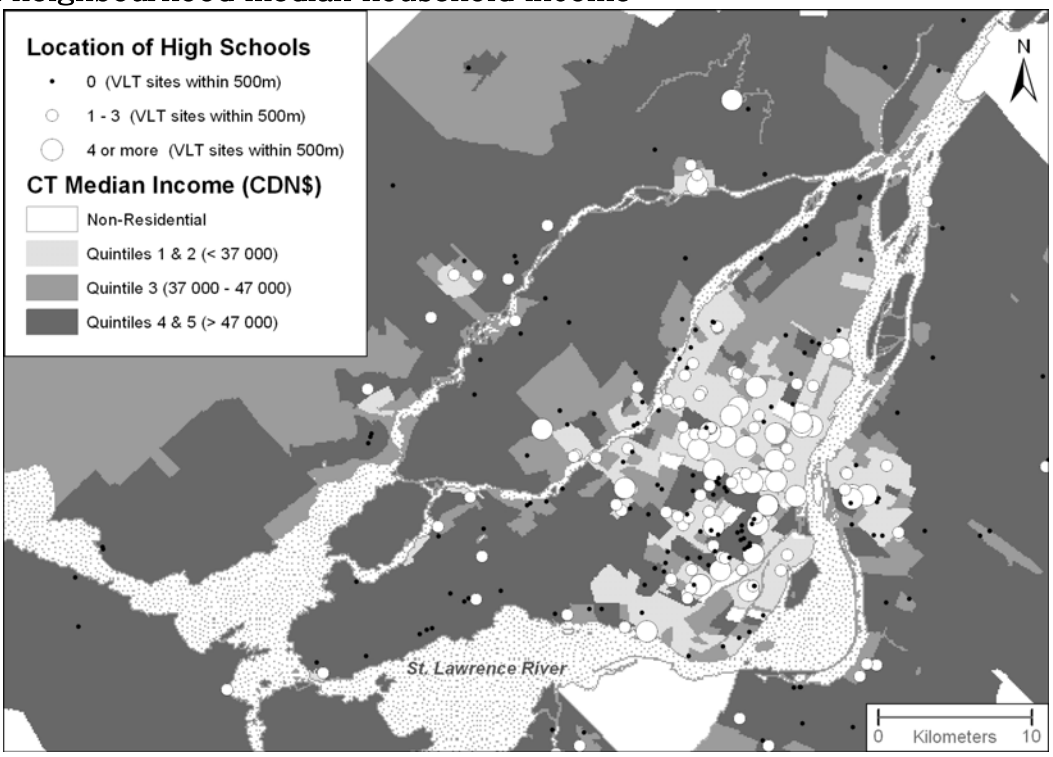
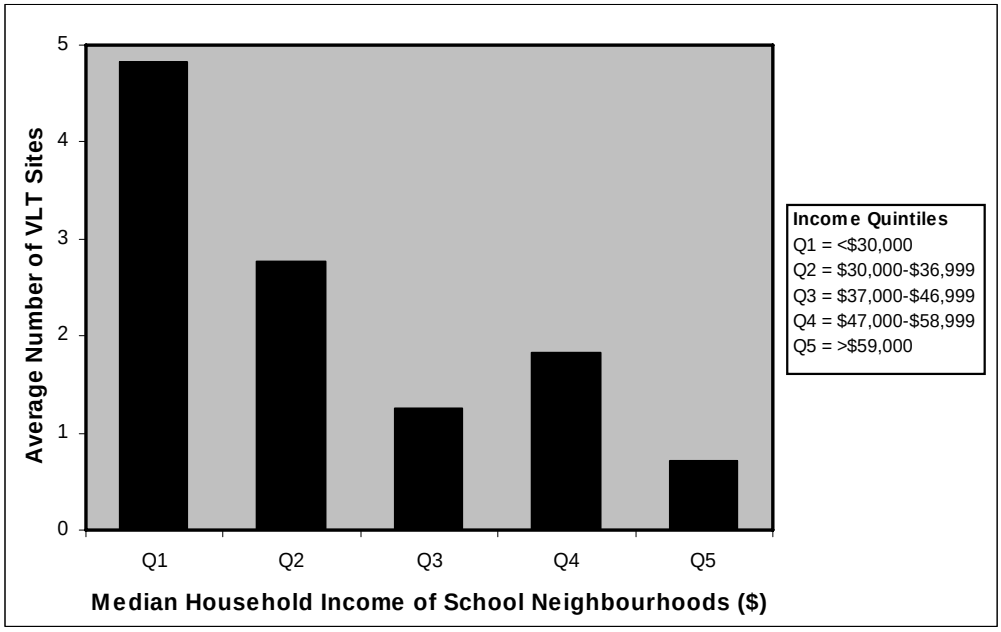


Figure 3.4. VLT opportunities decline with increasing school neighbourhood affluence



3.3.2 VLT gambling and related behaviours of youth under 25

Student participants under 25 years of age included a total of 2615 youth (1499F, 1116M). Student ages and academic level ranged from 12–24 years old from grade seven to university. Roughly one half were attending middle or high schools and the other half were attending CEGEPs or university at the time of the survey (Table 3.5). Sixty percent of students who completed the survey reported having gambled in the last twelve months and nearly the same proportion reported having friends who gamble. Nearly ten percent of youth sampled reported gambling on a weekly basis. Surprisingly, slightly more females reported gambling than males, although there were greater numbers of females (57.3%) in the sample. Nearly one half of youth reported gambling with friends. Over one half of youth reported gambling for fun and approximately one third reported gambling for money, entertainment and excitement.

Table 3.5: Descriptive characteristics of students under 25 years (n=2615)

	% of Full youth sample (n=2615)	% of Gamblers (n=1571)	% of VLT Users (n=320)
Male	42.7	47	58.4
Female	57.3	53	41.6
Age (years)			
12-13	8.4	6.4	4.1
14-15	20.6	19.2	13.4
16-17	25.9	26.9	25.0
18-20	35.1	38.1	45.6
21-24	10.1	9.5	11.9
Grade 7/8	12.5	10.2	6.9
Grade 9-12	33.7	33.4	28.4
CEGEP	40.4	44.5	51.3
University	13.4	11.9	13.4
Other Behaviours			
Drink	75.2	82.8	90.6
Smoke	35.5	41.8	60.6
Use Marijuana	32.5	39.0	57.8
Use other drugs	7.6	9.4	16.9
Friends Gamble	59.2	75.4	92.2
Friends Play VLTs	30.3	39.9	71.9
Gambling Behaviours			
Has gambled in past year	60.0	100.0	100.0
Gambles weekly	9.4	14.8	30.0
Gamble with friend	49	67.7	85
Gamble with family members	31.5	41.4	36.9
Gamble with co-workers	4.6	6.8	10.3
Gamble with strangers	1.8	2.5	5.9
Gamble alone	12.3	17.2	21.6
Gambling Motivation			
Gamble for fun	52.8	71.7	71.9
Gamble for money	33	46.8	55.3
Gamble for entertainment	32.5	44.7	53.8
Gamble for excitement	27.3	37.7	44.1
Gamble to be with/make friends	12.2	16.4	17.8
Gamble to relieve boredom	9	12.4	15.6
Part-time employment	5.6	6.9	11.3
After School Destination			
Directly Home	80	78.8	67.8
Friend's house	5.4	6.7	9.4
Work	4.5	5.6	6.3
Mall	1.3	1.2	0.9
Downtown	1.5	1.8	3.8
Restaurant	0.7	0.9	1.9

Roughly twelve percent of youth reported using VLTs and nearly one third reported that their friends use VLTs. Three quarters of youth reported alcohol use in the past year and approximately one third reported smoking and marijuana use.

3.3.3 VLT gambling and related behaviours of high school students

High school participants included a total of 1206 youth (606F, 600M) from grade seven to grade twelve (age range 12–20 years old) drawn from eight schools (Table 3.6). The largest proportion of high school students was between the ages of 14-15, followed by 16-17 year olds and then 12-13 year olds. Very few high school students in the sample had reached 18 years, the legal age of gambling in Quebec. Over one half of high school students reported alcohol use in the past year and approximately one quarter reported smoking and marijuana use. Over sixty percent of high school students reported having gambled in the last twelve months and nearly one half reported having friends who gamble. Roughly twelve percent of youth reported gambling on a weekly basis. More males reported gambling than females. Youth reported gambling with friends and family most often and listed gambling for fun as the primary reason to gamble, followed by money, entertainment and excitement. Nearly ten percent of high school students reported using VLTs and over one fifth reported that their friends use VLTs.

Of those high school students (n=113) reporting that they had played VLTs in the last twelve months, almost seventy percent were males. Nearly one half reported gambling on a weekly basis. Over eighty percent of VLT players consumed alcohol in the past twelve months, and over half smoked or used drugs in the past year. The majority of VLT users reported gambling with their friends and over sixty percent reported that their friends also play VLTs. Roughly one half of VLT players reported going to a destination other than home directly after school. Over three quarters of VLT users listed fun as a reason to gamble, sixty percent reported gambling for money and almost

one half reported gambling for entertainment. Over twelve percent of VLT users reported gambling alone and nearly ten percent reported gambling with strangers.

3.3.4 Gambling and related behaviours of youth above and below the legal gambling age

A higher proportion of youth below the legal gambling age were males, while those 18 years of age and older were almost evenly split between males and females (Table 3.7). Minors less often reported substance use (i.e., smoking, alcohol and marijuana use) than those above the legal gambling age except for 'other' drug use (i.e., cocaine, speed, GHB, ecstasy). Minors also reported gambling weekly more than double that of youth eighteen years and older, and also reported gambling with family members and strangers more often, while those youth eighteen and older reported gambling alone nearly twice as often as minors. Examining motivations for gambling, all youth reported gambling for fun most often, and minors reported gambling for money second most often, while older youth reported gambling for entertainment more than for money.

Table 3.6. Descriptive characteristics of high school sample (n=1206)

	% of full youth sample (n=1206)	% of Gamblers (n=686)	% of VLT Users (n=113)
Male	49.8	54.8	69.9
Female	50.2	45.2	30.1
Age (years)			
12-13	18.2	14.4	11.5
14-15	44.6	43.7	38.1
16-17	34.9	39.5	45.1
18+	2.3	2.3	5.3
Grade 7/8	27.0	23.3	19.5
Grade 9-12	73.0	76.7	80.5
Other Behaviours			
Drink	58.4	70.3	81.4
Smoke	28.3	35.3	54.0
Use Marijuana	23.5	30.5	55.8
Use other drugs	6.5	8.9	18.6
Friends Gamble	49.3	68.2	87.6
Friends Play VLTs	20.6	27.7	62.8
Gambling Behaviours			
Has gambled in past year	61.7	100	100
Gambles weekly	11.5	19.1	46.0
Gamble with friend	43.7	63.0	83.2
Gamble with family members	36.3	52.2	53.1
Gamble with co-workers	3.7	5.2	9.7
Gamble with strangers	2.1	2.6	9.7
Gamble alone	6.5	9.2	12.4
Gambling Motivation			
Gamble for fun	51.1	73.8	76.1
Gamble for money	31.7	47.2	60.2
Gamble for entertainment	26.1	39.1	49.6
Gamble for excitement	23.1	34.0	37.2
Gamble to be with/make friends	9.7	13.7	15.9
Gamble to relieve boredom	10.9	15.5	17.7
Part-time employment	2.7	3.8	9.7
After School Destination			
Directly Home	81.3	77.0	54.0
Friend's house	7.2	9.0	16.8
Work	2.5	3.4	5.3
Mall	1.4	1.0	0.9
Downtown	1.2	1.5	5.3
Restaurant	0.9	1.0	1.8

Table 3.7. Descriptive characteristics of legal and illegal VLT players

	% of VLT users (n=320)	% of VLT users below 18 years (n=136)	VLT Users 18 years or older (n=184)
Male	41.6	69.1	50.5
Female	58.4	30.9	49.5
Other Behaviours			
Drinks alcohol	90.6	84.6	95.1
Alcohol weekly	17.5	11.0	22.3
Smokes	60.6	59.6	61.4
Tobacco weekly	22.5	18.4	25.5
Uses marijuana	57.8	54.4	60.3
Marijuana weekly	11.9	9.6	13.6
Uses other drugs	16.9	17.6	16.3
Other drugs weekly	1.3	2.9	0.0
Gambling Behaviours			
Gambles Weekly	30	43.4	20.1
Friends Gamble on VLTs	71.9	63.2	78.3
Friends Gamble	92.2	88.2	95.1
Gamble with friend	85	84.6	85.3
Gamble with family members	36.9	47.1	29.3
Gamble with co-workers	10.3	10.3	10.3
Gamble with strangers	5.9	9.6	3.3
Gamble alone	21.6	14.0	27.2
Motivation to Gamble			
Gamble for fun	71.9	72.8	71.2
Gamble for money	55.3	62.5	50
Gamble for entertainment	53.8	51.5	55.4
Gamble for excitement	44.1	37.5	48.9
Gamble to be with/make friends	17.8	16.9	18.5
Gamble to relieve boredom	15.6	16.2	15.2
Part-time employment	11.3	10.3	12
After School Destination			
Directly Home	67.8	60.3	73.4
Friend's house	9.4	14.7	5.4
Work	6.3	5.1	7.1
Mall	0.9	1.5	0.5
Downtown	3.8	4.4	3.3
Restaurant	1.9	1.5	2.2

3.3.5 Modelling VLT use among youth

Logistic regression models predicting VLT use among high school students revealed that being male, the gambling and VLT gambling of friends and peers, experimentation with other risky behaviours like drug use, and after school routines strongly predicted VLT use (Table 3.8). Survey respondents reporting friends who use VLTs had nearly five and one half times (5.40***OR[38,39]) the odds of VLT use compared to those without friends using VLTs. Further, being male and travelling to another destination after school other than home increased the odds of high school students reporting VLT use by over two times (2.12**OR and 2.21***OR respectively) compared with females and those who go home after school. High school students who were attending schools where gambling was high among fellow students had a threefold increase in odds (3.01**OR) of reporting VLT use themselves, compared with those respondents in a school reporting low rates of gambling. Finally high school students who reported marijuana use in the last 12 months had nearly three and one half times (3.45***OR) greater odds of reporting VLT use compared with those reporting no marijuana use, and those reporting alcohol use had significantly higher odds of reporting VLT use (1.48OR) than those who abstained from alcohol.

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38 The odds ratio is the ratio of the probability of an event occurring in a first group such as males, to the probability of it occurring in a second group such as females. In this research the event is reporting VLT use in the past twelve months (Agresti & Finlay 1997). If an odds ratio is 1, this indicates that the event, VLT gambling, is equally likely to occur in both male and female groups. If the odds ratio is greater than 1, this indicates that VLT gambling is more likely to occur in the first group (males), than the second group (females) by the ratio indicated. Similarly if an odds ratio is less than 1, this indicates that the event of VLT gambling is less likely to occur in the first male group than the second female group.

39 *denotes statistical significance (* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$).

Table 3.8. Modelling VLT use among the high school sample (n=1206)

Outcome Variable Participates in Video Lottery Terminal Gambling (Yes, No+)		
Independent Variables	Odds Ratios	Confidence Intervals
Sex		
Males	2.12**	1.33, 3.39
Females+	1.00	…
Age Group		
18+	0.73	0.20, 2.72
16-17	0.70	0.32, 1.50
14-15	0.87	0.41, 1.82
12-13+	1.00	…
Friends Play VLTs		
Yes	5.40***	3.42, 8.52
No+	1.00	…
Home After School		
No	2.21**	1.38, 3.54
Yes+	1.00	…
School Gambling Behaviours		
High	3.01**	1.54, 5.90
Low+	1.00	…
Marijuana Use		
Yes	3.45***	2.09, 5.70
No+	1.00	…
Alcohol		
Yes	1.48	0.79, 2.75
No+	1.00	…
+Reference category	… Not applicable	
* $p < 0.05$	** $p < 0.01$	*** $p < 0.001$

Three common predictors of VLT use across the subgroups included friend VLT use, sex (male), and marijuana use (Table 3.9). Age did not generally influence the odds of VLT use reporting. Minors reporting having a part-time job had double (2.08OR) the odds of reporting VLT use than minors without part-time jobs. Comparing models of VLT use among minors with youth who are legally permitted to use VLTs, gender was found to play less of a role in predicting VLT use than in the minor sample (Table 3.10, Table 3.11). Specifically, males under the legal gambling age had over two and one third greater odds (2.35***OR) of reporting VLT use than female minors, while males above the legal gambling age had one and three quarters (1.75**OR) greater odds of reporting VLT use than females above the legal gambling age.

Explanatory variables examined in the analyses that were found to have little effect in predicting VLT use among all student subgroups included student age, daily mode of transportation between school and home, the VLT access measure and the VLT concentration measure in the immediate (i.e., 500m) vicinity of school locations.

Table 3.9. Modelling VLT use among the full student sample (n=2615)

Outcome Variable Participates in Video Lottery Terminal Gambling (Yes, No+)		
Independent Variables	Odds Ratios	Confidence Intervals
Sex		
Males	1.93***	1.49, 2.52
Females+	1.00	…
Age Group		
20-24	0.99	0.47, 2.11
18-20	0.90	0.45, 1.78
16-17	0.76	0.38, 1.54
14-15	0.96	0.47, 1.94
12-13+	1.00	…
Friends Play VLTs		
Yes	5.84***	4.40, 7.76
No+	1.00	…
Marijuana Use		
Yes	1.89***	1.41, 2.54
No+	1.00	…
Tobacco use		
Yes	1.67**	1.25, 2.24
No+	1.00	…
Alcohol		
Yes	1.51	0.94, 2.42
No+	1.00	…
Home After School		
No	1.62**	1.21, 2.18
Yes+	1.00	…
School Gambling Behaviours		
High	1.42	0.97, 2.07
Low+	1.00	…
+Reference category	… Not applicable	
* $p < 0.05$	** $p < 0.01$	*** $p < 0.001$

Table 3.10. Modelling VLT use among students above legal gambling age (n=1181)

Outcome Variable Participates in Video Lottery Terminal Gambling (Yes, No+)		
Independent Variables	Odds Ratios	Confidence Intervals
Sex		
Males	1.75**	1.24, 2.48
Females+	1.00	…
Age Group		
21-24	1.02	0.67, 1.56
18-20+	1.00	…
Friends Play VLTs		
Yes	5.37***	3.65, 7.90
No+	1.00	…
Home After School		
No	1.31	0.88, 1.96
Yes+	1.00	…
Marijuana Use		
Yes	1.72**	1.19, 2.50
No+	1.00	…
Tobacco Use		
Yes	1.72	1.18, 2.49
No+	1.00	…
Alcohol Use		
High	1.44	0.65, 3.16
Low+	1.00	…
+Reference category	… Not applicable	
* $p < 0.05$	** $p < 0.01$	*** $p < 0.001$

Table 3.11. Modelling VLT use among students below legal gambling age (n=1434)

Outcome Variable Participates in Video Lottery Terminal Gambling (Yes, No+)		
Independent Variables	Odds Ratios	Confidence Intervals
Sex		
Males	2.35***	1.55, 3.57
Females+	1.00	…
Age Group		
16-17	0.63	0.30, 1.32
14-15	0.92	0.44, 1.93
12-13+	1.00	…
Alcohol Use		
Yes	1.48	0.81, 2.72
No+	1.00	…
Friends Play VLTs		
Yes	5.73***	3.76, 8.71
No+	1.00	…
Home After School		
No	1.82*	1.16, 2.85
Yes+	1.00	…
Tobacco Use		
Yes	1.39	0.83, 2.31
No+	1.00	
School Gambling Behaviours		
High	2.91**	1.49, 5.67
Low+	1.00	…
Marijuana Use		
Yes	2.25**	1.37, 3.69
No+	1.00	…
Part-time employment		
Yes	2.08	0.96, 4.52
No+	1.00	…
+Reference category	… Not applicable	
* $p < 0.05$	** $p < 0.01$	*** $p < 0.001$

3.4 DISCUSSION AND CONCLUSION

High schools located in lower income and inner city neighbourhoods have more video lottery opportunities within a short walk (500m or less) than high schools located in higher income and suburban neighbourhoods in Montreal. Although many schools have VLTs within walking distance, those schools in low-income neighbourhoods tend to have higher concentrations of VLTs nearby. The distribution and accessibility of VLTs surrounding high schools in Montreal reflect socio-economically disadvantaged places.

The survey analyses revealed that youth are familiar with gambling and over one half have gambled in the past year and nearly one tenth gamble weekly. Youth gamble for fun, excitement and entertainment and most often with friends or family. Youth also know about VLTs; nearly one eighth have used a VLT in the past year. Infrequent or temporary risky behaviours are common during adolescence, and gambling experimentation may also not pose a great health risk to most youth. Rates of gambling among youth, however, were high relative to other risky health-related behaviours like alcohol consumption, smoking and drug use.

As youth approach their late teens they typically have more autonomy. Upon reaching 18 years of age, youth complete secondary (high school) education and often move to a new place of residence, sometimes exclusive of immediate family members, for post secondary training at a CEGEP. At this age, normative behaviours that will follow youth into their adult years have already begun forming. For example, research on related health behaviours among youth like smoking have illustrated that engaging in risky health-related behaviours at an early age are strong predictors of long lasting participation through adulthood (Chassin et al. 1990). While experimentation with smoking does not necessarily translate into smoking in adulthood, it is nonetheless an indicator of the development of future smoking behaviours (Frohlich et al. 2002, Choi et al. 1997, Jackson et al. 1998). Thus those

students with greater access to and experimentation with gambling may be more prone to becoming future gamblers and experience gambling-related problems in adulthood.

The model for predicting VLT use among high school students begins to paint a picture of a VLT user who is more likely to be male and who is in a period of engaging in multiple risky behaviours such as marijuana use, drinking, and smoking. This high school gambler typically travels to another destination such as a friend's house before returning home on a daily basis, and he is much more likely to have friends who also use VLTs. The VLT user typically attends a school where student gambling behaviours are high or where gambling is more generally accepted among the student population. Models for predicting VLT use among other subgroups of the sample (above and below the legal gambling age) revealed three common predictors of VLT use including friend VLT use, sex (male), and marijuana use. Minors specifically reporting having a part-time job had two times greater odds of reporting VLT use than minors without part-time jobs. These findings suggest that the behaviours of friends, school peer norms, and after-school activities (like employment or travelling to non-home destinations) may influence the development of youth gambling behaviours.

A number of theories have been developed to explain individual behaviours that consider the role of socio-cultural processes in individual decision-making. Ajzen and Fishbein's (1980) theory of planned behaviour (TPB) is based on the premise that the intentions of an individual to engage in a given behaviour immediately precede and influence the outcome of whether or not the behaviour is performed by the individual. The TPB focuses on the *behavioural intentions* of individuals and factors influencing those intentions including, the attitude of the individual (e.g., positive or negative) towards the behaviour in question, an individual's perceived norms or *subjective norms* and beliefs about the behaviour including social pressures,

expectations or standards concerning the behaviour set by influential members in an individual's social, and the ease or feasibility of performing the behaviour or the *perceived behavioural control*, as viewed by the individual (Madden et al. 1992).

The study did not assess individual behavioural intentions with respect to gambling directly, however, applications of the TPB examining youth smoking behaviours found subjective norms to have the greatest influence on behavioural intentions and subsequent smoking behaviours (Moan & Rise 2006). Subjective norms (i.e., normative behaviours, culture) may indeed play a large role in influencing individual VLT gambling intentions and resulting behaviours. Youth reported gambling with friends and family members. Gambling of fellow school peers and friends and family members may point to the local norms supporting VLT use and serve as a signal to youth that gambling is a socially acceptable behaviour.

These findings are also consistent with related research on the role of family and peers in influencing other risky behaviours (Delfabbro et al. 2006, Lynch et al. 2004, Morrongiello & Dawber 2004, Drukker et al. 2003, Kobus 2003, Wiium et al. 2006b). Further research into subjective norms, or the perceived social norms about gambling according to youth, may improve the existing understanding of youth gambling. Results about youth motivations to gamble and perceptions about gambling may point to the role of perceived behavioural control and individual intentions in influencing individual behaviours. For example, youth VLT users reported playing for money more often than regular gamblers did. This may suggest that some youth believe that they possess greater skills or more control over VLTs, that VLTs are relatively easy to use, or even that VLTs are more profitable[40] than other

40 VLTs in Quebec have an average payout of 0.92$ on every dollar (Loto-Quebec 2007).

forms of gambling, making them more appealing to youth. Youth that consider VLTs to be easy to use or win at and a profitable hobby may perceive greater control over the machines and their ability to win from using them. Greater control over and confidence of VLTs may influence the intentions of youth to play more often, resulting in VLT users reporting playing for money more often than non-VLT users.

Large concentrations of VLTs in the immediate (i.e., 500m) or nearby vicinity (i.e., first ten liquor-licensed establishments) of school locations did not increase the odds of VLT use in this study. Being in a school environment, however, with a large proportion of gamblers was influential for VLT use, as was having friends who use VLTs. These findings point to localized gambling activities and norms in school settings and suggest that the commonness and acceptability of gambling may vary among areas and may be detected by differences in school population gambling attitudes. Although the study did not find a relationship between VLTs in school neighbourhoods and youth VLT gambling, the VLTs surrounding home and family environments were not assessed to determine if they might play a role in youth VLT participation. Other factors in home environments including parental or familial gambling were found to be related to youth gambling, since youth indicated gambling with parents. The role of home environments and parental influences may be further explored in future studies.

It should be noted that individual characteristics like male/female sex or friends gambling, or contextual measures like school gambling opportunities are unlikely to have independent influences on youth VLT gambling. Both the individual and contextual characteristics may influence youth VLT gambling directly or indirectly through their influence on other variables that were assessed (as well as others that were not assessed). For example results of this study found that the patterned behaviours of youth on their daily journey to and from school make a difference in the likelihood of

reporting VLT use. The VLT availability or acceptability at the destinations (e.g., leisure or employment driven destinations) that youth travel to after school on a day-to-day basis may play a greater role than the local VLT opportunities surrounding school locations. Youth travelling between home and school independently (like walking or taking public transit), or who travel to non-home destinations may have greater exposure and access to VLTs.

Video lottery terminals are highly localized and visible gambling commodities. Students passing areas with large numbers of VLTs on a daily basis on their way to and from school may have a greater risk of participating in VLT gambling. Those students who return home directly from school by school bus or parent or guardian escort may have less exposure, limited occasions and less temptation to use VLTs. Other factors to explore that may mediate the influence of school VLT opportunities or school gambling behaviours on youth gambling include school programs directed at gambling awareness, gambling advertising and the role of gambling in the media, gambling opportunities surrounding home environments and destinations frequented by youth including places of recreation or leisure, employment and the daily travel route between school and home.

The study found part-time employment among minors to increase the odds of reporting VLT use by over two times in contrast to minors without part-time employment. Part-time employment among youth may result in exposure to different (e.g. greater or less) local gambling opportunities surrounding the working environment. Gambling norms or beliefs of fellow co-workers, and the general work environment could also influence individual gambling uptake. Having a job may also provide additional disposable income for youth minors and present greater temptation or access to gamble. Further, part-time employment among minors may also reflect family socio-

economic characteristics and broader neighbourhood social conditions and gambling norms.

By way of limitations of the research presented here, it should be noted that the survey conducted was not a random sample and results from the survey analyses cannot guarantee that the sample of youth observed is representative of the larger population of students in Montreal The survey, however, did involve a large number of youth (n=2672) across Montreal schools. A common constraint of social research, especially in research that attempts to gather information from young people often does not permit probability samples. French and English school boards were invited by the International Centre for Youth Gambling Problems and High-Risk Behaviours at McGill to participate in the study. Academic calendars, research interests, additional or existing research commitments of school boards each year typically result in a modest number of school boards able to or interested in participating. Following school board level approval, each individual school must be invited and informed of the study in the same way as the school boards were, and participation is not guaranteed.

It is difficult to assess the validity of youth self-report data on sensitive topics such as gambling, however the data were assessed after descriptive analyses and implausible and suspicious records were removed from the sample (Byrne 2004). Records that were removed included responses where the same answer was recorded consistently throughout the survey (e.g., first box was checked for all questions or all possible answers were checked off in several questions), or for suspicious responses (e.g., a student indicated they were much older or younger than feasible). The analyses also do not take into account clustering by schools.

This study found greater numbers of VLT opportunities in economically disadvantaged high school neighbourhoods across Montreal. Over sixty percent of young people surveyed in Montreal reported gambling

in the past year, nearly ten percent gambled weekly and twelve percent of the youth reported using VLTs. Students most often reported gambling for fun, money, entertainment, and excitement. Common predictors of VLT use among the high school sample of youth were male sex, engaging in other risky behaviours like marijuana use, having friends who use VLTs, travelling to non-home destinations after school, and attending schools where gambling is prevalent.

Efforts to reduce the burden of gambling-related public health costs may be best achieved through a multi-targeted approach. Education and awareness campaigns targeting youth may increase the comprehension of the probabilities of winning associated with gambling activities and the public health impacts of excessive gambling. Campaigns to increase awareness of youth gambling among parents and guardians may promote responsible gambling among families and youth. Greater supervision of youth after school may reduce gambling rates and may be achieved through after school programs that provide alternative healthy activities to engage youth. Increased enforcement around gambling venues may reduce temptation and opportunity for youth gambling. All programs must be sensitive to gender differences in gambling prevalence and thus must be tailored to meet the needs and vulnerabilities of male youth in particular. Further research into accessibility of particular gambling activities in school and home environments may improve understanding of the role that exposure to gambling opportunities plays in influencing youth gambling uptake.

CHAPTER FOUR
YOUTH PERCEPTIONS AND EXPERIENCES OF VLTS AND OTHER GAMBLING ACTIVITIES

This chapter is the second primary research paper of the dissertation. It addresses the third hypothesis: youth gambling is a complex behaviour that is influenced by a combination of individual characteristics of youth, their school and broader social environments. Chapter three was primarily a structural assessment of youth behaviours and broader environments involving analysis of a student survey and an assessment of structural contexts including school neighbourhood social conditions (i.e., median household income) and community-level resources including school neighbourhood VLT *concentration* and *access*. Missing from literature on youth gambling is an in-depth analysis of how aware youth are of local gambling opportunities including VLTs and how their perceptions may influence their own or their peers' gambling behaviours.

This paper addresses the third objective of the dissertation: to develop an in-depth understanding of why youth gamble and how youth view VLTs through collective conversations with youth. The methodology detailed in this chapter addresses calls to make the research process more transparent (See Baxter & Eyles 1997) and acknowledge group interaction that occurs in group discussions (See Hyde et al. 2005, Reed & Payton 1997, Agar & MacDonald 1995, Kitzinger 1994).

4.1 INTRODUCTION

Youth are making transitions into adulthood in a very different world today than was the case even as early as a decade ago. Rapid globalization and the explosion in information and communication technologies have led many societies to adopt increasingly fast-paced lifestyles (UN 2005) and

youth are exposed to more technologically sophisticated opportunities to learn, communicate, and play than ever before. Youth of today are more technologically aware than previous generations and many young people have access to electronic and computerized devices for leisure and entertainment (Larson 2002).

Although forms of gambling are a timeless tradition in many cultures, only recently have governments sanctioned such extensive legalized gambling operations. The expansion of the gambling industry in North America has been underscored by technological innovations. Gambling activities like video lottery terminals (VLTs) are new forms of electronic gambling activities that have become tremendously popular in the local areas where they have been installed. VLTs contain several fast-paced games such as poker and blackjack and have been associated with increased risk of problem gambling (Cox et al. 2005, Volberg 2002, Doiron & Nicki 2001). Young people today are the first generation to grow up in societies where gambling and associated activities have become so normalized and embedded in economic sectors of society. Modern electronic and virtual gambling activities like VLTs may have particular appeal to youth, since they reflect the information and technology revolution in which they have been raised.

Youth can be considered a vulnerable population owing to the fact that experiences and behaviours developed in adolescence can influence healthy or unhealthy lifestyles that follow youth into their adult years (Richter 2006, Kershaw et al. 2005, Morrongiello & Dawber 2004, Call et al. 2002, Brooks-Gunn 2001, Bradizza & Stasiewicz 1999, Hedberg et al. 1999, Neumark-Sztainer et al. 1999). Youth are often prone to experimentation with new and often risky health-related activities as they move towards adulthood (Michaud 2006). Gambling is a risky behaviour that has been connected to numerous adverse health outcomes including suicide and depression, criminal and delinquent behaviour, and increased risk to developing multiple

addictions (Shaffer & Korn 2002, Stewart et al. 2002, Doiron & Nicki 2001, Derevensky & Gupta 2000, Fisher 1999, Gupta & Derevensky 1998, Derevensky et al. 1996, Frank et al. 1991).

Youth are beginning to be recognized by the Canadian research community for their potential to be problem gamblers (Messerlian et al. 2005). There is also strong evidence to indicate that those who gamble in childhood are more likely to become problem gamblers later in life (Burge et al. 2004, Vitaro et al. 2004, Winters et al. 2002, Gupta & Derevensky 1998, Wynne et al. 1996). Residents of Montreal and Quebec currently have access to the most diverse selection of gambling activities across Canada (Loto-Quebec 2004). Studies indicate that over 80% of both adults and youth aged 9 to 14 participate in gambling activities in a given year (Loto-Quebec 2004, Felsher et al. 2003, Gupta & Deverensky 1998) and over 50% participate in gambling activities at least once a week (Jacobs 2004, Skinner et al. 2004, Derevensky et al. 1996, Stinchfield & Winters 1998).

Most research on youth gambling and problem gambling has determined patterns and prevalence of gambling and identified individual risk factors associated with problem gambling (Hardoon & Derevensky 2001, Poulin 2000, Fisher 1999, Gupta & Derevensky 1998, Stinchfield & Winters 1998). Missing from the literature on youth gambling are in-depth analyses of how local opportunities for gambling and gambling norms are experienced by youth. For example, a recent ISI Web of Science query using the term "adolescent" or "youth" and "gambling" or "gamble" yielded a combined total of 177 citations (July 2007). Of these results, 128 (72.3%) were listed in a psychology, psychiatry or neuroscience subject category, while just thirteen (7.3%) were listed in a public, environmental and occupational health category, and only five (2.8%) were qualitative studies. Related research on nutritional habits and physical activity among youth have identified a lack of understanding of the factors associated with youth decision-making as well as

a need for environmental interventions that focus on population-level health behaviour changes rather than individual-level strategies (Bauer et al. 2004, Story et al. 2002, Neumark-Sztainer et al. 1999).

The main objective of this study is to address these gaps in knowledge and develop an in-depth understanding of why youth gamble and how youth view VLTs through collective conversations with youth. Methodologically this research was conscious of responding to calls in the literature to analyze focus groups as an interactive group process, rather than as a collection of individual responses, and to establish rigour in the analysis by explicitly making the data collection process more transparent. Concern over the research process and group interaction is discussed at greater length in the methods and analyses of this study.

Focus Groups

Focus group discussions involve simultaneous questioning among a group to explore the perceptions and opinions that people associate with particular issues. Pratt (2002) distinguishes focus groups from individual interviews through the setting of group discussions where behaviours and interpretations of individuals can be observed in relation to others. Social interactions that occur among group participants are a defining feature of focus groups in contrast to individual interviewing where interaction is limited to the participant and researcher (Hyde et al. 2005). The interactional nature of focus groups can encourage a synergistic group effect among participants where collective brainstorming and discussion can generate new ideas and insights, more than what is possible in individual discussions or aggregated individual survey data (Berg 2004, Berg 2001, Goss & Leinbach 1996, Crabtree et al. 1993). Observing group dynamics and discourse among youth may reveal how gambling is situated within local daily phenomena, normative behaviours, and shared knowledge (McGregor 2004).

The role of peers in influencing gambling has been well documented; a peer group setting may thus be especially effective in this type of research. Focus groups are considered useful in observing how social relations play out in a group setting and in identifying group narratives that may reflect broader socio-cultural norms and values from which group participants are selected (Cameron 2005, Hyde et al. 2005, McGregor 2004, Bloor et al. 2001, Denzin & Lincoln 2000, Goss & Leinbach 1996, Cortazzi 1993). Group discussions may be especially useful to obtain information from youth in a social atmosphere that may encourage new ideas and elaboration of attitudes through communication and interaction among participants (Cameron 2005, Berg 2004, Hoggart et al. 2002, Elwood & Martin 2000, Krueger & Casey 2000, Kong 1998, Stewart & Shamdasani 1990).

In this study, group discussions were used to gain new insight into youth gambling to begin to understand knowledge and perceptions about gambling, why youth gamble and what may be done to alter youth gambling according to youth perceptions. An assumption underlying this research is that youth gambling is a complex and problematic behaviour that is influenced by a combination of individual characteristics of youth, their school and broader social environments. Group discussions explored youth perceptions about the appeal of gambling, popular gambling activities, motivations to gamble, and where gambling takes place. Youth were also queried about how they understood gambling in relation to health and social consequences, and how youth felt adverse impacts from gambling may be reduced.

4.2 METHODS

Focus group discussions (n=7) were held with students (n=36) from three high schools in greater Montreal in the spring of 2006. Focus group interviews are distinguished by several main components: a small group (e.g., 5-8) of people, a convenient and non-threatening meeting place (e.g., familiar

place like a school classroom), a skilled moderator who guides the discussion, a set of predetermined questions or themes to guide interaction and dialogue of the group, and, the occurrence of an intensive group discussion (Cameron 2005, Hyde et al. 2005, Kamberelis & Dimitriadis 2005, Krueger 2002, Denzin & Lincoln 2000). The methods involved in arranging for these five components are described below.

4.2.1 Participants

Participants for group discussions are typically selected with an expectation that they will have insight to share on the matter of interest (Cameron 2005, Hoggart et al. 2002). Obtaining a desired sample for focus groups can be difficult since qualitative research usually relies on volunteers or recruited members who must donate their time (Krueger 1994). Individual student participation in focus group interviews was voluntary, and thus to an extent, participants were self-selected based on their interest. Group members are ideally compatible with one another, since the composition of groups will inevitably affect group dynamics and discussion.

Issues considered in composing groups for discussions included the gender and age of participants. Group research has revealed that the nature and level of participation among males and females may differ depending on group composition. For example, males may dominate discussions in mixed gender groups while females may work to diffuse tension or conflict (Lassiter et al. 1998). Differences in gambling among males and females may also influence the atmosphere and participation of participants as males typically engage in gambling and other risky behaviours more frequently than females (Stinchfield 2000, Gupta & Derevensky 1998, Wynne et al. 1996, Fisher 1990). Attitude and behaviour differences among males and females may affect the responses generated in group discussions. However, use of mixed gender groups may also be important to represent natural occurrences and

social interactions that take place among youth (Lassiter et al. 1998, Goss & Leinbach 1996).

Age groupings were also considered an issue, since age differences may have a bearing on perceptions, lifestyles and comfort levels among group members particularly during adolescence. To address age issues, each group was comprised of youth who were no more than one grade or two years of age apart. Focus groups were thus designed around age and gender differences to account for the possibility of gender-specific behaviours and attitudes as well as the everyday encounters of youth (Table 4.1). Previous gambling experience or interest was not considered in focus group discussions since this activity is clearly a sensitive topic and would risk unwanted exposure of students to guidance counsellors, fellow students or teachers and could result in psychological/emotional harm or disciplinary action to the students. In all classrooms approached, students were all equally encouraged to participate based on their interest in the topic or activity. Prior to contacting school boards, ethics approval was obtained from the Research Ethics Board II of McGill University[41].

Table 4.1. Sampling strategy desired for focus groups

Sampling strategy for each high school	Males	Females	Males and Females
13-15 year olds	5-7	5-7	5-7
16-18 year olds	5-7	5-7	5-7

4.2.2 Procedure

In the spring of 2005, seventeen English and French school boards in greater Montreal were contacted by mail and introduced to the study and invited to participate (Appendix D). Labour disputes[42] among teachers in the

41 Certificate of Ethical Acceptability of Research Involving Humans, File No. 23-0605. See Appendix C.

42 In November and December of 2005, rotating strikes over wages, working conditions and a new labour contract took place in Montreal and across the province of

English and French school boards in Montreal resulted in the loss of several days of class time for the academic calendar year of 2005/6 and the necessity of a compressed academic year. Disruption among the school boards made it very difficult to obtain permission to conduct research within many of the school boards and also resulted in a postponement of focus group interviews to the spring of 2006 from the original plan of fall 2005. Three of the seventeen school boards permitted individual schools within each board to be invited to participate in the research. Individual schools were then contacted similarly with letters of introduction, follow up telephone calls and electronic mail (Appendix E).

A total of three secondary schools from the three participating school boards agreed to participate in the study. In each school a school liaison, such as a guidance counsellor, assisted in recruiting students for the study and arranging discussions during class time. Presentations introducing the project were made to solicit youth volunteer participants by the moderator, assistant, and a school authority representative. Classrooms were selected for presentations according to the recommendations of school liaisons with an intimate understanding of the teaching curriculum, class availability and aims of the research project. Information packages containing consent forms for students and their parents/guardians were given out to interested students at the end of class presentations (Appendix F). Students were required to return consent forms completed by both the parent/guardian and participating student, at which point their names were included in a pool for focus group selection. Follow-up reminders were provided by guidance counsellors through individual classroom announcements and school

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Quebec by union federations including the Centrale des syndicates du Quebec (CSQ) and the Confederation des syndicates nationaux (CSN). The CSQ is Quebec's largest teachers' union representing primary and secondary teachers in both the English- and French-

announcements over the Public Announcement (PA) system and flyers with information on the research were posted in high traffic areas of schools by the author (Appendix G).

When sufficient numbers of students had returned signed consent forms, groups were assembled by the guidance counsellor based on the pre-arranged sampling strategy. Initially it was hoped that approximately 18 focus groups lasting around 60 minutes would be conducted from several schools in greater Montreal. Recruiting difficulties and time constraints of both teachers and academic calendars resulted in a compromised sampling strategy, with six of the seven groups being mixed gender and one group consisting of single sex male participants exclusively. Groups with single sex female participants exclusively were not achieved.

4.2.3 Moderator and Assistant

A focus group moderator or facilitator plays a large role in determining the atmosphere and structure of the group discussion. The moderator must be skilled at simultaneously managing group dynamics, asking questions and responding to the responses and interactions that occur in group settings (Arvasti 2004, Fontana & Frey 2000). Moderation can vary from rigid guidelines that control the discussion and ensure equal participation by group members, to simply interjecting where absolutely necessary (Berg 2001, Bloor et al. 2001). The level of interference of the moderator can influence the responses of participants and the nature and extent of discussions (McGregor 2004).

A moderator and assistant conducted the focus group discussions with participants. The moderator was recruited through the Career and Placement

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school boards, and the CSN is a union that represents school and health-care workers (CBC 2005).

Services at McGill University to direct the focus group discussions. The successful candidate had previous experience conducting qualitative studies through a master's degree and was enrolled in a doctoral graduate program in social sciences at the time of the study. Since French is the first language in Quebec, a francophone and bilingual (fluent in French and English) moderator was considered mandatory to keep language barriers to a minimum during the interview process. The moderator was provided with additional information on focus groups including a literature review prepared by the assistant moderator as well as a collection of tables including guidelines for use of appropriate body language (Table 4.2) and phrases (Table 4.3) to review and consider prior to the discussions.

The assistant aided the group discussions by recording notes on the order that students offered comments, setting up the materials and equipment required in discussions including the digital voice recorder and dealing with other organizational requirements. The assistant also recorded interesting or unexpected ideas that emerged during discussions, noteworthy expressions, word emphases, and group or individual participant dynamics that may not be perceptible through audio recordings. Both moderator and assistant were quite friendly and approachable, and felt that students were relaxed around them and enjoyed asking some questions of the two researchers usually about school or local sports. On occasion in focus groups one or two students were slightly less responsive in discussions. In each case, neither the moderator nor assistant felt that lower participation of a student was related to the student's level of comfort around the researchers, and instead appeared to be indicative of shyness or lack of interest.

Table 4.2. Body language guide for moderator

Body Gesture	Effect on Group / Individual
Eye contact	Can encourage person speaking to continue, or someone not speaking to share thoughts.
Pointing, other hand gestures	Can indicate individual should speak, also can let others know it's someone else's turn to speak.
Nodding and smiling	Encourages speakers to continue and helps them to feel comfortable – also lets individual know what they are saying is important.
Source: Cameron 2005:127	

Table 4.3. Useful phrases for moderator

Desired Outcome	Phrase
Encouraging exploration of an idea	Does anyone have anything they'd like to add to that? How do you think that relates to what was said earlier about….? Can we talk about this idea a bit further?
Moving onto a different topic	This is probably a good point to move on to talk about… Just following on from that, I'd like to bring up something we've not talked about yet. This is an important point because it really picks up on another issue
Keeping on track	There was an important point made over here a moment ago, can we just come back to that
Inviting agreement	Has anyone else had a similar experience? Does anyone else share that view?
Inviting disagreement	Does anyone have a different reaction? We've been hearing about one point of view but I think there might be other ways of looking at this. Would anyone like to comment on other sorts of views that they think other people might have? There seem to be some differences in what's been said and I think it is really important to get a sense of why we have such different views.
Clarifying	Can you give me an example of what you mean Can you say this again but use different words? Earlier you said that you thought…. Now you're saying…. Can you tell us more about what you think/feel about this topic/issue?
Curbing a talkative person	There are a few people who've got something to add at this point, we'll just move onto them. We need to move onto the next topic, we'll come back to that idea if we have time.
Encouraging a very quiet person	Do you have anything you'd like to add at this point?
Source: Cameron 2005:127	

In general, both the moderator and the assistant considered themselves to be low-risk gamblers, never betting any amount that they couldn't afford to lose. Both moderator and assistant felt that past participation in gambling was primarily for the social aspects of the activity and occurred around family or peer settings, instead of with any sincere aspirations of winning money. The moderator (male, late twenties) was native to Montreal and was familiar with local gambling opportunities. Growing up in Montreal, he had bought or been given scratch or lottery tickets on occasion, and had participated in sports pools among friends and family, tried VLTs, visited the local casino on a few occasions, and participated in informal card or pool playing bets with friends and family.

The assistant (female, author of thesis, late twenties) grew up in small town Ontario (i.e., Wasaga Beach) and was not as familiar with local (Quebec) gambling opportunities until moving to Montreal and beginning her dissertation research. Growing up in Ontario however, she had infrequently purchased or been given lottery tickets with family members and friends, and been given scratch tickets or Nevada (pull tab) tickets by grandparents on occasion. Playing pool or cards was an occasional pastime with friends or at family gatherings, and on the infrequent event that money was involved the stakes never exceeded a couple of dollars. Casino gambling was not realistically accessible for the assistant until attending universities in Ontario, and Casino Niagara was visited for an experience with friends and a few dollars were spent in slot machines. In Montreal the assistant visited the casino and several bars containing VLTs to gain a better sense of the types of bars containing VLTs and the clientele who use them. She also tried a VLT to get first hand experience of how they work (and lost!).

4.2.4 Pilot Study

Prior to conducting the focus group interviews with student participants, two pilot studies[43] were conducted with graduate students from McGill University. Related gambling studies have proven the utility of conducting focus groups for formulating and finalizing tentative interview schedules and identifying modifications that can be made to the interview schedule or discussion process (Skinner et al. 2004, Griffiths 1995). As well, pilot studies enable the researchers to obtain valuable feedback from participants about the structure of the group discussions. The pilot studies also served as an opportunity for the moderator and assistant to gain experience and confidence with discussion components and structure as well as the recording equipment. Participants were asked verbally for feedback and suggestions and asked to complete anonymous evaluation forms at the end of the discussions (Table 4.4).

Table 4.4 Pilot study evaluation form

Please fill out this feedback form to help us out with how you found the style of the discussion, and how we may wish to alter it before beginning our discussions with youth groups.
A) What part(s) of the focus group was the *most* effective for soliciting a group discussion (rather than individual responses).
B) What part(s) of the focus group was the *least* effective for soliciting a group discussion (rather than individual responses).
C) What would you change about the questioning or format that may make our focus group more amenable to youth groups (ages 13-18 years old).
D) Are there any other ideas you have that may make our focus group more enjoyable for youth or more effective as a research tool?
E) Please list any other comments / ideas / concerns you may have with the style/content of the focus group?
Thank you for participating in our trial run today, we really appreciate your help!

43 Pilot studies were held with graduate students from the Department of Geography at McGill University on December 5th, 2005 and again on April 25th, 2006

Evaluation forms were reviewed and were for the most part very positive and optimistic. Participants felt that the focus group structure was well designed and thought that youth would feel at ease with the two researchers, and may even be excited to talk to the researchers about gambling. Suggestions included: to continue to use general or open (and not leading) questions that students may be able to have different opinions about, for the moderator to linger a little longer on each question instead of moving to the next question quickly or encouraging additional responses (by saying "would anyone like to comment on that" or "does everyone agree with that"), and to make sure to describe VLTs to students. Many participants enjoyed the idea of filling out a worksheet before hand to give participants a few moments before the discussion to think about gambling and their ideas about gambling. All comments were discussed between the moderator and assistant and taken into consideration before beginning the focus group interviews with youth.

4.2.5 Discussion Setting and Procedure

Each of the seven focus group interviews was conducted once only, rather than several sessions for each group of participants. School classroom settings during school hours were chosen for discussions to keep students at ease with a normal school day routine and a familiar setting. All discussions were arranged in collaboration with school officials and held during class time in a vacant private classroom within each school. No other members were present during the discussions except for student participants, moderator and assistant. Discussions were conducted in the official language of the school. Two of the schools were French, and all discussions (n=4) at the two schools were conducted in French. The third school was English and all discussion (n=3) at the school were conducted in English.

Focus group discussions were conducted over three months beginning in April, 2006. The seven focus group interviews involved 36 (16 females)

students between 13 and 18 (mean 14.4) years of age. Focus groups ranged between four and six students. Groups were a manageable size and allowed each student to share their thoughts without time constraints and with limited competition among group members. It is generally considered that data acquired through group interviews can become saturated, with little new ideas and little emerging information beyond a certain number of discussions (Zeller 1993). In other focus group research, between four and six discussions are typically held when dealing with somewhat homogeneous participant groups. Discussions ranged from between 26 and 49 (mean 36) minutes and were concluded when the questions from the interview schedule had been covered, saturation had been reached, no new ideas were being offered, and participants felt they had nothing more to add.

There is an obvious power inequality between researchers and underage youth that must be considered (Arvasti 2004). Group discussions rather than individual interviews were one way to reduce the power differentials between the researchers and youth participants. A relaxed social atmosphere and the security of fellow peers can work to increase participant confidence in contrast to researcher-dominated individual interviews, particularly in discussing sensitive issues (Hyde et al. 2005, Hennessy & Heary 2005, Pratt 2002, Cameron 2000, Goss & Leinbach 1996).

Overall the research team felt that there was a very relaxed feeling among participants, and in fact at times it appeared that the research team was more nervous than the participants were. Students for the most part enjoyed the topic of the discussions, and enjoyed getting out of class time. They responded favourably to spending time with young adults who were not in a position of evaluation or instruction like other adults (teachers) in the school. Both the moderator and the author were sometimes surprised by how much participants knew about various gambling activities, and how common gambling actually was in the lives of participants.

Participants were typically quite forthcoming with their opinions, and often students seemed pleased to have been asked to speak as an authority about an issue, where there was no evaluation associated with their responses. There was an occasional instance where one or two students stood out as having more to say about particular issues. The group with only males that had four participants was one group that had a more obvious imbalance of participation and interest. In this discussion, many of the responses were dominated by two members of the group while the other two participants offered little input and at times appeared disinterested. To attempt to create a balance between individual responses, the moderator ensured that the two quiet members were given opportunities to speak in-between issues and during pauses in conversations without forcing the members to participate. Beyond providing opportunities for input, it was difficult to engage the two students given their seeming lack of interest in contrast to the enthusiasm of the other members.

Overall there was an interesting range of students in the discussions, with no particular type of student dominating the discussion within any of the focus group sessions. There were participants who seemed to fit stereotypical profiles of sporty jocks, studious students, students interested in the fine arts, and rebellious and slightly disengaged students. In each group, usually at least two members knew one another as close friends or from sharing classes before, but otherwise there seemed to be little pattern to the groups other than their age and gender groupings, which were pre-arranged with guidance counsellors.

The moderator and the author were cognizant that gambling and underage gambling as discussion topics are sensitive issues for youth to discuss with unknown researchers and peers. Discussing participation in an illegal activity could be viewed as a potentially exploitative situation for participants, particularly since participants will be interacting with fellow

group members on a daily basis after the research has been completed (Hyde et al. 2005, Pratt 2002). Further, the possibility that students may be uncomfortable freely expressing their opinions or that responses may be distorted to seem acceptable to fellow group members or researchers as authority figures or even role models was considered. To address these concerns, the research team made sure to present themselves in an unbiased and neutral manner with respect to individual participant responses and questions were designed so as not to single out individual participants. The research team also tried to be as open and honest as possible about the role of the researchers and opinions of the researchers with respect to gambling when asked. The role of the research team was described at the outset of each discussion session and it was made clear that the research was being conducted with the purpose of examining gambling as a public health issue.

The focus group discussions followed a basic agenda including a group introduction, an introductory activity, an overview of discussion rules and guidelines, a question and answer period, and a description of research involving sensitive issues and promise of confidentiality. This introductory process lasted approximately 15 minutes. When these items had been covered, the discussion took place and was followed by concluding remarks including expressing thanks to participants and presenting each student with a small token of gratitude. The moderator followed a script outlining key points to cover during these sections (Appendix H). Upon entering the classroom, students were greeted and asked to take a seat at the desks arranged in a circle facing towards the centre. The moderator and assistant were already seated in desks in the circle, typically across from one another. After students had picked their seats they were encouraged to help themselves to the selection of individually packaged juices and snacks at the centre desk. Following snacks and when chatting had diminished and attention was focused on the researchers, the moderator began the session by welcoming the students again, introducing the research team (moderator and

assistant) and thanking the students for volunteering their time for the occasion.

The moderator began the session by introducing and explaining the goals of the discussion and research. Confidentiality was described and assured on the part of the research team through the protection of names (i.e., use of pseudonyms) and the promise to collect only information about the participants' age and gender during the discussion. The moderator emphasized the independence of the research project and research team from the participating schools and confirmed that group recordings of the discussion would not be shared with any school officials. Since the actions of student participants during and after the research process were beyond the control of the researchers, a discussion on individual rights for anonymity and the importance of group trust was reviewed in hopes that confidentiality issues would be appreciated and respected. Participants were next requested for verbal permission to audio-record the discussion to enable as much of the verbal dialogue to be recorded as possible for later analysis. The introduction concluded with an explanation of the format and conventions of the interview and a question and answer period for students.

After introductions were completed, students were asked to turn over and complete an activity worksheet that had been arranged face down at each student's desk prior to their arrival. All worksheets were identical and contained general questions about gambling and ones specific to VLTs (Table 4.5). The purpose of the worksheet was to bring gambling concepts and activities to the forefront of the minds of the students prior to the discussion. Other studies have demonstrated the utility of similar activities to encourage independent thinking prior to group discussions (See Neumark-Sztainer et al. 1999). When worksheets were completed the moderator commenced the

discussion with the use of a non-directive, semi-structured interview schedule, modifying items as appropriate or necessary.

Table 4.5. Student worksheet

Hello and thank you for participating in our research project. Please spend the next few minutes filling out the questions below
List the three most popular gambling activities you know of 1 2 3
Briefly describe why you think these gambling activities are so popular
Which of the gambling activities you listed are located near your home?
Which of the gambling activities you listed are located near your school?
What types of gambling activities are students your age most likely to play or at least try?
What types of gambling activities are parents or other adults most likely to play?
When you are finished, please turn your page over. Thanks!

A standard core set of questions and probes were developed based on research goals and recommendations from the pilot studies (Appendix I). The interview schedule was designed to facilitate discussion among youth surrounding perceptions and attitudes towards local gambling opportunities and behaviours, but was not designed to dictate the nature of responses. It was anticipated that not all participants would respond to all questions, and also that some questions may receive fewer responses than others. Questions were added and modified slightly from group to group to take advantage of what was learned or what ideas or themes emerged from previous discussions. Flexibility with questioning was appropriate since the study was not designed to compare or contrast student discussions, but instead to develop a better understanding of youth perceptions overall.

Rather than querying participants about their personal gambling behaviours, questions sought student perceptions about gambling as well as behaviours observed by peers or community members as a way of avoiding direct and possibly incriminating questions. Questions were worded carefully to enhance the development of trust between the moderator and the group and to avoid making students feel alienated. Although students were not

directly asked about personal gambling experiences during the discussions, on some occasions personal behaviours were offered voluntarily. Facilitators were diligent about ensuring that incorrect or incomplete information shared about gambling in relation to odds or health was corrected immediately (See Table 4.6 for example). At no point were there glaring errors made in student responses except with respect to gambling odds, which were discussed usually by other students and also clarified by team members when necessary.

Table 4.6. Payout schemes for lottery draws in Quebec

Lottery draw	Grand prize*	Odds of winning grand prize
Super 7	Varies based on sales & winners. (~1 million to 30 million)	1:20,963,833
Lotto-649 Quebec-49		1:13,983,816
Astro	25,000	1:446,400
Jour de paye	$2000/week for maximum of 675,000)	1: 1,947,792
Banco	200,000	1: 2,147,181
La Quotidienne	45,000	1:10,000
Extra	500,000	1:10,000,000
La Mini	50,000	1:90
$10,000 a l'heure	10,000	1:6198
Triplex	20,000	1:249,800
La Poule aux oeufs d'or	100,000	1:1,000,000
Roue de fortune chez vous	5,000	1:2,000,000
*Grand prizes indicate maximum amount that is feasible to win, although there are also other smaller more frequent prize pay outs dependent on obtaining correct number combinations.		
Source: Loto-Quebec 2007		

Topics covered in the schedule included: local gambling activities and behaviours, motivations to gamble and alternatives to gambling, VLT gambling specifically, access and opportunities for gambling, gambling consequences and experiences, and gambling promotion and prevention efforts. Examples of focus group questions include: What are the most popular gambling activities? Why are these activities the most popular? Is gambling popular around here? Where does most gambling happen? In general, who do you think gambles the most? What are the main reasons that people gamble?

What about VLTs, who uses VLTs the most? How easy is it to play a VLT if you are under 18 years old? What are some of the negative experiences people have with gambling? Who do you think has the worst experiences with gambling? What do you think might be done to reduce the bad experiences of gambling, to make gambling a better activity for everyone? Can you think of specific ways to reduce unhealthy gambling among young people? What could we tell young people about gambling to make it safer or less harmful?

Interviews were audio-recorded using a digital voice recorder (Olympus WS-100). Students were assigned pseudonyms, although the names of students were not recorded at the time of the discussions (Table 4.7).

Table 4.7: List of focus group composition and student pseudonyms

Discussion Number and School type (Identifier)	Group Composition	Participant Pseudonyms
1, Rural (1:R)	5 Students (2F, 3M) 17/18 years	Erin, Claire, Tyler, Greg, Luc
2, Rural (2:R)	5 Students (3F, 2M) 17/18 years	Amy, Lindsay, Trevor, Alena, Chris
3, Suburban (3:S)	6 students (2F, 4M) 13/14 years	Benjamin, Jesse, Michel, Jonathon, Juliette, Sarah
4, Suburban (4:S)	5 Students (4F, 1M) 13/14 years	Theresa, Nicolai, Nicole, Michelle, Veronique
5, Rural (5:R)	6 Students (2F, 4M) 15/16 years	Justin, Riley, Thomas, Darren, Dawn, Jenny
6, Inner City (6:IC)	4 Students (4M) 14-16 years	Joel, Ryan, Ron, Vernon
7, Suburban (7:S)	5 Students (3F, 2M) 13/14 years	Kevin, Julian, Tara, Melissa, Kelly

At the completion of group discussions, school officials were asked if any formal programs or information sessions on gambling were incorporated into school curriculum. This was asked to determine if student responses may have been influenced by formalized curriculum on gambling. There were no formal programs in place at any of the three schools, although officials noted that gambling information would be made available to students upon request.

4.2.6 Analyses

Analyses of the data gathered through focus group discussions drew on methods of thematic analysis, constant comparative analysis and conversation analysis. Thematic analysis involves a systematic review and interpretation of data followed by categorization of excerpts according to themes and recurring sentiments (Kellehear 1993). The constant comparative method was originally developed by Glaser and Strauss as an analytic strategy for grounded theory methodology rooted theoretically in symbolic interactionism and pragmatism (Corbin & Strauss 1990). Key themes are identified from the data upon constant review. Each theme is compared with all other similar and conflicting themes in subsequent pieces of data. In accordance with the constant comparative (and grounded theory) methodology as well as thematic analysis, the analysis is an iterative process that begins at the outset of data collection rather than when data collection has been completed (Corbin & Strauss 1990). Conversation Analysis (CA) was developed largely from the contributions of sociologist Harvey Sacks and has been used in sociology as a means to expose broader social structures in surrounding environments and understand social processes at work that dictate how people interact with and negotiate around their surroundings (Chatwin 2004).

Interviews were transcribed verbatim into French and English by the moderator and assistant. Worksheets completed by students were translated where necessary and recorded electronically by the moderator and assistant. Summaries of responses were created for each group discussion and then for the entire sample. The bilingual moderator who conducted the discussions translated the French discussions into English. The assistant and moderator discussed any questions or concerns that arose when the assistant reviewed the translated transcripts. The assistant transcribed English interviews and also discussed any concerns with the moderator. The most difficulty that

occurred during transcribing was when a student mumbled and was inaudible or when more than one student spoke at the same time. On occasions when this had occurred when reviewing (listening to) interviews, both the moderator and assistant discussed the instances and came to a consensus on what was being said or deeming it inaudible.

Transcripts were read several times to become familiar with the data. Transcripts were re-read with the purpose of looking for new themes and interpreting predefined themes as outlined in the objectives and interview schedule. Sections of text were coded into themes using Microsoft Word, a word processing software package, rather than a specialized computer assisted qualitative data analysis software (CAQDAS) package like NUDIST Vivo. The author was familiar CAQDAS and had used NUDIST in her master's studies but chose not to use CAQDAS in this study. A manual coding and analysis strategy was preferred to enable the author to maintain a close connection to the data and to ensure analysis of the data (e.g., the singling out of quotes and excerpts) occurred in context with surrounding discussion. Printouts of each transcript were compiled and highlighters and coloured pens were used to emphasize key themes derived from the interview schedule, commonalities in responses, and interesting ideas and excerpts. Data analysis was ongoing to understand individual characteristics of youth that influence gambling and social and physical features in the environments of youth that may facilitate gambling. Note taking was completed before and after each group discussion by both the moderator and assistant to ensure analysis was ongoing. Note taking consisted of completing a systematic form designed to assess preconceived notions and subsequent reflections the moderator and assistant had about each discussion and participants (Table 4.8). Themes or code definitions were adjusted during reflection of the interpreter(s) and as additional pieces of data (i.e., transcripts, completed notes, verbal discussions and reflections with research team) were amassed. Note taking also occurred on printouts of previous discussion transcripts

during the discussion process as data was collected. Notes were shared and discussed verbally between the moderator and assistant at the completion of each discussion.

Table 4.8: Note-taking format for moderator and assistant to complete before and after each discussion

Date:
Location of discussion:
Description of Group: (Approximate age of group, gender, number of participants).
Thoughts before discussion: *Examples: *Today is our first discussion. I'm a bit nervous, but think the discussion with this group will be fine. OR *This group is an all-female group. I think it may be difficult to encourage a free-flowing discussion. In our last female group, the participants weren't very keen to talk about gambling. Maybe females have less experience/interest in the topic or maybe they weren't comfortable discussing the topic openly because I am older and a male.*
Reflections after Discussion:
Who were the most/least likely to talk about gambling?
Did the discussion go as you anticipated?
Did any joking, bullying, innuendoes occur between the participants during the discussion?
Did the discussion reveal any sensitivities with participants or aspects of gambling?
Did all the information revealed seem genuine? Did any information seem less truthful or exaggerated?
What was the most successful part of the discussion?
What should/could we change for next time?
Any other comments?

Each topic or theme that had been established was retrieved from each discussion and amassed into separate documents using simple cut and paste functions and reviewed separately for analysis. This meant that there were two types of files, either relating to a particular theme or a particular group discussion. Each section or excerpt copied from the original transcript had

unique identifiers and symbols to designate the group discussion in which they had originated. Quotes were selected that the researcher (author) felt best represented the particular theme. Quotes were reported verbatim except when otherwise noted through the use of symbols (Table 4.9). Some topics produced a relatively clear picture of student perceptions or experiences. For example, one of the questions asked was about the accessibility of gambling activities. Reviewing the responses within this theme produced a fairly consistent depiction of the ease and difficulties that students perceive and experience in accessing gambling activities. Other themes were not as amenable for thematic analysis and were instead conflicting and incomplete without consideration of the context of the surrounding conversation and dynamics between group members. For example, questions surrounding the appeal of gambling revealed themes for gambling motivations that developed throughout the course of discussions.

Critiques of focus group analysis include the lack of explicit reference to group interaction in analyses and subsequent reports (Hyde et al 2005, Reed and Payton 1997, Agar & MacDonald 1995, Kitzinger 1994). To accentuate interaction among student participants, analytic methods from CA was considered to keep track of the sequential ordering of discussions and demonstrate how participant perceptions and opinions developed during discussions and over time. CA was reviewed to assist in documenting patterns of behaviour and interaction among students to consider how participants contextualize their viewpoints about gambling in relation to daily routines and social environments.

Conversation analysis typically calls for extensive data collection of examples of group behaviours and interactions followed by a rigourous process of coding interactions including turn taking, sequential ordering, word choices and noting patterns that emerge (Chatwin 2004, Perakyla 2004). In this analysis, the researchers did not feel the data were suited to a

complete CA. However, special attention to ordering of responses and interactions in CA tradition was noted to understand how perceptions of students may develop through moments of interaction with peers and may reflect local social contexts in which youth interact. This was consistent with the theoretical framework that was adopted that considers the role of peers to play increasing roles in influencing decision making among youth.

Table 4.9 Description of symbols used in quotes

Quote symbol description	
…	indicates that there is a pause or space in time between two passages of a quote
[ ]	indicates that a word or thought has been added in the brackets to clarify a quote or idea.
( )	indicates a non-verbal expression such as a laugh

4.3 RESULTS

4.3.1 Thematic Analysis

Themes identified from the analysis include: the appeal or popularity of gambling, popular gambling activities, profile of a gambler, the appeal of gambling for youth specifically, the popularity of VLTs, underage access to gambling activities, consequences of gambling, and advice on reducing unhealthy gambling and youth gambling (Table 4.10). Worksheet responses completed by students independently prior to the group discussions largely mimicked responses indicated in discussions concerning popular gambling activities, the appeal of gambling and local gambling activities and behaviours (Table 4.11.).

Table 4.10 Summary of key themes from focus groups

Themes	Description
Appeal or popularity of gambling in general	Win money
Popular gambling activities	Sports betting, lottery tickets, poker and dice
Profile of a gambler	Low and middle class groups and males
Appeal of gambling for youth	Potential to win money and uncertainty is exciting
Popularity of VLTs	VLTs common and popular in local areas. Accessibility is a factor in VLT popularity VLT use is not common among students
Underage access to gambling activities	Underage access is dependent on venue (enforcement) and activity Fake ID can be used for bars Knowing people at depanneurs can increase access to lottery tickets Gambling is not accessible in schools
Consequences of gambling	Students are aware that negative experiences can occur from gambling involvement Students felt gambling is ok in moderation
Advice on reducing unhealthy gambling among youth	Set personal limits for gambling behaviour Amount of money wagered should reflect level of wealth of participant Increased enforcement around venues would decrease youth gambling and excessive gambling Need more educational campaigns to increase awareness regarding negative effects of gambling Reducing gambling opportunities would reduce excessive gambling Increase health-promoting opportunities for recreation

Table 4.11 Summary of student worksheets

"List the three most popular gambling activities you know of"	
Most frequently reported responses: -poker -lottery tickets (i.e., 649), scratch tickets -sports betting -casino gambling (i.e., slots, roulette) -other card games (i.e., black jack) -dice	Other less frequent responses: -VLTs -casual bets -online gambling -horse races -raffle tickets
"Briefly describe why you think these gambling activities are so popular"	
Most frequently reported responses: -make money, big jackpots, chance to make money -rush, thrill, excitement, fun -easy to access and also affordable -you are able to socialize	Other less frequent responses: -people like games on tv screens, visual stimulation of gambling -games are easy to learn, anyone can play -can play anywhere like cards -because they are televised -games are fast, like black jack -money to waste
"Which of the gambling activities you listed are located near your home?"	
Most frequently reported responses: -lottery tickets, scratch tickets -VLTs -sports betting -poker	Other less frequent responses: -casino, slot machines -online poker -casual bets -raffle tickets -cards, black jack -dice
"Which of the gambling activities you listed are located near your school?"	
Most frequently reported responses: -lottery tickets, scratch tickets -sports betting -poker -VLTs	Other less frequent responses: -casual bets -dice -online poker -black jack
"What types of gambling activities are students your age most likely to play or at least try?"	
Most frequently reported responses: -poker -dice -sports betting -card games, black jack	Other less frequent responses: -lottery tickets, scratch tickets -casual betting -casino, slot machines, roulette -online poker

"What types of gambling activities are parents or other adults most likely to play?	
Most frequently reported responses: -casino, slot machines, roulette -lottery tickets, scratch tickets -poker	Other less frequent responses: -sports betting -VLTs -black jack, card games -betting -online gambling

4.3.1.1. Why gambling is popular

When asked why people gamble or why gambling is a popular activity, students almost always initially described motivations for gambling in relation to winning money. For example:

Moderator: *And why do you think these activities, like lottery, poker, why are they so popular?*
Dawn (5:R): *People think you have a big chance [of winning]*
Sarah (3:R): *People think they have a chance of winning, maybe win the jackpot*

Speculating what might happen after winning a great deal of money from gambling was also a reason participants felt gambling was popular. Imagining how a big win might be life-altering and opportunities that might result from an unexpected increase of wealth were also described as part of the attraction to gambling.

Michel (3:S): *Some people often say 'If I win this [money], I'm gonna do this and that'.*
Moderator: *Yes, they start to fantasize about what they would do with the money.*
Michelle (4:S): *Or they want to go shopping but they only have ten dollars, so they play thinking 'Maybe I'll win one hundred dollars to go shopping.'*

4.3.1.2. Popular gambling activities

The most popular gambling activities identified by students included sports betting, lottery tickets, poker and dice.

Moderator:	*In your experiences, what are some of the most popular gambling activities?*
Amy (2:R):	*A lot of people are betting on hockey games or other games.*
Lindsay (2:R):	*Lottery and scratch tickets.*
Darren (5:R):	*Texas hold 'em, poker, black jack.*
Benjamin (3:S):	*Dice and especially poker this year.*

4.3.1.2. Profile of a gambler

When queried about the different types of people who gamble and reasons why certain people may gamble more than others, participants always indicated that most gambling was done by low and middle income groups rather that those with higher incomes. When describing why this was the case, students explained that poor people gamble more often in hopes of making money and changing their financial circumstances. Students considered that those who have a lot of money gamble less frequently and purely for entertainment rather than with the hopes of winning money. Participants considered gambling to be a normal or common activity for average middle class groups to engage in more routinely but also moderately.

Kevin (7:S):	*Poor people and rich people. I think poor people gamble to get out of their debts and try to stabilize their situation and rich people play just for the fun of it. Because often gamblers are on welfare. They wait for Thursday to come [referring to when social assistance cheques are released], they don't want to work, and then they think that with a bit of money they'll win big. Rich people, they play because they don't know what to do with their money.*
Veronique (4:S):	*People who don't have a lot of money, they hope to win and have more money.*
Luc (1:R):	*[Gambling activities are] Probably more popular here [area near to school location] than the rich part of town, cause uh, they*

have more desire to get a lot of money, than people who already have a lot of money.

Amy (2:R): *I think more middle class where they have a little bit of money to spend but not overly.*

Lindsay (2:R): *Yeah like they have two dollars in their purse so they buy a scratch ticket, that kind of thing.*

Chris (2:R): *They don't have like ah, they're not rich or something. And they don't have a lot of money and they figure 'oh if I give 50 cents or a dollar I'll have a chance of winning a million dollars'. They just think like that, if you're lucky.*

When asked if there were any gender differences in gambling, most students indicated that males typically have a larger interest in gambling than females. In accounting for male affinities towards gambling, participants suggested the competitive nature of males and a general interest in activities like sporting events that gambling activities are designed around.

Amy (2:R): *Males I think… I think males gamble more than females because they have a competitive nature. Or maybe guys would be more inclined to bet on sports 'cause they're like, 'Oh I know everything about this team. So if I say that they're going to win, then I have a really good chance betting on them'.*

Lindsay (2:R): *Or even poker or stuff.*

Amy (2:R): *More for guys.*

4.3.1.3. The appeal of gambling for youth

Youth find gambling exciting. Students described the possibility of winning money from gambling as exciting, although it did not appear to be the primary factor influencing youth to gamble. Instead, students identified the experience of gambling itself as motivation for participating in gambling activities. Males also often described the feeling of excitement and uncertainty of gambling as a major appeal.

Kevin (7:S): *It gives you a thrill, you're nervous. You don't want to lose your money.*

Thomas (5:R): *Cause you don't know if you're going to win or not and you're taking a big risk…*

Young females find some individual gambling activities fun. Females typically indicated less enthusiasm than males for gambling activities. In some instances however, some expressed interest in lottery tickets and the enjoyment of scratching instant win tickets, but not necessarily attributed to the possibility of winning money.

Lindsay (2:R): *I think so cause with us, more women buy scratch tickets.*

Amy (2:R): *My parents would never finish scratching their scratch cards, so I would always go around with a penny and scratch the rest.*

Lindsay (2:R): *Yeah! I used to do that too! At the depanneur [local convenience store where Lindsay is employed] people come and cash in their tickets, but all they do is just scratch the number to see how much they won, but they don't play the game like bingo or whatever. So I would play.*

4.3.1.4. The popularity or commonness of VLTs

VLTs are common and popular in local areas. Most students and especially male participants, acknowledged being familiar with and fairly knowledgeable about VLTs. Students felt VLTs were common and very visible in local areas and their accessibility made them an especially popular gambling activity.

Moderator: *Do you think VLTs are popular in Montreal and Laval?*

Kevin (7:S): *Yes, in both.*

Amy (2:R): *Yeah, cause since they're [the casinos] all so far away, you don't see a lot of people that go to the casino really. Like my grandma*

goes once every few months, with like a bus of people.

Justin (5:R): *Yeah, like everywhere I go. Like at [name of bar in Montreal], I don't know if you know that one? … There's always machines close to there, or everywhere.*

Trevor (2:R): *A lot of them have lights at the front so when you're driving by you see them. And then like it [the VLT] will catch your eye, because people always look at lights. That's why Vegas is Vegas.*

Moderator: *And what about VLTs? Are they popular around here? Around this part of town?*

Lindsay (2:R): *Yeah, I would say so.*

Trevor (2:R): *I don't know cause like I guess our closest casino is one in Hull, one across the border, one in Montreal… So I guess like people buy scratch tickets and they play the video lotteries because it's like, I don't know, you have an equal chance of winning there then if you drove into Montreal, you know? So it's just saving you the trouble of driving in. It's right there.*

Men and younger people play VLTs most often according to participants. Students almost always indicated that men played VLTs much more often than women did. On occasion females indicated their puzzlement regarding why VLTs are popular.

Lindsay (2:R): *I usually see men playing them [VLTs].*

Amy (2:R): *I don't know I find there's more men in bars.*

Lindsay (2:R): *Yeah like when you go to a bar, and you see someone there by themselves, it's usually men. It seems like it's usually men.*

Lindsay (2:R): *I don't know like, I know people, well, I don't know sometimes, people that I know at bars or whatever, they'll put in money to try to win more money to drink. And they'll end up putting 40 bucks in and winning nothing. And that's ok [with them].*

I don't know, I'd be pretty pissed. I wouldn't do that.

Students also discussed that young people enjoy VLT gambling more than older people.

Ryan (6:IC): *Normally there's more young people in bars.*
Joel (6:IC): *Yes, people of 19, 20, 22 years old.*
Moderator: *So, this is the clientele for VLTs?*
Joel (6:IC): *Yes, because they were used to being told 'no no no' but now that they're old enough and allowed to play, they try it.*

Participants described how VLTs are often played in combination with drinking.

Greg (1:R): *Bright lights [from the VLT machines] attract drunks!*
Luc (1:R): *Plus they're drunk, so they don't really realize how much money they are putting into the game [VLT].*

VLT use was not considered to be very common among students. Although students, especially males, expressed considerable knowledge about and interest in VLTs, most students suggested that VLT use was not a huge interest for young people.

Moderator: *And what about VLTs and students? Do you think students are into VLTs?*
Trevor (2:R): *No I think students would rather play pool.*
Lindsay (2:R): *Yeah people bet on stuff like that more than machines.*
Moderator: *So more betting and stuff than VLTs?*
Lindsay (2:R): *Yeah I think so. At least our age students I think.*
Lindsay (2:R): *They're not exposed to it so they can't start.*

Trevor (2:R): *I don't know I don't see people my age playing on them.*

4.3.1.5. Minors' access to VLTs and other forms of gambling

Looking at access to gambling, students knew minors under 18 years old were prohibited from gambling activities. There was a range of opinions about the accessibility of gambling activities with respect to both the type of activity and the gambling venue. Some students felt that youth could get into some establishments with little or no difficulty while other places had more enforcement.

Sarah (3:S): *I think it's a little difficult to play if you're underage, because there is some surveillance.*

Melissa (7:S): *I would say no, it's not easy.*

Moderator: *Why do you say no?*

Melissa (7:S): *Because there's enough surveillance.*

Juliette (3:S): *There are some places where surveillance is there, and other places where there's no surveillance.*

Amy (2:R): *Around here they don't really, you can get into a bar. It's not really hard to get into a bar here because there's no checking [for proof of legal age to purchase alcohol and gamble] at all.*

Trevor (2:R): *Like I've gone to a place and saw a kid in grade eight (approximately thirteen years old) drinking!*

Amy (2:R): *And it's really obvious. You'll see really young kids and they look really young but they'll still get in.*

Trevor (2:R): *Cause like there's places here [in local town], like there's a bar that we go to every now and then and they don't card at the door but they card at the bar. So you could be in there playing pool, or putting money into that machine where you get a teddy bear, or playing like the video lottery and*

that's ok. But if you go and buy a drink you're asked to leave if you're not eighteen.

Veronique (4:S): *There's nobody in the front who will tell you 'you're not allowed playing because you're a minor', so it's pretty easy.*

Michel (3:S): *Yeah, because their goal is for you to put money in the machines, and they make profit with that, so that's why some places don't have surveillance.*

Kelly (7:S): *It's still easy because most places will let you in.*

Moderator: *So you think it's easy?*

Kelly (7:S): *Yes, bars, they'll let you in even if you're minor.*

Joel (6:IC): *Yes, very easy, they don't control in bars, they just check to see if you look old. And when you do look older, then you can even buy beer.*

Students (most often males) describe how going to the store and knowing the people who sell lottery tickets makes it easy to buy them.

Darren (5:R): *I think it's easier if you live in a smaller community, because um there's less people.*

Benjamin (3:S): *Yeah, and they're accessible, like the lottery tickets, you can buy them anywhere, at depanneurs, and even young people can buy them, you just have to ask an adult and it's pretty easy.*

Darren (5:R): *Yeah, like if you go to the store and you know the people who work there, like if you're good friends with them they'll sell you tickets and all that.*

Some young males indicated having spent more time in local bars than females, evident with their intimate knowledge over specific numbers of VLTs in virtually all of the local drinking establishments.

Thomas (5:R): *There's two machines in the bowling alley, and at the [name of local bar] there's two machines.*

Moderator: *So they're pretty popular?*
Justin (5:R): *Yeah and there's four at [name of local sports bar], there's about fifteen at [name of another bar], and seven or eight at the [name of another bar].*

Students also discussed using fake identification cards or paying the bouncers or the employees at the door made accessing bars easy.

Moderator: *But it's over eighteen though, right?*
Justin (5:R): *You just give them five bucks at the door.*
Riley (5:R): *Some places you just give them money and they'll let you in.*
Justin (5:R): *Not some of them, all of them!*

Gambling was not considered accessible in schools. When asked specifically about gambling activities in schools, students described past gambling activities within schools and current enforcement resulting in little or no gambling activities occurring at school by students.

Claire (1:R): *Well the teachers are pretty strict on it like so it's like in our agenda and some of the things like that, it's pretty strict about that.*
Moderator: *So in school there's awareness or something like that.*
Tyler (1:R): *In school you can't.*
Greg (1:R): *No, you can't.*
Moderator: *Even cards or anything?*
Erin (1:R): *Not for money.*
Luc (1:R): *Outside of school though, there's quite a few people.*
Greg (1:R): *Yeah, and we bet on like rugby games and stuff.*

4.3.1.6. Outcomes of gambling

Gambling has negative effects on social well-being and health. Students were aware that some people have very negative experiences with gambling.

Moderator: *Thinking about some negative experiences, can you name a few that people have with gambling?*

Michel (3:S): *Become aggressive.*

Benjamin (3:S) : *Dependency.*

Sarah (3:S): *They can lose their house, lose everything they have, and have no choice but to live in the street.*

Benjamin (3:S): *These people are always alone, and their friends slowly are cut out, and so they become more and more isolated in their world, and their friends won't talk to them again.*

Chris (2:R): *People commit suicide and stuff.*

Nicolai (4:S): *You can end up in the street. I already saw a commercial on tv where the guy bet his wedding ring and lost his wife.*

Michelle (4:S): *You can even lose your job, everything.*

Amy (2:R): *It's like any addiction, like drug addictions. I don't know, problems in your relationships is the same as gambling addictions.*

Students felt that gambling is not a bad thing when in moderation. Most participants however viewed gambling to be a potentially safe activity, as long as moderation was practised.

Amy (2:R): *I don't think it's all bad though, gambling. Like if you do it you know keep it limited, like how much you're doing it, it can be fun. As long as you're not going overboard.*

4.3.1.7. Advice for reducing the harmful effects of gambling

When asked for advice from youth on what actions could be taken or what could be told to youth to reduce negative consequences from unhealthy gambling, many students suggested setting personal limits for gambling behaviour.

Amy (2:R): *I would limit time that you're going to be playing. If you're going to be using VLTs then say, 'well I'll be on this for twenty*

minutes,' and that's it you know. And also a maximum amount of money to spend.

Benjamin (3:S): *Watch for how long people are playing, and set a time, for example thirty minutes, after which the person must stop playing.*

Tara (7:S): *Yes, but people should learn how to control themselves. If you go to the casino and you bring all your money… you should set a limit, like a hundred dollars.*

Dawn (5:R): *I think they should have, like if they're gambling on poker, they should have a limit of how much you can put down instead of just keep putting money and money and money.*

Michel (3:S): *I would put an age limit, I would allow only people over thirty to play with that junk [VLT machines].*

Students also thought limits should reflect the level of wealth of participants.

Lindsay (2:R): *A hundred dollars to one person could be like two thousand to another depending on their class.*

Amy (2:R): *And like there's some people who are of lower income who make a lot less money and people have to bet the same amount as people who make a higher salary. So you know if you work hard you probably want to be spending more money, as opposed to people with lower salaries.*

Justin (5:R): *Depends on the person, if they're on welfare or something…*

Student participants suggested more enforcement around gambling venues to decrease both youth gambling and excessive gambling.

Benjamin (3:S): *Dice, especially here in this school, since the principal keeps an eye on dice activity in the caf [cafeteria], so now we can't really play dice wherever we want. It's not like last*

	year, when almost everybody used to play dice, everyday students used to bring dice and everybody was like 'hey you got dice, you wanna play', and they used to bet for money, sometimes 100 bucks, at school.
Moderator	*And why is this [dice] less popular this year?*
Kevin (7:S):	*The school staff caught the people playing dice.*
Moderator:	*Is there more surveillance this year?*
Kevin (7:S):	*Yes, I even saw something in our agenda about it.*
Sarah (3:S):	*More surveillance around the machines.*
Dawn (5:R):	*Like I know they can't control everything, cause they can't control people betting on sports and that, but the things they can control, they actually should control it.*
Darren (5:R):	*Like the most they can control is the VLTs. Because you can stop those and can even unplug them.*
Dawn (5:R):	*You can also see where people are using them and you can card [ask for ID] the people and stuff.*
Juliette (3:S):	*There's probably many depanneurs that sell lottery tickets to youngsters, and they shouldn't be allowed to do so.*
Michel (3:S):	*If they get caught they get a fine.*

Students suggested that more awareness campaigns to educate youth about the negative effects of gambling might reduce unhealthy gambling.

Moderator:	*So what could we tell young people about gambling, a message on a commercial or something. What should we tell them?*
Dawn (5:R):	*I wouldn't say 'it's bad don't do it' because kids are going to be like 'oh well I'm a rebel I'm going to do it' so I don't know, just be responsible about it, I don't know.*
Michelle (4:S):	*Do like with cigarettes, do billboards to make people stop.*
Nicole (4:S):	*Yeah, more publicity.*

Justin (5:R): *They should do like those commercials like 3546111 where it stays in your head.*

Moderator: *Yeah the catchy numbers.*

Veronique (4:S): *Adults should show the example and not gamble. If adults do it, then kids will also do it. It's like, you see your parents gambling, you'll think it's fun and will want to try it.*

Moderator: *So parents have a role to play?*

Juliette (3:S): *Parents should not buy lottery tickets for their kids.*

Moderator: *In one sentence, what is the message we could tell young people about gambling, for example for a TV commercial?*

Kevin (7:S): *Put a low number of people winning, like one out of ten.*

Melissa (7:S): *One out of ten is not low! More like one out of a million.*

Students felt that reducing excessive gambling might be best achieved through a reduction in gambling opportunities in combination with an increase in other activities to choose from besides gambling. When participants were discussing how to reduce unhealthy gambling for youth they often raised the issue of local opportunities and described the appeal of gambling in reference to a paucity of extracurricular or recreational activities available in local school and home neighbourhoods.

Michelle (4:S): *In movies, they don't want actors to smoke, they're not allowed having cigarettes on commercials anymore, and May 31st smoking will be prohibited in every restaurant and bar. So maybe do the same thing.*

Juliette (3:S): *Reduce the number of machines, there's so many.*

Michelle (4:S): *Make more commercials telling people not to gamble.*

Veronique (4:S): *Sometimes commercials are useless, they tell us ' don't do this,' but we should tell them not to sell these things to us if they don't want us to use it.*

Amy (2:R):	*Like around here we don't have anything for the youth to do. Like people either go to the pubs or stay at home. Like for us, we don't have anything to do.*
Lindsay (2:R):	*Sometimes there's like rec [recreation] centres or whatever, but no one, I don't know, the wrong people go to it. So it isn't very useful.*
Amy (2:R):	*Yeah, like open more places for kids to go. Where they're not always confined to their home.*
Moderator:	*Are there other activities near homes or schools that could reduce youth gambling?*
Jonathon (3:S):	*Sports.*
Michelle (4:S):	*Organize more events.*
Michel (3:S):	*All types of entertainment.*
Sarah (3:S):	*Anything to set their minds away from gambling.*
Joel (6:IC):	*They should build more youth centres, make more activities.*
Ron (6:IC):	*More sports.*
Joel (6:IC):	*That would solve two problems, gambling and obesity.*

4.3.2 Group Interaction and Consideration of Conversation Analysis

The process of interaction and negotiation among student participants was largely overlooked when analysis involved only a description of themes or topics that emerged. A closer description of group interaction revealed glimpses of how ideas developed, were modified and positions were debated for validation and clarification. The following quotes demonstrate further insight gained through consideration of group interaction as well as sequential ordering of participant responses. Important findings included emerging ideas about accessibility, participant vulnerability and personal experiences with gambling.

4.3.2.1. Interaction reveals different levels of exposure, experience and awareness of gambling

Attention to group interaction revealed emerging themes about availability or accessibility of gambling. Interplay between participants also encouraged elaboration of responses to validate opinions. It became apparent through discussion among group members that some participants have had more exposure to or experience with gambling opportunities in their local neighbourhoods. In one discussion, group interaction revealed different opinions about the ease of underage gambling, followed by further validation by participants about ease of underage gambling. The interaction indicated that Michel may have more personal experience with gambling in the local neighbourhood than others like Sarah.

Moderator:	*Would you say it is easy for underage people to play VLTs?*
Mix:	*Yes, no…*
Jesse (3:S):	*Yes, there's not a lot of surveillance.*
Sarah (3:S):	*I think it's a little difficult to play when if you're underage, because there is some surveillance.*
Juliette (3:S):	*There are some places where surveillance is there, and other places where there's no surveillance.*
Michel (3:S):	*Yeah, because their goal is for you to put money in the machines, and they make profit with that, so that's why some places don't have surveillance.*
Moderator:	*Are there places that are easier than others?*
Jesse (3:S):	*Depanneurs, restaurants.*
Michel (3:S):	*There's a few depanneurs around here where it's really easy.*
Moderator:	*There's a VLT in a depanneur? [Establishments must have a liquor license to serve alcohol to apply for a VLT license. Although depanneurs often sell beer, they do not have serve alcohol on the premises].*

Michel (3:S): *No, I mean it's easy to play the lottery.*
Benjamin (3:S): *There isn't many VLTs around here other than in restaurants. Not many places where it's [VLTs] accessible.*

Nearing the end of the discussion, ideas about the convenience of gambling emerged. Further, students also frequently explained that a lack of locally accessible entertainment and leisure opportunities often provided incentive for their participation in gambling activities.

Riley (5:R): *Some people do it for fun, but some people do it, cause they have nothing else to do.*
Jesse (3:S): *Sometimes they go there [bar or casino] for distraction.*
Juliette (3:S): *Or to have fun.*
Benjamin (3:S): *Or those who have nothing else to do.*

In another group discussion, attention to group interaction revealed similar differences of opinions with respect to underage gambling. Again it is possible that some participants, like Kevin and Kelly, have had more exposure to local venues with gambling opportunities than Melissa and possibly Tara.

Moderator: *If you're a minor, do you think it's easy to play a VLT?*
Mix: *No*
Kelly (7:S): *It's easy because most places will let you in.*
Moderator: *So you think it's easy?*
Kelly (7:S): *Yes, bars, they'll let you in even if you're minor.*
Melissa (7:S): *I would say no, it's not easy.*
Moderator: *Why would you say no?*
Melissa (7:S): *Because there is enough surveillance.*
Tara (7:S): *I think it's easy. Obviously, if you're twelve they won't let you in, but if you're 16 and you look old.*
Moderator: *So it's easier for students who look older?*
Melissa (7:S): *I never tried so I don't know.*
Tara (7:S): *Me too*

Moderator:	*Are there places where it's easier?*
Tara (7:S):	*Probably, if the place needs money it won't bother them to have [underage] people gambling.*
Kevin (7:S):	*There's one in Sainte-Rose [local community], you walk in the bar, the machines are on the side, and nobody's there to check [for ID].*

Again in another group discussion, interaction demonstrated a general consensus and validation of ease of gambling among minors. Further, the unanimous agreement about the ease of underage gambling and the description of local places with VLTs suggested the group was very familiar with local gambling venues and may have even spent some time in these places.

Moderator:	*And, how easy is it to play a VLT is you're under eighteen?*
Claire (1:R):	*I think it's pretty easy*
Moderator:	*Yeah?*
Greg (1:R):	*Yeah, cause if you get into a bar, then you could just…*
Claire (1:R):	*Yeah, if you get into a bar.*
Moderator:	*And they don't card or anything.*
Claire (1:R):	*Not in many places.*
Greg (1:R):	*You can be 15 [years old] in Huntington [local community] and get into a bar.*
Claire (1:R):	*Yeah.*
Greg (1:R):	*As long as you have money, and are willing to buy beers and stuff.*
Claire (1:R):	*Yeah, you could look young and still get into a bar.*
Moderator:	*Yeah?*
Greg (1:R):	*Pathetic [lack of enforcement].*
Moderator:	*And are there some places where it's easier to play [gamble]? Like are some places known for not really caring about…*
Claire (1:R):	*I think in the bowling alley. It's pretty easy to play there.*
Moderator:	*Yeah?*
Greg (1:R):	*At the pub.*
Claire (1:R):	*Yeah the pub.*

Moderator: *And they have a lot of VLTs there?*
Claire (1:R): *They have a few.*
Erin (1:R): *They've got a couple machines.*

4.3.2.2. Interaction reveals process of negotiation and validation between males and females in describing the appeal of gambling

In observing interaction among males and females, females seemed shocked and expressed their concern when learning about the gambling behaviours of their fellow peers and most often males. Below Thomas described his enjoyment in gambling, and his part time job where he earns money that he can choose to gamble with. Dawn expressed her disapproval and surprise, particularly regarding the amount of money spent. Thomas goes on to describe why he likes to gamble and Justin joins in to help validate his position.

Moderator: *So they (students/youth) play for money, they gamble for money?*
Thomas (5:R): *I gamble all the time*
Dawn (5:R): *A lot of money?!*
Darren (5:R): *Well not a lot of money… thirty bucks.*
Dawn (5:R): *That's a lot of money! … But wouldn't you, like not gamble because it's your own money you're gambling with?*
Thomas (5:R): *Yeah, that's just it, it's my own money, so I don't care if I lose it or not. I earned it.*
Dawn (5:R): *Hmm, well I don't know. I could think of other things I would spend it on… I don't know, I don't think girls have the same interest in giving their money away.*
Thomas (5:R): *Girls, like they don't work as much as guys do.*
Dawn (5:R): *They're [girls] smart about their money.*
Jenny (5:R): *Girls don't work as much as guys do???!*
[Group laughter]
Thomas (5:R): *Where people get their money, it depends. In school, a lot of people get their money from their parents. I work and earn my own money. I work on farms and stuff.*

Moderator:	*So you think if you have a job… Wouldn't you be more busy with a part time job?*
Dawn (5:R):	*But wouldn't you like, not gamble because it's your own money you're gambling with?*
Thomas (5:R):	*Yeah, that's just it. It's my own money, so I don't care if I lose it or not. I earned it. (chuckles)*
Dawn (5:R):	*Hmm, well I don't know. I could think of other things I would spend it on.*
Justin (5:R):	*Yeah, but when you work, you always want to go out and drink some beer and have some fun after.*
Thomas (5:R):	*Yeah, like I want to do something, like go hang out with some friends, play poker and drink beer.*
Moderator:	*So if girls had more money and it was say on the weekend, is there any kind of gambling that girls would do?*
Dawn (5:R):	*I don't know, I don't think girls have the same interest in giving their money away.*

4.3.2.3. Sequential analysis reveals vulnerability of participants and experiences with gambling with family members

When asked if there were differences in gambling participation among males and females, as indicated through thematic analysis, students almost always indicated that males gambled more than females. In one instance, a female participant (Nicole) suggested that females gamble more than males. Remaining group members disagreed with Nicole. Close attention to the sequential ordering and progression of the discussion revealed that Nicole's mom participates in gambling, possibly beyond moderation. Her responses indicate she may have more direct exposure to adverse impacts of gambling and that her responses may be directly influenced by the experiences her mother has had with gambling.

Moderator:	*Do you think there's a difference between those who play, for example between men and women, young and old?*
Nicole (4:S):	*Yes, the games are different.*
Moderator:	*Ok, so it depends on the type of game? What about VLTs?*
Nicolai (4:S):	*Old people.*
Moderator:	*And in terms of men or women?*
Nicole (4:S):	*I think it's more women.*
Michelle (4:S):	*I think it's more men.*
Theresa (4:S):	*Yeah me too.*
Veronique (4:S):	*Yeah me too.*
Michelle (4:S):	*In movies, when you see someone who lost everything and who wants to kill himself, it's rare that it's a women! (laughs)*
Nicole (4:S):	*Yeah, but that's just movies.*

Later when the group was queried about types of people who gamble, Nicole's responses stand out in contrast to other female participants. Her perceptions about gambling may be based on personal experiences with her mother, general opinions, or a combination of both personal home experiences and general views.

Moderator:	*What are the types of people who gamble?*
Nicole (4:S):	*Well, people who want to get their mind off things, for example if they're having problems in their life.*
Veronique (4:S):	*People who don't have a lot of money, they hope to win and have more money.*
Nicole (4:S):	*Because when you start going to the casino, after you tell yourself that the next time it will be better, and it never stops.*
Michelle (4:S):	*If you go once in a while, it's ok, but if you go all the time, then it's not normal.*
Veronique (4:S):	*My parents go to the casino but they don't play. They only time they played was in a casino on a cruise boat and they won forty dollars.*
Nicole (4:S):	*My mom went to the casino with her friends the other day, she had four hundred dollars and she spent it all. After that she stopped.*

Moderator:	*Besides the reasons mentioned previously like money, are there other reasons why people gamble?*
Nicole (4:S):	*If you lose someone you love, then you gamble to forget.*
Nicolai (4:S):	*To comfort yourself.*
Veronique (4:S):	*Yes*
Michelle (4:S):	*Some think it looks like a cool thing to do, so they try it, and often they become addicted.*
Veronique (4:S):	*Curiosity*
Michelle (4:S):	*Or they want to go shopping but they only have ten dollars, so they play thinking, 'Maybe I'll win one hundred dollars to go shopping.'*
Moderator:	*In general, what are the experiences that people have when gambling? Do you think it's positive or negative?*
Theresa (4:S):	*For those who continue playing, it's positive, and for those who stop, well…*
Nicolai (4:S):	*Because they're not lucky.*
Veronique (4:S):	*But they never stop!*
Nicole (4:S):	*Because they keep thinking that if they put a little more, they're going to win.*
Veronique (4:S):	*Yeah, and maybe I'll win more if I put another fifty.*
Nicolai (4:S):	*Yeah, they think, 'I have a trick, if I do this and this I'll win,' and then they realize it didn't work, and they try another trick.*

4.4 DISCUSSION AND CONCLUSIONS

Focus group discussions were held with youth to explore why youth gamble, popular gambling activities, and where gambling takes place in local environments. Focus groups should be large enough to yield a range of opinions and small enough to allow all group members to share their views (Wong et al. 2005). In all but one discussion (the all-male group) the research team felt that relatively equal interaction and attention was given to members.

Group discussions often provide a more relaxed atmosphere for discussing issues and have been considered useful for youth given their social nature. A limitation however with respect to gambling activities, is that youth might be apprehensive about discussing their involvement in an illegal activity. In this study some group participants were familiar with one another prior to focus group discussions. Responses of participants in the presence of friends or less familiar peers may have been altered or less candid to fit with surrounding discussions (Bauer et al. 2002). Youth males have been found to exaggerate responses or show off among fellow male participants in group discussion research (Hyde et al. 2005). Note-taking helped to recognize genuine responses, and both members of the research team took notes before and immediately following discussions without consulting with each other to assess whether or not the student responses seemed authentic or exaggerated.

To the best of the author's knowledge, there has been no previous work seeking to develop an in-depth understanding of the appeal of VLTs to youth, why youth gamble in relation to their local environments, and particularly the importance that accessibility of gambling opportunities plays in influencing youth awareness and motivations to gamble. Further, youth have not before been queried about their understanding of gambling as a health-related behaviour and how youth feel gambling may be most effectively reduced. Using focus group discussions, the importance of accessibility of gambling in influencing the awareness youth have about gambling has been demonstrated. Greater attention to describing the focus group research process and methods employed made the structure and nature of qualitative data gathered transparent. Transparency enabled for a reflection on how the methods used influenced the data collected. Consideration of CA addressed criticisms over previous group research that has neglected to discuss interaction occurring in focus group discussions and how this may relate to broader social norms from which participants are drawn and, ultimately, how

interaction may influence responses. Talking with youth and witnessing youth interact with each other has enabled for a better understanding of youth gambling as influenced by local opportunities and social practices, particularly of peers and family members like parents. Attention to individual youth responses in discussions as well as group interaction enabled an understanding of how youth perceive and articulate their gambling experiences and viewpoints in peer group settings.

Student perceptions about gambling (e.g., appeal of gambling, accessibility of gambling, relation of gambling to health) were examined and participants were solicited for advice on ways to reduce the adverse social and health impacts of gambling. Students generally agreed that males typically have a larger interest in gambling than females. While male participants often engaged in gambling activities with their peers and favour sports betting, poker, dice and electronic gaming like VLTs, female participants preferred lottery and scratch tickets and didn't relate gambling to socializing with friends. Students also perceived a social gradient to gambling and believed low income groups to gamble most often, those with average incomes gambling moderately, and that the rich gamble infrequently. These views resonated with student beliefs about the appeal of gambling activities since participants often described money and the fantasy of winning money as one of the largest factors motivating people to gamble. Students considered the popularity of gambling to be attributable to the high occurrence and accessibility of various gambling activities. The prevalence of gambling opportunities in combination with a lack of locally accessible entertainment and leisure opportunities was repeatedly considered to provide incentive for youth and adult gambling. Youth participants were aware of the negative effects that gambling can have on social well-being and health, usually offering up outcomes like suicide, depression, loss of friends and family, and bankruptcy. While students demonstrated awareness of problems that can

arise from gambling behaviours, they often considered gambling to be a safe activity when moderation was practiced.

Observing youth in an interactive setting among peers enabled a deeper understanding of youth attitudes and beliefs about gambling and provided the opportunity for youth to describe, in their own words, how they perceive gambling in their daily environments. Specifically, group discussions shed light on what gambling activities youth are attracted to and why youth find gambling appealing, youth perceptions about the commonness of gambling like VLTs in local environments and types of people who gamble most, youth attitudes about impacts of gambling on health and ideas for how to reduce unhealthy gambling among youth.

The consideration of CA helped reveal how youth view gambling more generally and VLT gambling specifically and how these perceptions may develop in local social settings. Processes of contest and validation among youth were witnessed and it was possible to imagine how gambling perceptions held by youth may be socially constructed in other settings and how youth attitudes could be reaffirmed or modified through interaction and reflection among one another. Often when topics were first introduced, group responses were short and interaction was limited. However, as discussions continued, responses often became longer and interest increased. At some points in discussions, ideas of participants were altered as they listened to other participants' responses and reflected on their own personal experiences.

Male offerings of gambling motivation and the resulting reinforcement from fellow male participants legitimized male rationale and interest in gambling. Males often echoed each other on types of gambling that are popular like poker and sports betting and often agreed with one another on the fun and opportunities for socialization that gambling provided. Females in a similar way, joined together in expressing a difference of opinion on gambling behaviours than that of males. Females similarly described their

shared lack of interest in certain gambling activities that males enjoyed like poker or sports betting, and particularly those activities that required larger amounts of money. Females also agreed in having an interest in less social and arguably less financially risky gambling activities like scratch tickets, but to a lesser degree overall than the gambling interest of males.

On the topics of gambling motivation and gambling accessibility, consensus was achieved when statements were challenged or qualified based on group reactions or responses. Tension between males and females was noted, with an obvious difference expressed in gambling preferences and motivations. At times positions were qualified and elaborated on by males to gain support from fellow male peers in the face of female contest. Modification of views only became apparent by examining the sequences of the discussions.

Focus group discussions with youth enabled an understanding of how gambling activities are perceived and experienced in the daily lives of youth. Participants were very familiar with gambling activities and males especially described enjoying several gambling activities on a fairly regular basis. Student responses suggested that local social and physical environments played a role in youth and local gambling behaviours. Participants described the access of gambling activities and noted a lack of alternative opportunities for youth leisure time. Male participants almost always described gambling in reference to friends. Efforts targeting youth gambling clearly need to consider interventions that cater to males. Results point to the need for increased provision of healthier alternatives to social engagement for males particularly during periods immediately after school.

Students were aware that gambling had the potential for negative health and social costs. They had little trouble coming up with negative outcomes associated with excessive gambling including bankruptcy, suicide, depression and loss of friends and family members through strained relations. When asked for advice from participants on what actions could be

taken to reduce negative consequences from unhealthy gambling, students suggested imposing greater limits on gambling such as personal wager and time limits. Students were aware that poor and rich members of society participate in gambling and felt that gambling limits should be sensitive to the personal levels of wealth of participants, so that individuals with limited incomes could only wager limits that would prevent harmful personal losses.

Students suggested that increased education about negative consequences of gambling and actual odds of winning would help reduce gambling. However, youth participants also reported that education and awareness would not be sufficient to change youth behaviours and used tobacco advertisements as an example of failed attempts to change behaviours. Students felt that a reduction in gambling opportunities in local neighbourhoods together with an increase in other local recreational opportunities for youth would be most effective in discouraging unhealthy gambling and promoting health-promoting leisure activities.

CHAPTER FIVE
EXPLORING GAMBLING NORMS: VIEWS FROM SCHOOL OFFICIALS AND STUDENTS

This chapter is the third empirical research paper of three in the dissertation and serves as the second interpretive exploration of the third hypothesis, that youth gambling is a complex behaviour that is influenced by a combination of individual characteristics, school environments and broader social contexts. Chapter five tackles the fourth objective of the thesis: to develop an understanding of the social norms supportive of youth gambling in schools through collective conversations with youth and depth interviews with school officials. The research in this chapter sought to contribute to the gap in knowledge about the role of social norms in influencing youth gambling.

5.1 INTRODUCTION

Changing experiences, roles, and opportunities for independence underscore youth development (Brooks-Gunn 2001). As parental control decreases, peer norms and other social networks of youth often have an increasing influence on the behaviours and beliefs of impressionable youth (Bauer et al. 2004, Morrongiello & Dawber 2004, Neumark-Sztainer et al 1999, Bronfenbrenner 1986). This study examines how social norms may influence youth gambling in Montreal.

Social norms have been conceptualized extensively in social psychology in attempts to explain why people engage in or avoid certain behaviours. Norms are described as recognized patterns of behaviour, standards or codes of conduct for behaviours, and shared expectations for how people behave (Wiium et al. 2006; Rymal & Real, 2003, Ajzen, 1991; Cialdini et al, 1991, Schofield et al. 2003). Examinations of social norms includes assessing how people perceive the majority of people behave with respect to certain

behaviours, how significant members of an individual's social network behave, what social pressures or expectations an individual perceives for them to perform or avoid particular behaviours (Cialdini et al. 1991). For example, an individual's perception of how normal or common a behaviour is among the majority of a population can influence the individual's perception and actions towards that behaviour. Likewise, how an individual perceives the behaviours of influential people like family or friends can also play a role in an individual's opinions and decisions about the given behaviour. Further, the likelihood that significant or influential people would approve or disapprove of a behaviour can also influence the behavioural intentions and eventual behaviours of an individual.

The popularity of gambling in Canada is undeniable as witnessed through the escalation of gambling opportunities in recent decades and coverage of gambling in the media including advertisements on the television, radio, newspapers and the internet (Azmier 2005). Gambling markets now have the capacity to provide populations with continuous and virtual access to a number of gambling commodities in home and neighbourhood environments (Korn 2002, Shaffer & Korn 2002, Eadington 1997). Young people are increasingly being considered at risk for gambling problems and youth gambling has become an increasing public health issue (Messerlian & Derevensky 2007, Wickwire et al. 2007, Griffiths & Wood 2004, Langhinrichsen-Rohling et al. 2004, Felsher et al. 2003, Shaffer & Korn 2002, Stewart et al. 2002, Doiron & Nicki 2001, Derevensky & Gupta 2000, Fisher 1999, Derevensky et al. 1998, Gupta & Derevensky 1998, Derevensky et al. 1996, Shaffer & Hall 1996, Frank et al. 1991). Studies in Canada indicate that over two thirds of youth gamble in a given year, and 4-8% of youth gamblers exhibit significant gambling problems (Derevensky & Gupta 2006).

There is a small but growing body of research dedicated to youth gambling. Studies have primarily examined individual factors associated with

youth gambling and measured levels of gambling participation and problem gambling among youth groups. Individual risk factors for gambling that have been documented include being male, engaging in other risky or deviant behaviours like substance use and delinquent behaviours, and the gambling behaviours of parents and peers (Felsher et al. 2004, Stinchfield 2000, Shaffer & Hall 1996). Research has only recently been directed towards understanding features of local environments that may promote gambling (Welte et al. 2007, Gilliland & Ross 2005). Even fewer studies have considered gambling in the context of the broader social norms in which gambling activities transpire and persist, and how these social processes are interpreted by youth (Wickwire et al. 2007).

Wickwire et al. (2007) explored the "perceived environment" of youth, defined by youth perceptions about parent and peer attitudes towards gambling to examine how youth perceptions may influence gambling behaviours of a sample of African-American youth in the United States. The study involved analyses of a student survey that found youth gambling to be related to how youth perceive their parents and peers. Roberts et al.'s (2005) study on youth sexual behaviours involved focus group interviews with high school students, teachers and health professionals in Mongolia. The study found utility in exploring multiple perspectives (i.e., youth, parents, teachers) to understand the social and cultural contexts in which youth sexual behaviours are developed (Roberts et al. 2005). The primary objective of this chapter is to develop an understanding of the social norms supportive of youth gambling in schools through collective conversations with youth and depth interviews with a closely related population, school officials.

5.2 METHODS

Focus group discussions (n=7) with youth (n=36, 20M: 16F) and key informant interviews with school officials (n=3, 3M) were conducted in three secondary schools in greater Montreal between April and June of 2006. A

total of seven focus groups were conducted that explored the perceptions of 36 students between the ages of 14 and 18. Six of the seven groups were mixed gender, and one comprised only of male participants.

Key informant interviews were conducted at the completion of the focus group discussions. One key informant was approached for the study from each of the three schools. Key informants were selected based on their intimate knowledge of the student body and development and behavioural issues that youth face. In two of the schools the guidance counsellor served as the key informant, and in the third school the head security guard at the school served as the key informant. Key informants provided written consent for their participation prior to interviews (Appendix J).

A semi-structured interview guide for the key informant interviews was developed around similar themes developed for youth focus groups and included: popular gambling activities, youth motivations to gamble, commonness of youth gambling and access to gambling activities, gambling in local community settings, strategies for addressing youth gambling in schools (Appendix K). The informants were not informed of youth responses from the group discussions. Anonymity was discussed and maintained through the use of pseudonyms and the removal of place names where necessary (Table 5.1).

Interviews were audio-recorded using a digital voice recorder (Olympus WS-100) and transcribed verbatim into French and English by the moderator and assistant. Interviews were conducted in the mother tongue of the informants by the research team that conducted the focus groups. Two of the interviews were conducted in French by the moderator of the group discussions, and the third interview was conducted in English by the author. Interviews lasted between 24 and 30 (mean 28) minutes. Interviews were conducted in the schools where the informants were employed. Interviews were held at the private office of each informant at their request. No other school officials or students were present during the interviews except for the

interviewer and assistant. Interviews were arranged at the convenience of informants and occurred during the school/work day.

Table 5.1: Key informant interview participant summary

School type (Identifier)	Gender, approximate age	Position at school	Number of years working at school	Pseudonym
Suburban (I:S)	Male, 35	Guidance Counsellor	3	Mr. Leduc
Rural (II:R)	Male, 40	Guidance Counsellor	10	Mr. Sedaris
Inner City (III:IC)	Male, 45	Head of School Security	12	Mr. Afsar

Focus group interviews were conducted with each of the seven participating groups of youth. The procedure for the focus group interviews is described in detail in Chapter four (Section 4.2). Ethics approval was obtained from the Research Ethics Board II of McGill University prior to focus group discussions and key informant interviews (See Appendix C).

5.2.1 Analyses

The analytic approach adopted in this study drew on thematic analysis and constant comparative analysis. There have been calls for greater creativity and flexibility in qualitative analyses (Wiles et al. 2005) and elements of each of these two methods were deemed most useful to interpret the findings. Thematic analysis involves a systematic review and interpretation of data followed by organizing and categorizing selected passages or interactions within the data into salient themes (Kellehear, 1993). Constant comparative analysis was utilized to develop a better understanding of gambling in the context of youth and key informant experiences. The constant comparative method is an analytic strategy initially developed for grounded theory methodology (Corbin & Strauss 1990). Thematic analysis and constant comparative analysis are iterative processes that begin when data collection begins allowing for initial theme definitions

or coding to be adjusted during interpreter(s) consideration and reflection and also in relation to additional texts or accounts.

Transcripts of each focus group and key informant interview were read several times to become familiar with the data and to gain an overview of general patterns, issues and attitudes about gambling. Each transcript was then reviewed several more times to identify salient themes from responses that helped develop an understanding of social and cultural contexts of youth gambling and broader norms surrounding gambling. Sections of text were coded into themes using Microsoft Word, rather than a CAQDAS package like NUDIST Vivo. The author chose a simple word processing software package and a manual coding and analysis strategy to keep the electronic coding strategy simple and to enable a collection of manual (i.e., handwritten) thoughts and coding to be amassed in one location (i.e., a large portable file folder with transcript printouts and handwritten notes).

Printouts of each transcript were compiled and highlighters and coloured pens were used to emphasize key statements, themes, and commonalities and differences among the youth and informants. Data analysis was ongoing from the outset of the focus group discussions and key informant interviews. Note-taking was completed before and after each group discussion and informant interview by both the moderator and assistant to ensure analysis was ongoing. On one occasion (i.e., one key informant interview from the rural school) the author was the sole researcher present for data collection and note-taking. On this occasion notes were hand written and also verbally dictated into the audio recorder before and after the interview. Note-taking occurred on printouts of previous discussion transcripts during the discussion process as data was collected. Notes were shared and discussed verbally at the completion of each discussion. Note-taking processes consisted of completing a systematic form designed to assess preconceived notions and subsequent reflections the moderator and assistant

had about each discussion and participants (Table 4.10). Themes or code definitions were adjusted during reflection of the interpreter(s) and as additional pieces of data (i.e., transcripts, completed note-taking forms) were gathered.

Each theme that was identified from each transcript was compared with those identified from all other transcripts. As it was impossible to begin analysis without preconceived concepts about gambling norms and behaviours, transcripts were also considered in relation to previously defined themes and concepts addressed in the interview schedule. Theme development was aided by reviewing notes taken by the assistant during group discussions including delivery and emotion of responses, the occurrence of compatible or divergent ideas (Krueger & Casey 2000). Sub-themes were created based on the content and nature of discussions and responses that ensued during the interviewing process (Crabtree & Miller 1992). Data from both youth discussions and informant interviews were matched to appropriate themes and verbatim quotes were selected that the author felt best illustrated and contextualized the themes identified.

5.3 RESULTS

Seven focus group discussions with youth explored the perceptions of 36 students from three high schools. Key informant interviews with school officials from each high school solicited informant perceptions about youth gambling in school and neighbourhood environments (Table 5.2). The three schools were located in rural (R), suburban (S) and inner city (IC) neighbourhoods. Analysis of discussions with youth groups and key informant interviews revealed six key areas relating to youth gambling norms: youth vulnerability to risk taking and local trends, the importance of accessibility in gambling behaviours, local cultures of gambling dominated by males; social acceptance of gambling; and a range in risk perceived from gambling activities.

Table 5.2: Socio-demographic characteristics of three schools

Neighbourhood type	Suburban (S) (French)	Rural (R) (English)	Inner City (IC) (French)
Enrolment*	1000	1000	2000
Grade range at school	7-8 (Secondaire 1-2, Cycle 1)	7-11 (Secondaire 1-5, Cycle 1&2)	7-11 (Secondaire 1-5, Cycle 1&2)
School CT median household income* (CSD data)	$60,000	$36,000	$29,000
School CT proportion with less than high school diploma* (CSD data)	10%	23%	15%
French Only*	45%	65%	60%
English Only*	2%	35%	2%
*Approximate values are given to preserve anonymity of schools (Source: Statistics Canada, Canadian Census, 2001)			

5.3.1 Youth and males in particular are susceptible to risk taking

In describing why youth gamble, key informants described how youth and particularly males were susceptible to new experiences and activities that elicit excitement. Respondents described youth as active and in need of activities to occupy free time. Gambling was considered a popular option for youth to engage in to alleviate boredom and provide a thrill through the chance of winning money.

> *(S) Mr. Leduc: For the challenge, to make money, for the thrill that goes with. They're [youth are] more in the experimentation phase and [gamble] for the thrill of winning money, even if it's just 25 cents.*

> *(IC) Mr. Afsar: Idleness, idleness is the mother of all vices. When a kid has nothing to do, he's gonna create himself a game, and the easiest game is to win money.*

Key informants considered risk takers as particularly attracted to gambling, but these were not necessarily students who had poor academic achievement. Also, informants considered that students who had received positive experiences, like winning from their initial experimentation with

gambling, may be more prone to the future development of sustained gambling behaviours.

Moderator: *Do you feel that there are differences in gambling activities or attitudes with respect to different student characteristics?*
[If unclear, examples were provided, like gender, ethnicity, age, stereotypes, academic performance].

(IC) Mr. Afsar: *In relation to academic performance, it's not necessarily the ones who are in difficulty. There's not really a difference. We already caught kids in the superior program who were gambling… I would say it's often kids with a behaviour predisposed to criminal activity. They can be smart people or dumb people, but they're just prone to do stupid things. It's the same in the other schools. It's part of life experience.*

(S) Mr. Leduc: *I think it's the same type of people who gamble that drink and take drugs.*

(IC) Mr. Afsar: *Yes, especially pot. Because we don't gamble for nothing. Kids gamble to make money…*

(S) Mr. Leduc: *If you get a taste for it and it fills a need, then you will easily get hooked. And if you keep winning money and you become popular through it, it might push you even more to play.*

5.3.2 Youth follow local trends

When asked how common gambling is among students or to describe popular gambling activities, key informants and students identified dice, sports betting and poker as popular among youth. Two themes emerged when key informants described why these particular activities were popular among youth. Key informants suggested that youth are impressionable and pick up on popular trends or fads quite quickly. Playing dice was considered a local trend that had recently lost popularity, while poker was described as a new

up and coming trend. Sports betting on the other hand, was described more as a part of local tradition that had always been around but had just recently become more popular with the general growth of the gambling industry.

> *(S) Mr. Leduc: Dice… I know that last year dice were pretty common in many schools… Less common [now], there was a lot last year, but not as much this year.*

> *(IC) Mr. Afsar: Dice, because they're cheap and you can win big… Depending on the trend. Before they used to play dice, neighbours, even adults. Now that trend is gone.*

> *(R) Mr. Sedaris:I think the big ones are the sports betting and the poker games at a buddies house on the weekend, and that sort of thing… And that's something else that the kids are more into, poker for sure. Lately especially with the proliferation of coverage on sports networks, so that's something that's quite recent.*

5.3.3 Gambling accessibility is important

Key informants' descriptions about the popularity of gambling among youth were often underscored by the access and convenience of certain gambling activities, like dice.

> *(IC) Mr. Afsar: At the end of winter and at the beginning of spring. The end of winter because kids are fed up of being inside, so they think 'why not play dice?'. The beginning of spring because the nice weather makes it easy to go outside and hide to play [dice]… Yes, one place, we found out last year, the river. The [river name], they meet there and they play dice.*

> *(S) Mr. Leduc: [Dice] They're easy to carry. Kids find that it's a cool game. It's also a question of accessibility; you can play dice anywhere… Public places, outside, in the lockers, in hidden places. During recess, at*

lunch… I think they also played at home, they play for money. But at school they mostly play for lunch boxes… There aren't really any other places to gamble around here, other than the mini-market (to buy scratchies and lottery). There isn't many stimuli for gambling.

5.3.4 Local gambling cultures dominated by males

Key informants and students unanimously agreed that gambling was most popular among males. Sports betting among males was described almost like it was an accepted part of male culture, particularly among avid sports fans. Participating in betting pools over individual games or full tournaments was considered a very common and accepted activity. In accounting for male affinities towards sports betting, students and key informants suggested the competitive nature of males, an interest in sporting events, the exposure to sports gambling in the media, and how well suited sporting events were to making bets on as rationale for sports betting among males.

(R) Mr. Sedaris: I can't say one group [of students] is more into gambling than another. If anything, I would say you know the jocks and those who are involved in sports might do more gambling – and you know sporting-related activities… I could say some of them are more outgoing ones, the more aggressive ones, might lead more pools, but that's general… Because they [youth] are exposed to sports, and because they obviously have a knowledge of the game. I would say the sporting clique might gamble a little more... In terms of really what I see most of, in terms of gambling, is sports related activities. So that is predominantly males, because they're more involved in sports, watching sports and that kind of thing. And those that don't really have a knowledge of sports tend to stay away from it, you know? I think one of the allures of sports gambling is that you think you know sports so well that you can pick the winning teams and so on… Well now there's you know, different pools and fantasy pools where you make

your own team of players and I mean that's all betting as well. So there's always something going on. Certainly, you know the play offs, whether it's football or basketball, hockey, there's more going on. Yeah, you can bet pretty much on all different sports all year round. Football tends to have the biggest draw…Football well, in some ways people say that football is geared towards betters, just because of their organization as well. Like it's one game, it's all on Sunday, and you know teams have to release who's injured and who's not injured, how serious the injury is. So then you can, you know, determine who is going to play and place your bets and all that.

Amy (2:R): *Maybe guys would be more inclined to bet on sports cause they're like, "Oh I know everything about this team. So if I say that they're going to win, then I have a really good chance betting on them".*

Aside from the male-dominated sports betting, there was general consensus that most gambling activities were favoured by males. The social nature of some gambling activities enables males to interact with their peers in an exciting and competitive environment.

(IC) Mr. Afsar: Since I'm here at [school name], I never caught a girl [gambling], it's always boys.

(S) Mr. Leduc: I would say it's mostly older kids that play, and mostly males….

(R) Mr. Sedaris: I guess age, as the students get a little older you see more gambling at the senior level – senior students, grade 11 students and so on. Also because they can start getting into bars and their exposed to video machines, whereas younger kids would not be… Ah, I would say there's a large predominancy of males. That's what I see.

Amy (2:R): *Males I think… I think males gamble more than females because they have a competitive nature.*

Lindsay (2:R): *Or even poker or stuff.*

Amy (2:R): *More for guys.*

Kelly (7:S): *I think it's more men. My Mom works at a bar, and since I was a little girl I sometimes go with her, and I rarely see women gambling, I see mostly men.*

Males volunteered descriptions of positive experiences of gambling with friends. Gambling was often described as an activity that enhanced socialization among friends. Young males particularly considered gambling (particularly playing poker, participating in sports betting pools and playing pool) to be a good activities to engage in among friends.

Tyler (1:R): *Poker is more of a social thing*

(R) Mr. Sedaris: *The smaller basketball pools, you know, you put 5 bucks each – it's more just for the social aspects.*

(R) Luc: *Yeah, a social event.*

Thomas (5:R): *Yeah, like I want to do something. Like go, hang out with some friends, play poker and drink beer.*

5.3.5 Social acceptance of gambling

A recurring theme throughout the key informant interviews was the growing acceptance of gambling in society and the increased availability and awareness of gambling opportunities. The role of media was considered a large factor in increasing popularity and acceptability of gambling.

(R) Mr. Sedaris: Um, I think I see more and more [gambling] over the past few years, just more acceptance of gambling in our society. I listen to quite a bit of sports radio, talk radio and certainly on the sports radio stations, all sorts of you know commercials advertising on-line gaming and that kind of thing. Certainly around sports, I think I see that more with the high school males is just a

lot more betting on sporting events. Whether it's [sports tournament / game] pools, whether it's on-line betting, or whatever the case. I think it's just becoming more and more accepted in our society… Ten years ago, um, again you didn't really see it [gambling] as open. You know now it's more, they'll talk about the last game and who won the pool and things like that. And you know it's just accepted. Everyone talks about Sunday's games and who won the pool.

(IC) Mr. Afsar: Did you see how many key-chains with dice are sold? What does it mean? Go to the casino and you'll win money. It's funny but we even publicize gambling. 'Go to videopoker.com'.

(R) Mr. Sedaris: I think they [youth] certainly know, you know, quite a bit about what's available. Internet availability, that's for sure. The casinos are something that is advertised more and more. There's also blue bonnets [horse betting] off track betting places in some of the towns around. In [place name] for example they, have the blue bonnets off track betting bar, so to speak… And there's some [internet] sites now that just let you play for free. And I guess there's no age restriction. You just have to say you're 18 and click on yes and then you can play poker without money being exchanged. But it gets you into the habit… I think people are really playing because it's getting a lot more advertising on the radio for example. On the sports radio certainly, they advertise gambling websites… The acceptance in our culture of gambling and the proliferation of advertising in the media, that surprised me more than anything. That they advertise on radio and that sort of thing, off shore betting I think it's called.

Gambling was described as an activity often so embedded in day-to-day life as a social activity that often people don't even think about their participation in gambling.

Lindsay (2:R): *Like even like those little things [gambling activities] you know. You don't even realize that are around you, you know? Little things that happen all the time and that's pretty much gambling, but you don't think of it that way*

Trevor (2:R): *I don't know, and at a family gathering you always play cards. Like you get Nanny there, and everybody is playing cards, so it's a social activity.*

(S) Mr. Leduc: *I remember when I was young, I asked my mom to scratch her tickets because I used to find it amusing.*

5.3.6 Perceived range of risky and innocuous gambling activities

Two informants described the past problem of dice playing by students in their schools. They reflected on the seriousness of the problem at the time and the impact gambling was having on students. Both informants described the necessity of various levels of enforcement by teachers and staff within the schools to gain control and reduce dice use among students.

(S) Mr. Leduc: *[The school had] A lot of intervention, and all those who got caught had their dice confiscated. Also, we have a younger crowd of students this year. Last year there were a lot of older students, and older ones play more…. It decreased since last year. There's more surveillance, we don't let anything pass…. We advise the parents, there's consultation, but we don't suspend for that [gambling]. We give detentions.*

(IC) Mr. Afsar: *If you would have come five years ago… [Dice] Games being played in bathrooms, on the stairs, in classrooms, in hidden places. I would have given you a box full of dice. Everyday, we used to confiscate minimum 20-25 pairs of dice. That was a real plague, kids were betting money, not just 25 cents, but 2$, 5$... Four or five years ago, we gave a big hit. The school, the teachers, and the security department. We were everywhere, in*

bathrooms, in hallways, in stairways. The administration gave us a lot of help. We had to break the habit [of youth playing dice]. Few [teachers] are afraid to admit it, but it was becoming a real plague… With the collaboration of the school administration and teachers, we increased [gambling] surveillance. Suspensions, warnings to parents, etcetera. We settled the problem, to eliminate the problem completely, because it was becoming a real plague. Students playing for money, fighting, kids with no money. We went in the streets, in the surrounding area. We increased surveillance during hours of exit. We were six security agents, and we were in streets watching. As soon as we found students playing [dice], we would bring them back to school, give them a suspension, call the parents, etcetera. Since last year, we have only found one pair of dice! … We didn't change the rules per se, what is illegal outside is illegal inside. It was just a matter of putting efforts into the surveillance and being present everyday.

Despite the seriousness of past troubles with youth gambling in schools, responses from key informants and students revealed a range in perceived risk in gambling activities from some activities that were less acceptable and considered risky, to others that were considered acceptable and innocuous. While students and key informants indicated that gambling was not permitted in schools by students, they were aware of gambling activities that teachers participated in and sometimes even made preparations for at school. Gambling was often viewed as an acceptable activity by school teachers, by key informants and students. Although key informants recognized the links between excessive gambling and health, they often felt that some youth and teachers did not recognize gambling as a potential health risk.

(R) Mr Sedaris: I don't think they [youth] see that [health risks of gambling] at this age, they don't recognize, just in general, whether it's drugs, whether it's

alcohol. They don't recognize all those negative things that go with it… Not yet, but you know I think it's really a growing phenomena. Ten years ago it would be kind of a non-issue. Ten years from now we'll see where we're at.

(R) Mr. Sedaris: Well certainly we have you know the Loto649 thing, the office pool. There's been more sports related pools going on. Some of the younger teachers who've come on staff, you know have organized basketball pools, football pools, so that's a lot more common now with the younger teaching staff.

Tyler (1:R): Also the staff has, they all put money in and buy lottery tickets

Greg (1:R): Oh yeah, like the group thing?

Trevor (2:R): If anything, we're gambling in the school, like a lot of people underage. But we're still doing it because the school looks differently upon it because it's a raffle. It's not, you're not putting money into a machine you're just buying a piece of paper, you know? If anything it's just as bad as a scratch ticket. It's like the same principle.

(S) Mr. Leduc: Gambling can become a health issue if it becomes pathological. If you prevent yourself from eating or if you lose everything you have, then it's a major health problem. It depends on the frequency of play… Often, it's people who start young who become compulsive gamblers.

(R) Mr Sedaris: Um, you know, there's certainly an acceptance of that kind of stuff [group pools, sports betting]. Any other activity would certainly be frowned upon… yeah, the pools don't really seem to concern anyone. You know it's just part of our culture. People bet on Sunday football games and they talk about it the next day. It's the card games. That's the kind of thing that would certainly be acted upon, with kids playing cards in the hallway. Someone would intervene for sure.

(R) Mr Sedaris: Um, I think they [teachers] have a different definition about what gambling is. I don't think that people [teachers and community] think that betting on 649 is really gambling. Or, you know playoff pools. It's not really gambling. What people would consider gambling would be more the you know, going to the casino, or on-line gambling, or poker, or whatever it is. That's what they would consider gambling. Where the other parts [sports betting and lotteries] are so ingrained as part of our culture that they don't probably perceive it as gambling.

(R) Mr. Sedaris: Um, I expect that they would treat it in much the same protocol as alcohol addiction or drug addiction. And they would go through a screening format to see what role gambling plays in the person's life. And if they recognize it [gambling] as a problem, then they would go from there… they would probably look to students services to have some sort of level of awareness of some sort and then deal with the students with the problem behaviour – referral to the counsellor that kind of thing

(S) Mr. Leduc: They're [teachers] against youth gambling, but I don't know if they're against gambling in general.

(R) Mr. Sedaris: No we haven't gone that route. We have a counsellor and the counsellors work in the community as well for the CLSC [Centre local de services communautaires – Local community service centre]. So those services are available for parents and members of the community, but we have not had a large scale awareness campaign. We just don't perceive it as a need. Like I said part of it is also the culture acceptance of gambling in certain forms.

(R) Mr. Sedaris: Right now – at this age it doesn't seem to be a huge concern. But who's to say when they leave here how much – how they get into it and how much more of a problem it is. Right now it's really quite a social thing – you know it's a way to be

part of your peer group – and to watch the game together and to talk about the game – just like the way it is with the staff – you know people will join the play off pool to be part of the social – you know the social reasons as well.

(IC) Mr. Afsar: The teacher, if two kids are playing dice at the far back of the classroom without bothering anybody, the teacher won't bother them. But if we're [security] called for help, then there's a problem. Unfortunately, I think some teachers prefer to keep it low.

In reflecting on how to reduce gambling, one informant described the role governments play in youth gambling and problem gambling.

(IC) Mr. Afsar: Gambling activities have always existed and they will always do. As long as the government favours the building of casinos, there's always gonna be gambling activities… It's always been a risk, all gambling games are a risk for students. That [gambling] brings them [students] straight to the casino, not to college, to the casino. To put money in the government's pockets! … I think we should stop making such as big thing about it [gambling], we should stop talking about putting casinos here and casinos there. The casino is the government putting money in his pockets. But the kid doesn't know that. To him [the youth], gambling is just a way of winning money… I'm gonna ask you a question, how much tax do we pay on a litre of gas? More than half. For what? Supposedly for services. But is changing the location of a casino a service? Still, that's where a lot of money is going. In the meantime, the potholes in the streets are not fixed. The prolonging of [highway name] is not done. Let's stop being blindfolded, the government is burdening us with stupidities, and we want to focus our research on children. No. we should focus our research on the adults who are governing us. In the sense where, do we know

where they want to lead us? If we change the location of the casino, is that going to help reduce gambling problems? There are people who commit suicide because they have no money.

5.4 DISCUSSION

This study used focus group discussions with youth and key informant interviews with school officials from three schools in greater Montreal to explore local social norms surrounding gambling. The conversations revealed six main themes surrounding local gambling attitudes and social gambling norms: youth susceptibility to risk taking, youth vulnerability to local trends, the importance of accessibility in influencing gambling behaviours, gambling as a male-dominated activity, social acceptance of gambling and perceived risk of gambling behaviours.

In describing the appeal of gambling among youth, responses were often qualified by two commonly held beliefs. The first was that youth and especially males are susceptible to risk taking, making them naturally more prone to engaging in gambling activities. Youth are vulnerable to experimenting with new and often risky behaviours. As such it may be more prudent to treat gambling with more seriousness in school environments and supplement health education with a component on gambling where links between gambling and health are explicit. There was little mention of gambling programs at their own schools. The only real mention of gambling interventions occurred when gambling had posed a problem in the schools in the past and a disciplinary response was required to address the gambling problem at a given school. Establishing concurrent strategies across school policies and ensuring consistent messages are relayed to youth from teachers may improve youth conceptualization of gambling as a health issue.

The second related belief involved how certain gambling activities had become popularized in the media and local areas. The recent increase in

advertisements for gambling activities that have become prolific in many forms of media particularly around sporting events was identified as a factor influencing youth awareness and perceptions about gambling. The role of media may be re-evaluated and efforts to reduce conflicting messages that youth are exposed to should be considered. For example, positive images of gambling showing excitement and money generated through gambling participation in contrast with images of bankruptcy and suicide may be confusing for youth and particularly those youth who may be more prone to risk taking.

Students and key informants also described how local gambling cultures were dominated by males. Informal and legalized gambling was most common and accepted and engaged in by both youth and adult males. Whether informal poker games at home, friendly sports tournament pools or legalized gambling activities, gambling was described as traditionally a male dominated activity. The accessibility of gambling activities was considered important and played a role in gambling participation. In the case of dice, the accessibility and convenience of playing dice was considered a factor influencing their popularity. Related to the accessibility of gambling activities was the theme surrounding the social acceptance of gambling that emerged from student and key informant responses. The acceptability of gambling activities was evident in discussions with youth and key informant responses. Gambling has become increasingly culturally accepted, and many youth have grown up with gambling in their lives. Recruiting parents for future studies may provide another valuable perspective to further understand the relationship between social norms and youth gambling.

Descriptions of particular gambling activities revealed that there was a spectrum of perceived risk and harmlessness of formal (i.e., legalized) and informal gambling activities. The continuum of risk of gambling activities was slightly ambiguous and varied among accounts of key informants and

students. Sports betting, lottery pools, and home poker games did not register as a real health concern for students or key informants, while playing dice in schools was deemed a problem. Further, key informants recognized that youth may not consider gambling issues as health issues. Despite problems (i.e., financial, bullying, not respecting school rules) with students gambling in schools in the recent past described by students and informants, and interventions required within schools to reduce youth gambling, it was somewhat surprising to discover a generally accepted view about the harmlessness of many gambling activities

The findings from this study are not generalizeable to youth and school officials across Montreal or elsewhere and are only representative of the participants (Kingry et al. 1990). There is also a possible source of bias from this study due to the voluntary nature of focus group participants. Schools and participants were selected based on support for and interest in the study and results may reflect participants who have more experience or are more aware of gambling activities. Despite limitations involved in qualitative studies, this study presents a glimpse at the social and cultural context of gambling among youth from the perspectives of students and school officials.

This qualitative inquiry emphasized the role of social norms in schools and communities in influencing youth perceptions and attitudes about gambling. The study points to opportunities for interventions that can be made in school and home neighbourhoods to target youth gambling. Results suggest interventions to reduce youth gambling should address the local accessibility of gambling opportunities as well as the acceptability of gambling activities among social networks (e.g., school, peer, family) of youth. The results also imply the need for a consistent health message concerning gambling that conveys risks and benefits of gambling. There is furthermore a clear message from this work about the vulnerability of boys and young men to the lure of both formal and informal gambling. Strategies aimed at boys

and young men could include the provision of health-promoting alternative activities tailored to meet the recreational and leisure preferences of males. While sports betting and gambling in general such as playing poker is considered quite common and acceptable for males, provisions need to be made to make sure youth and particularly males are provided with the facts about the risks of gambling as well as alternate options to gambling.

The role of access is often an underemphasized theme in gambling studies. Results of the study suggest a continuum of risk for gambling whereby certain gambling activities like casino gambling were considered more risky or potentially harmful while others like lotteries, sports pools and cards were considered social and harmless. Acceptance of certain gambling activities like sports betting, or participation in activities by authoritative figures like teachers, mentors or parents in the case of lottery pools or card games may send messages to impressionable youth that gambling is relatively safe. Key informants articulated opinions about the role of the media in persuading youth to engage in gambling activities. The presence of gambling advertisements on tv, the radio and on the internet through pop-up windows were listed by participants as prevalent. Television and internet advertisements suggesting gambling is simple and could have huge payouts, like "1 dollar, $2 million!" (i.e., Quebec 49's[44] current ad campaign), or ads encouraging participants to play, such as "Just Say "I do!"" (i.e., Extra's[45] current ad campaign) may have a more serious impact on youth perceptions about gambling activities, odds of winning, and potential risks of

44 Quebec 49 is a provincial lottery run by Loto-Quebec with a grand prize of two million. The current ad slogan is " 1 dollar, $2 million!" , and a humourous ad is currently running featuring Rachid Badouri, a well-known local comedian/celebrity (Loto-Quebec 2007)

45 Extra is a provincial lottery run by Loto-Quebec with a $500 000 maximum jackpot. Extra is an add-on lottery option that can be purchased in combination with

participating. Conflicting messages presented encouraging gambling and warning against the negative consequences of gambling may exacerbate the difficulty of decision making for youth, as demonstrated with informant discussions of gambling advertisements on local radio and sports networks.

These results point to possibilities for gambling programs that incorporate local knowledge and target social norms and broader environments that influence youth gambling behaviours. Schools may seek to adopt official public positions on gambling activities that are projected to youth among schools and engage youth and parents in health education on gambling. This may reduce incorrect notions about the odds of winning in gambling and make links between gambling and health explicit. Related health behaviours like smoking present a clear and consistent message to youth and the broader public (Hesketh et al. 2005). Smoking is no longer an unambiguous behaviour but instead has a clear public image of a behaviour that is linked with negative health consequences with little grey area to question whether certain forms or practices of tobacco consumption are healthy.

Gambling is clearly more difficult to address from a health promotion standpoint since certain forms of gambling are still widely embraced as healthy forms of socialization, and indeed for many people periodic participation in gambling activities does not pose a health risk. There is no safe dose of tobacco but there may be, for many or even the majority, a safe "dose" of gambling. Although some gambling activities may seem innocuous, and indeed in moderation can be relatively harmless, the ability of youth to distinguish between which gambling activities may be more or less risky like

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another lottery product (e.g., Lotto649, Quebec49) offered in Quebec (Loto-Quebec 2007)

between poker, sports betting, dice and lottery tickets, and what level of gambling is prudent may be unclear.

CHAPTER SIX
SUMMARY, CONTRIBUTIONS AND DISCUSSION

6.1 SUMMARY OF CHAPTERS

This dissertation examined youth VLT gambling in Montreal. This involved an analysis of the availability of VLTs in school environments, individual and contextual factors influencing VLT use among youth, youth perceptions about gambling opportunities and activities, and views of social norms around youth gambling held by youth and school officials. The thesis had four objectives:

a) To describe the socio-spatial distribution of gambling opportunities surrounding high schools in Montreal using geo-spatial data.
b) To model VLT use by youth in Montreal as a function of individual and social-contextual characteristics (including VLT accessibility), from survey data.
c) To develop an in-depth understanding of why youth gamble through collective conversations with youth.
d) To develop an understanding of the social norms supportive of youth gambling in schools through collective conversations with youth and depth interviews with school officials

6.2 THEORETICAL CONTRIBUTIONS

Traditional research on gambling has emphasized individual characteristics and cognitive processes as primary factors influencing gambling. This study considered an individual-level focus as insufficient to understand how gambling occurs in social contexts. This dissertation contributes to literature on health geography and population health by situating individual gambling behaviours in local social and physical contexts and acknowledging the role of individual experience and perception in influencing behaviours.

The thesis research contributes to our understanding of the ongoing structure and agency debate in the social and health sciences by providing a specific example of the interplay between social structures and individual

agency. The combination of approaches in this study enabled an exploration of social structures that may influence behaviours. Social structures for youth VLT gambling were considered by assessing the socio-spatial distribution of VLT opportunities in the school neighbourhoods of youth. The individual agency of youth was explored through analysis of a large survey of youth behaviours and attitudes about gambling and group discussions with youth about their perceptions and beliefs about gambling and VLTs. The interplay between individuals and the surrounding social structures or environments were considered in three ways. First, the individual student survey data was assessed in relation to the socio-spatial data on VLT opportunities and the average household income of school neighbourhoods to consider individual attitudes and behaviours in context with specific local school environments. Second, perceptions youth hold about gambling, local gambling opportunities and norms were explored to assess how youth view and understand their local social and physical environments and make decisions about gambling based on those beliefs. Finally, the perceptions of school officials contributed to understanding of the interplay between structure and agency through a better understanding of how youth gambling is influenced by local school norms and are also embedded in the local environments that are supportive of gambling.

Social equity issues were emphasized through consideration of the distribution of gambling opportunities in youth environments as an example of the broader processes that produce health inequalities. Results demonstrate that youth have differential access to and beliefs about gambling, and illustrate the importance of relationships between place and health that reflect broader social inequities. Findings of the dissertation support a critical evaluation of how societies are organized in ways that allow social inequities that result in health inequalities. The study demonstrates how social processes make vulnerable populations even more vulnerable to health inequalities, like poor youth who are raised in neighbourhood

environments with disproportionate burdens of opportunities for risky health-related behaviours like gambling.

6.3 SUBSTANTIVE CONTRIBUTIONS

This dissertation provided a base of information about the individual and environmental factors associated with young people using VLTs by: assessing the socio-spatial distribution of youth VLT gambling opportunities, identifying individual predictors of youth VLT gambling, exploring youth attitudes and motivations towards gambling and VLTs specifically, and exploring school official views on local social norms for youth gambling.

Chapter three explored youth gambling by describing connections between individual behaviours, individual characteristics and the attributes of areas. The spatial and social patterning of VLTs in school neighbourhoods was considered in relation to the individual gambling behaviours of youth. The study found that students who attend schools in poor or inner city neighbourhoods were more likely to encounter VLTs in their school environments (i.e., within 500m) than socio-economically advantaged youth.

Analyses of a survey of 2672 students in Montreal revealed the majority of students between the ages of 12 and 24 who completed the survey reported gambling in the past year and nearly the same proportion of students reported having friends who gamble. Nearly ten percent of youth reported gambling weekly, and over twelve percent of youth reported using VLTs. The strongest predictors of VLT use among the sample included sex (male), use of drugs (particularly marijuana), attendance at schools where gambling is prevalent, having friends who use VLTs, and travelling to non-home destinations after school.

While some of these risk factors have been established in the literature (i.e., male sex, alcohol use, smoking, marijuana use, peer gambling behaviours), the dissertation provides novel results about risk factors for

gambling that have not been previously explored (i.e., VLT access, after school behaviours). Further, the study found that a lot of youth gamble, youth enjoy gambling, and youth have access to gambling activities. Findings also suggest that schools where gambling behaviours are high among students influence individual gambling behaviours and attitudes and may be indicative of local gambling norms.

The after school destination variable was a new concept that has not been explored in gambling research before. The role of after school destination in predicting VLT use provided a key finding in the study and a finding with clear policy implications. Youth travelling from school without supervision or positive role models may be more vulnerable to risk-taking particularly if local opportunities for risky behaviours are abundant.

Student age, daily mode of transportation between school and home, VLT access (i.e., uptake of VLT licences in neighbourhood), VLT concentration (i.e., VLT licences within 500m of schools) did not generally influence the odds of VLT use reporting among any subgroup. While the study did not demonstrate that youth attending schools in disadvantaged neighbourhoods are those students who are playing VLTs, preceding spatial analyses did demonstrate that there was a social gradient to gambling opportunities. Students attending the poorest schools are thus faced with a disproportionate burden of at least one opportunity for engaging in risky health-related activities.

The student sample was not representative of youth in Montreal, however, it was a large sample of youth and some results did accurately reflect behavioural theories suggesting peer and family characteristics and behaviours are pivotal in the development of behaviours among youth. For example, youth reporting friend VLT use had much greater odds of reporting VLT use themselves. The same was true for youth attending schools where gambling behaviours were prevalent. Further, youth reporting VLT use also

often reported gambling with friends and family members. These results point to the importance of school environments and peer behaviours, and family influences in decision-making regarding health-related behaviours and specifically gambling.

Chapter four explored why youth gamble, how youth perceive and interact with their local environments, where gambling fits into the daily lives of youth, and how youth make sense of gambling as a health-related issue through focus groups with youth from three high schools in Montreal. Youth gamble for excitement, because everyone else gambles, and gambling fills a void when there are no other opportunities for recreation and leisure. This finding suggests that youth may not actually have an inherent interest in gambling and may be equally or more interested in alternate activities of socialization or recreation. Youth articulated how males gamble more often than females and prefer activities that facilitate socializing in groups like sports betting, poker and dice, while females described infrequent interest in solitary gambling activities like lottery and scratch tickets.

Student participants recognized a social gradient in gambling participation and were cognizant that low income groups were most likely to gambling because they typically had the greatest desire and need for a financial gain that a gambling win might offer. This finding coincides with studies that have demonstrated low income groups spend proportionally more of their income on gambling than higher income groups. Focus group discussions demonstrated the awareness of youth about how excessive gambling had the potential for adverse health and social impacts, with youth usually offering up outcomes like suicide, depression, loss of friends and family, and bankruptcy. While the students in the focus groups were cognizant of potential harm that can arise from gambling behaviours, they often described gambling as a relatively harmless activity if played in moderation.

Youth discussions solicited advice from participants on how youth gambling may be reduced. Students considered greater levels of education regarding the potential negative consequences of gambling and a better understanding of the actual odds of winning from particular gambling activities may work to reduce problem gambling. Youth participants cautioned that education and awareness campaigns alone would be insufficient to change youth behaviours and cited examples of failed tobacco reduction strategies overemphasizing education and awareness programs. Greater individual control with respect to setting limits for gambling and imposing personal limits on gambling for financially vulnerable groups were offered as possibilities for reducing gambling. Youth almost always identified the need to concurrently reduce gambling opportunities and increase opportunities for health-promoting leisure activities to effectively reduce youth gambling.

Focus group discussions were the first, to the author's knowledge, to reveal how youth feel about VLTs and gambling and why youth gamble in relation to local contexts and gambling opportunities. Witnessing student responses in an interactive setting with peers emphasized the connection between the social and physical environment by clarifying how youth attitudes and decisions surrounding gambling can form in social settings (e.g., among peer groups) and in local environments (e.g., school and home neighbourhoods). Responses about gambling and excessive gambling emphasized the importance of both social contexts like friends, family and school settings, and aspects of physical environments including gambling accessibility and local opportunities for health-promoting leisure activities in influencing gambling attitudes and behaviours. Youth discussions suggest that current structures in place discourage a reduction in youth gambling and that the appeal or demand for gambling may be in large part due to the access or supply of gambling opportunities.

In Chapter five interviews with school guidance counsellors and a security manager were conducted and considered in combination with group discussions previously held with youth to better understand the social norms that are supportive of youth gambling. Key informants described gambling as an accepted tradition for males and how youth and especially males were naturally drawn to risky behaviours. Key informants considered youth to be vulnerable to local trends and the media, especially around sporting events, were identified as a major player in keeping youth aware and interested in gambling. The role of accessibility and acceptability of gambling was confirmed by school officials as fundamental in influencing local gambling behaviours among both youth and adult populations. Assessing focus group discussions and key informant interviews emphasized not only the physical environment but also the social environment including the gambling attitudes of peers, family members and mentors.

Gambling was described by youth and key informants as increasingly common and acceptable behaviour so long as gambling participation remained moderate. Descriptions revealed a scale of perceived risk that depends on particular gambling activities and the frequency of participation. For example, sports betting or home poker games were considered relatively harmless while activities like VLTs or casino gambling were considered to have more potential risk with use. Key informants recognized that youth gambling was a potential issue in schools but generally did not view the issue as a current school priority. This analytic process enabled the perceptions and experiences related to gambling to be solicited from two separate vantage points, from students and school officials who were both able to speak about youth gambling with experience.

6.4 METHODOLOGICAL CONTRIBUTIONS

This dissertation employed mixed-methods. These included: socio-spatial analysis of the distribution of VLT locations and socio-economic

conditions in neighbourhoods surrounding high schools in Montreal, statistical analyses of a large gambling survey of students in Montreal, focus group discussions with youth from three high schools, and key informant interviews with school officials. Research on health-related behaviours has traditionally overlooked the role and meaning of place and how it influences experiences of health. While epidemiological analyses can identify relationships between social structures or environmental conditions and health or individual characteristics and health, these studies in isolation cannot explain why these patterns exist. Factors influencing youth health and development are complex and methods of inquiry must therefore be sufficiently multifaceted and sensitive to develop nuanced understandings of opportunities and constraints in which youth health-related decisions are made.

Mixed methods were used in this study with the aim of providing a sensitive assessment of relationships between local environments, individual characteristics and individual beliefs and values to understand how gambling behaviours are embedded in local social and physical environments. Results from this study supports future research that looks beyond an exclusive focus on either individual (i.e., aggregated individual-level data, individual perceptions and beliefs) or socio-environmental (i.e., risk factors of local environments, local resources, social processes), and instead strives to blend approaches by recognizing that both individual and environmental factors influence health-related behaviours such as gambling.

Spatial analyses of local school environments enabled the identification of social inequalities in VLT opportunities around school neighbourhoods that point to health inequalities through greater VLT and other gambling uptake among students attending those schools. Survey analyses allowed for an exploration and description of youth gambling behaviours and the identification of individual risk factors for VLT use. Merging the two studies

enabled the individual behaviours and characteristics of youth to be described in relation to the social measure of school neighbourhood income and the physical measure of VLTs.

Collective discussions with youth and individual interviews with school officials permitted for a nuanced understanding of the role of individual characteristics, local environments and social processes in influencing VLT and other gambling behaviours from the mouths of youth and school officials. Focus group discussions explored why particular gambling behaviours are prevalent among youth, youth perceptions about local gambling behaviours, and challenges and opportunities for youth gambling from a public health perspective. Focus group discussions and key informant interviews were useful in extending individual survey data by letting youth describe in their own words why youth gamble in relation to local opportunities and social contexts. Responses from youth group discussions extended survey data by allowing youth to articulate responses verbally and around survey items previously asked like what motivates youth to gamble. Findings of the thus study demonstrate the value of combining descriptive and interpretive methods for understanding complex health-related behaviours and provide rationale for a greater recognition of the role of place in influencing gambling.

6.5 POLICY CONTRIBUTIONS

This dissertation provides one example of unequal distribution of community level resources that contribute to poor health. Results suggest that both local social and physical environments influence individual gambling behaviours, and gradients in the access to gambling among social class lines has clear public health implications. Results emphasize how governmental (Quebec) policies and sanctions related to gambling can produce unequal local opportunities for VLT use.

VLT sites are not evenly distributed across Montreal and this unequal distribution may result in unequal consequences across populations.

Abundant gambling opportunities in socially disadvantaged areas may add an increased burden of risk to local populations already experiencing excess exposure to unsafe or unsavoury neighbourhood conditions (lack of access to fresh and affordable food, limited and poor quality park spaces, increased access to alcohol and tobacco products, abundance of low quality housing). School neighbourhoods with an abundance of VLTs may also correspond to areas with a greater burden of poor health, heightened access to other local characteristics such as a lack of alternate opportunities for health-promoting behaviours like parks or recreation centres.

Ongoing literature suggests that neighbourhood environments have an influence on the health outcomes of residents over and above the characteristics of individuals and that features of the environment are not something that should be ignored for the health of populations. A spatial distortion of gambling opportunities in poor school neighbourhoods raises ethical and environmental justice issues. Greater consideration of the socio-economic and health consequences of the distribution of VLTs and other gambling opportunities in local communities may have the greatest impact on mediating the relationship between social inequalities and gambling-related outcomes. Local public health departments may thus consider people-based (income, behaviours) and place-based (number of VLT venues, recreation opportunities) interventions to reduce the excess burden of gambling opportunities on vulnerable communities.

The study revealed that youth who are vulnerable to VLTs are those who do not return home directly after school. This finding points to the role of parental supervision or guidance in gambling uptake and the financial constraints of some families that reduced their capacity to monitor and engage with their children at key periods throughout the day. After school programming or increased access to opportunities for healthy recreation may reduce gambling temptation and uptake among youth who lack parental

supervision to engage them positively in the afternoon and early evening periods immediately following school.

Males were also consistently identified as most vulnerable to gambling problems. Interventions must be sensitive to the gendered-nature of gambling. The provision of healthy alternatives for recreation that appeal to youth and particularly males in school and possibly home environments may result in reduced rates of youth gambling. Policies directed at youth gambling require further studies to better understand and address the gender bias in gambling activities that place males at heightened risk of experiencing gambling problems.

Survey results and focus group discussions revealed youth gamble to make money and also that youth may be unclear of the actual odds of gambling. Youth even recommended increased educational and awareness programs in their advice to reduce adverse impacted of gambling. Results clearly point to the role of public health educational strategies directed at youth, and particularly those below the legal gambling age, in improving the understanding of the real gambling odds and chances of winning from various gambling activities including VLTs. Also, given the findings about the frequency of gambling and VLT gambling specifically among youth between the ages of 12 and 25, regulations surrounding gambling and enforcement of these regulations must be more critically evaluated. Local regulations concerning gambling advertising (e.g. content, style, messages) must continue to make efforts to reduce the exposure and appeal to youth, particularly in light of youth awareness of gambling opportunities and activities. Public health information on gambling, and the odds of winning and losing at various gambling activities need to be transparent in the local environments (schools, home, gambling venues) of youth to ensure youth have the opportunity to make more informed decisions about gambling.

The role of access or supply of gambling opportunities was a major theme in this research. Efforts to reduce the accessibility of gambling opportunities are imperative to reduce the uptake or demand for gambling among youth. The VLT access measure provided a rating for the proportion of prospective VLT venues with and without VLT licenses. Although the results from this study did not show a relationship between school proximity to VLTs and VLT use, methodological (i.e., sampling) issues were also discussed as potential reasons for these findings. Results did contribute to greater public dialogue on the issue of local access to VLTs among socio-economically disadvantaged neighbourhoods and youth groups in particular. School principals, a representative of Loto-Quebec, high school students, bar owners and the author of this thesis were interviewed by CBC (2006) following the publication of some results of the work in Chapter three (i.e., spatial analysis of VLTs, school neighbourhoods and socio-economic conditions assessed in relation to student survey) in the Canadian Journal of Public Health.

Gambling problems are being increasingly recognized as a public health issue and concern for young people's participation in gambling has grown. VLTs have been identified as a major contributor to gambling controversy and gambling problems particularly among vulnerable populations. Recent legislative changes in Quebec by Loto-Quebec include plans to reduce the numbers of VLTs in socio-economically disadvantaged areas and moratoriums have been placed on growth and expansion of the provincial VLT network. Plans to reduce VLTs from socio-economically disadvantaged neighbourhoods must also consider the impact of VLTs in school neighbourhoods and particularly disadvantaged ones.

Gambling interventions should also target school-level policies and may include efforts to treat gambling more seriously in school environments by ensuring the links between gambling and health are made explicit to youth. In schools where focus groups and key informant interviews were

conducted there was little mention of gambling programs in place despite youth gambling being described as an intermittent problem in the past. For example, youth and key informants articulated that gambling held the potential for harm but also considered moderate participation and particular gambling activities to be relatively innocuous. Acceptance of certain gambling activities and disapproval over others in school environments may send conflicting messages to youth. The same may be true for youth awareness of gambling participation by authority figures like teachers or mentors as well as parents.

The gambling-related beliefs, norms or expectations held by the people that youth identify with, respect, or look up to, can influence the views they have and decisions they make about gambling. Youth behaviours are typically influenced by family members, peers, teachers and other role models. Recruiting parents for future studies may increase the understanding of the gambling attitudes and behaviours of young people, given the finding in this dissertation that many youth gamble with family members, and the role of family settings in influencing youth behaviours has been well established.

Government promotion and provision of gambling may influence the views of youth gambling a more legitimate activity in youth views. The increase in legalized gambling may have a ripple effect on youth interest and access to gambling through increased gambling participation by adults and the eventual uptake of informal and formal gambling activities among youth. The role of media in persuading youth to engage in gambling activities may exacerbate the difficulty of decision making for youth. The gambling messages carried by media and local advertising are an obvious area that holds potential to reduce youth gambling. The recent increase in advertisements for gambling that have become prolific in many forms of media (particularly around sporting events) was identified as a factor influencing youth awareness and perceptions about gambling.

Romanticized versions of gambling appear in the media where average everyday individuals win large jackpots, sending an underlying message that anyone can be a winner. Gambling images of groups of friends going out to a casino for a night out of fun and excitement may send the message that gambling is an acceptable form of socialization that produces positive outcomes. Gambling awareness campaigns emphasize the downside of gambling, where stories of bankruptcy, family devastation and community disruption are possible outcomes of gambling. Positive images of gambling showing excitement and money generated through gambling participation in contrast with images of bankruptcy and suicide may be confusing for youth and particularly those youth who may be more prone to risk taking. Establishing strategies to develop a consistent message that is relayed to youth from teachers, school officials and parents may improve understanding of the risks involved with gambling.

These results point to opportunities for gambling programs designed around youth that incorporate youth attitudes and beliefs and target social norms and accessibility of gambling that ultimately influence the decisions youth make about gambling. The adoption of official public positions on gambling activities that are projected to youth among schools and the engagement of youth and parents in health education on gambling may be fruitful in reducing false notions about gambling odds and making links between gambling and health explicit. Public health messages around smoking present a clear and consistent message to youth and the broader public (Hesketh et al. 2005). Smoking has an unambiguous public image of a behaviour that is linked with negative health consequences. Gambling is clearly more difficult to address from a health promotion standpoint since certain forms of gambling are still widely embraced as healthy forms of socialization, and indeed for many people periodic participation in gambling activities does not pose a health risk. Although some gambling activities may seem innocuous, and indeed in moderation can be relatively harmless, the

ability of youth to distinguish between which gambling activities may be more or less risky may be unclear.

6.6 CONCLUDING REMARKS

Gambling is not a simple policy issue but instead cuts across multiple policy domains including social, economic, public health and justice policy. Changing legislation and the evolution of gambling activities and venues have produced many opportunities for gambling in local environments. Policy makers and analysts have a responsibility to create gambling policy that considers special and vulnerable groups including youth; is sensitive to local contexts, and has up- to-date knowledge of current gambling activities (e.g., evolving gambling technologies). Policy makers need to resolve the cost-benefit equation that gambling presents to the public and the specific beliefs that youth hold about the cost-benefit tradeoffs of gambling. Understanding the complex and interrelated factors that influence gambling and the host of outcomes associated with excessive gambling is imperative to establish an appropriate and acceptable role for gambling in society. Costs and benefits analyses can inform sensitive policy development that seeks to maximize worthwhile initiatives that can capture the economic benefits while controlling the unacceptable social by-products of gambling.

Governments need to continually evaluate the costs and benefits of legalized gambling activities and critically assess the ethics of funding public services (including services for problem gamblers) through revenues obtained through legalizing video lottery terminals and other gambling activities. Governments are aware of the seriousness of gambling addiction; this is evident by recent efforts to implement features within VLTs to discourage VLT gambling abuse and excessive behaviours. VLT machine modifications in Canada include the introduction of a visible (digital) clock, credit and currency counters on terminal machines recording time and money spent on machines, screen pop-up displays after set time intervals (e.g., 30 minutes) to

remind users of their gambling duration and similar displays providing contact information for problem gambling services (Alberta Gambling and Liquor Commission 2007). Governments may also wish to evaluate the ethics of funding public services (including services for problem gamblers) through revenues obtained through legalized gambling activities including video lottery terminals.

This study confirms the need for greater focus on the present and future impacts of gambling on youth. This is particularly apparent given the increased acceptability and accessibility of gambling activities in recent decades across neighbourhood landscapes in Quebec, Canada, and many other countries around the world. Never before have societies enabled so many legalized opportunities to exist. Gambling products can be now accessed at convenience stores, bars, restaurants, casinos, at travel destinations, in the comfort of home environments on television programs (i.e., poker tournaments) or on home video gambling packages and over the internet. Gambling exposure also extends to sporting events, radio broadcasts, billboards and other visual and web-based media. Longitudinal research that examines how the expansion of gambling has influenced gambling attitudes, expenditures and social and health costs among populations across time is an area where longitudinal analysis would be well suited.

A population health approach to gambling is critical in promoting the continual and recursive dialogue required between policy makers, health care analysts, academic researchers, and the broader public in order to develop and maintain 'good' gambling public policy. This research examined connections between the socio-spatial distribution of VLT gambling opportunities, individual gambling behaviours and attitudes of youth, and perceptions about gambling held by youth and school officials. Related studies have taken a multidimensional approach on examining health behaviours. For example, Frohlich et al. (2002) integrated community level resources,

social practices and individual perceptions and experiences of these structures in their examination of youth smoking behaviours in Quebec.

Greater attention needs to be given to the role of social environments in promoting or discouraging gambling activity, particularly in light of the prevailing gambling culture that has evolved in North American society in recent years. In order for gambling behaviours to change and be long-lasting, greater attention needs to be given to the structures in place that influence gambling. An exploration of local level features and local interpretations of gambling can support locally sensitive programs or policies that may be more readily received at the local level and thus most effective. Jarvis and Wardle (2005), in their discussion of smoking, drinking and drug use describe the overall perspective that this dissertation takes to understanding youth VLT gambling:

> *Smoking, drinking and drug use are individual behaviours which involve an element of personal choice. It is perhaps for this reason that they have frequently been seen not in a broad social context but as a matter of individual responsibility; if smokers wish to avoid the adverse effects of tobacco on their health, it is for them to change their behaviour and quit. If they don't, they have brought ill health on themselves and it is no-one else's fault. Persistence in unhealthy behaviours is seen as simply fecklessness rather than as a response to social circumstances. This victim-blaming approach is unhelpful, in that it fails to address underlying questions of why disadvantaged people are drawn to these behaviours and the nature of the social and individual influences that maintain them. It has also been signally unsuccessful in leading to the development of effective interventions to achieve behaviour change in disadvantaged groups.*
>
> (Jarvis & Wardle 2005:224-225).

Greater accessibility to gambling opportunities among vulnerable populations has been witnessed fairly consistently in Canada and elsewhere. There is a need to shift the distribution of gambling opportunities to begin to

address gambling patterns that follow socio-economic gradients resulting in higher gambling rates among vulnerable populations remaining stable. The burden of gambling on population health may remain relatively constant given that a new population may be developing gambling problems while those who are diagnosed are being treated. Efforts to discourage youth gambling might be best achieved through a multifaceted approach that decreases local gambling opportunities, provides greater enforcement around existing opportunities, includes education and awareness programs conveying gambling odds and consequences, and provides alternative social and recreational opportunities for youth.

This dissertation research confirms the need to account for the broader contexts in which youth decisions are made (i.e., factors influencing individual youth gambling intentions), in addition to assessing individual psychological determinants. Progress has been made with behaviours like smoking and more recently diet and physical activity to recognize that these health behaviours are deeply embedded in social and cultural environments and perceptions of those environments. Debates on gambling are still largely focused on individual factors that influence gambling and properties of gambling activities that are more or less addictive. There is a need to shift the thinking and research on gambling to focus 'upstream' on the environments which undoubtedly will influence the burden of gambling that lies in the potentially very large numbers of people facing undocumented, sub-clinical outcomes like family conflict and financial strain.

GLOSSARY OF TERMS AND CONCEPTS IN DISSERTATION

Area or place effects: Refers to the health effects of variables that tell us something about the places or contexts, and not simply the people who inhabit them. (Kawachi et al 2002).

Biomedical view of health: A biomedical view of health typically views the human body as a series of components that each performs a specific function. A deviation from normal body functioning within any of these components is assumed to be the result of an injury or the invasion of disease (Evans & Stoddart 1994, Rootman & Raeburn 1994, Edgington 1989).

CGPI: The Canadian Problem Gambling Index (CPGI) is a tool developed to measure problem gambling in Canada in general population surveys and was developed by a research team affiliated with the Canadian Centre on Substance Abuse (CCSA) (Ferris & Wynne 2001). The CGPI contains 31 items that focus on determining gambling involvement, problem gambling assessment and problem gambling correlates (e.g., contextual measures including family history of gambling, substance use problems and predispositions of the gambler to problem gambling (e.g., types of comorbidity). The problem gambling assessment component, the Problem Gambling Severity Index (PGSI), categorizes individuals into five gambling behaviour groups, non-gambling, non-problem gambling, low risk gambling, moderate risk gambling, and problem gambling (Ferris & Wynne 2001). The CGPI shares similarities with traditional measures of problem and pathological gambling, the South Oaks Gambling Screen (SOGS) and the Diagnostic Statistical Manual of Mental Disorders (DSM-IV).

Contextual effects: A contextual effect, relates to the broader political, cultural, or institutional context, for example the presence or absence of features that are intrinsic to places, such as infrastructural resources, economic policies of states, social and public support programmes. Contextual effects can also include influences of cultural background, such as the ethnic, religious, and linguistic make up of communities, as well as certain ecological or environmental influences. (Kawachi et al. 2002).

Compositional effects: A compositional explanation for area differences ascribes the variations in health outcomes to the characteristics of individuals who reside in them. For example, higher mortality rates in high poverty areas may simply reflect the worse health status of poor individuals who make up a poor area. (Kawachi et al 2002).

DSM-IV: The (Diagnostic and Statistical Manual of Mental Disorders, 4th edition). DSM-IV is a screening tool for adult pathological gambling. In 1977 'pathological gambling' was included in the ninth edition of the

International Classification of Diseases. In 1980, pathological gambling was included in the Diagnostic and Statistical Manual of American Psychiatric Association third edition (DSM-III) (American Psychiatric Association 1980). Pathological gambling is classified as a disorder or impulse control and criteria for pathological gambling are similar to those for alcohol and drug dependence. The DSM-III was revised in 1987 (DSM-III-R) and again in 1994 and is now reviewed to as the DSM-IV.

Electronic gambling machines (EGMs): are devices that offer several games per device on a video screen. There are three primary types of EGMs, including slot machines (e.g., like those found in casinos), video slots, video lottery terminals (VLTs), and video poker (Turner & Horbay 2004).

Gambling: An activity involving the risk of money or something of value on the outcome of a game or event when the probability of winning or losing is uncertain and to some magnitude is determined by chance (Shaffer & Korn 2002).

Health-Related Behaviour or Health Behaviour: in this dissertation considers actions or behaviours of individuals and groups that influence (directly or indirectly) overall health and quality of life.

Health inequalities: Health inequalities describes differences and disparities in health outcomes of groups and individuals (Kawachi et al. 2002).

Health inequity: describes health inequalities considered unfair or attributed to some form of injustice (Kawachi et al. 2002).

Lifecourse approach: Studies adopting a lifecourse perspective examine how early life factors such as socio-economic conditions and biological, behavioural and psychosocial processes influence health status in adulthood and across the lifecourse (Hertzman & Power 2003, Kuh et al. 2003, Kawachi et al. 2002, Lynch et al. 1997b, Power & Hertzman 1997).

Pathological gambling: first included in the third edition of the Diagnostic and Statistical Manual (DSM-III) of the American Psychiatric Association (1980), where it was described as an impulse control disorder. An impuse control disorder is described as an inability to resist overwhelming and irrational drives. Other impulse control disorders include, for example, kleptomania and pyromania. Eventually pathological gambling was classified in terms similar to those for psychoactive substance dependency and is now described to reflect its chronic, progressive character (APA 1987, 1980). Pathological and problem gamblingn are often used interchangeably. This dissertation is concerned more broadly with all problems stemming from gambling participation, including pathological gambling.

Population Health: A conceptual framework for thinking about why some people are healthier than others through research into the multiple health determinants of individual and population level health, including social, cultural and economic ones (Frank 1995, Evans et al. 1994, Mustard & Frank 1991, Evans & Stoddart 1990).

The Population Health Program (PHP) of the Canadian Institutes for Advanced Research (CIAR) created in 1987 was central to the development of the population health framework in Canada and supported research by an interdisciplinary group on the social and economic determinants of health (CIAR 2004, Frankish et al. 1999, Frank 1995). The PHP was designed to develop a better understanding of consistently superior health enjoyed by those members of society in upper socio-economic positions (Evans et. al 1994).

Problem gambling: is described a gambling behaviour that creates negative consequences for the gambler, others in his or her social network, or for the community (Ferris & Wynne 2001). Problem gambling is linked to financial problems such as debt and bankruptcy, divorce, lost productivity, crime (such as theft and fraud), depression and suicide.

Problem Gambling Severity Index (PGSI): a component of the CPGI

Risk-taking behaviours: are exploratory or experimental activities that are typically considered a common and a central developmental process of adolescence as youth move towards adulthood (Michaud 2006). Risky behaviours produce variable outcomes and contribute to overall adolescent morbidity and mortality. Examples of risky youth behaviours include substance use, sexual activity, poor dietary habits and lack of physical activity, risky driving, and violent acts (Kulbok et al. 2002).

Social environment: Terms and meanings describing social environments vary (Meade 2000). In a recent review McNeill et al (2006) identified five dimensions of the social environment including social support and social networks, socio-economic position and income inequality, racial discrimination, social cohesion and social capital, and neighbourhood factors.

Social norms: are described as recognized patterns of behaviour, standards or codes of conduct for behaviours, and shared expectations for how people behave (Wiium et al. 2006; Rimal & Real, 2003, Ajzen, 1991; Cialdini et al, 1991, Schofield et al. 2003).

Socio-economic health gradient: describes poorer health outcomes experienced by individuals or groups in lower socio-economic positions.

South Oaks Gambling Screen-Revised Adolescent - is an adolescent adaptation of the SOGS for adults (Lesieur & Blume, 1987).This 12-item questionnaire is used to screen for at-risk and problem gamblers (Winters, Stinchfield, & Fulkerson, 1993).

South Oaks Gambling Screen (SOGS) – 20-item gambling assessment tool designed by Henry Lesieur and Sheila Blume to assess pathological gambling, based on the DSM-III criteria for pathological gambling (Lesieur and Blume 1987).

Video Lottery Terminal (VLT) - VLTs are a form of EGM that offer participants a selection of games to choose from including slot games, video poker, video blackjack or keno (Turner & Horbay 2004). Unlike traditional slot machines that pay out winnings with coins, winnings from a VLT are often cashed out by way of a voucher that is requested by a player when a desired number of credits (wins) have been accumulated. VLTs tend to be located in familiar community venues like neighbourhood bars and restaurant lounges where gambling activities have not traditionally been accessible (Cox et al. 2005).

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APPENDICES

APPENDIX A – CJPH PAPER

Video Lottery Terminal Access and Gambling Among High School Students in Montréal

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ABSTRACT

Background: Gambling is a risky behaviour that involves uncertain financial outcomes, can be addictive, and has been associated with strongly adverse social and public health outcomes. We wanted to assess whether socio-economic and gambling-related-opportunity environments of neighbourhoods affected the uptake of video lottery terminal (VLT) gambling among Montréal youth.

Methods: Spatial and statistical analyses were conducted to examine geographical patterns of neighbourhood socio-economic conditions, VLT sites (n=407), and high school locations (n=305) within the Montréal Census Metropolitan Area (CMA). VLT concentration within high school neighbourhoods was measured to examine how the number of VLT opportunities varies according to socio-economic status of the school neighbourhood. A student survey was analyzed using logistic regression analysis to explore the role of individual (student) characteristics and environmental (neighbourhood) characteristics in predicting the VLT gambling behaviours reported among a sample (n=1206) of high school students.

Results: Video lottery gambling opportunities are more prevalent near schools located in socio-economically deprived neighbourhoods compared with schools located in more affluent neighbourhoods. The principal individual risk factors for VLT gambling were shown to be male sex, peer VLT-use, substance use, as well as the after-school routines of youth.

Interpretation: The spatial distribution of VLTs reflects local geographies of socio-economic disadvantage and may have a pronounced impact on students attending schools in lower income neighbourhoods, especially those with individual risk factors. Efforts to reduce gambling-related public health costs may want to take into account the socio-spatial distribution of gambling opportunities, particularly in the local environments that youth frequent.

MeSH terms: Adolescent behaviour; gambling; risk-taking; social conditions; school characteristics; video lottery terminals (VLTs)

La traduction du résumé se trouve à la fin de l'article.

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Gambling is a risky behaviour that involves uncertain financial outcomes, can be highly addictive, and has been associated with strongly adverse social and public health outcomes.[1-4] This paper scrutinizes the distribution of video lottery gambling sites in Montréal and its suburbs in an effort to better understand the social and spatial patterning of gambling opportunities in relation to youth environments. Moreover, we aim to reveal how both individual and contextual risk factors influence the likelihood of gambling among vulnerable youth populations. There is general consensus among public health researchers and practitioners that the social environment plays a substantial role in shaping the health-related behaviours and overall health status of populations.[5-9] The role that the social environment plays in shaping the developmental and health outcomes of adolescents (aged 12 to 19 years) is of particular importance, since youth are a vulnerable and impressionable population. Like childhood experiences and behaviours developed, the adolescent life stage can influence healthy or unhealthy lifestyles that follow youth into their adult years.[10-14] As this period is marked by changing experiences, roles, and opportunities for independence, youth are often highly influenced by their peer groups, family contexts, as well as their school and neighbourhood environments. Social environments of particular relevance to youth thus include families, peers, schools and neighbourhood contexts.[12,14] This research examines gambling as a poignant example of a health-related behaviour, and examines VLTs in particular since they are recent and proximal additions within the local urban landscapes that youth frequent.

Gambling is linked to other health-related activities including suicide, depression, criminal and delinquent behaviour, domestic violence and increased chances of developing multiple addictions.[2,15-18] Studies on youth have revealed that up to 80% gamble in a given year and also exhibit problem gambling behaviours at higher rates than adults.[16,19-21] Underage youth gambling is thus becoming an increasing public health concern due to the potential adverse health effects as well as the proven popularity and accessibility of gambling activities to minors.[1-3,21-24] VLTs are a type of Electronic Gaming Machine

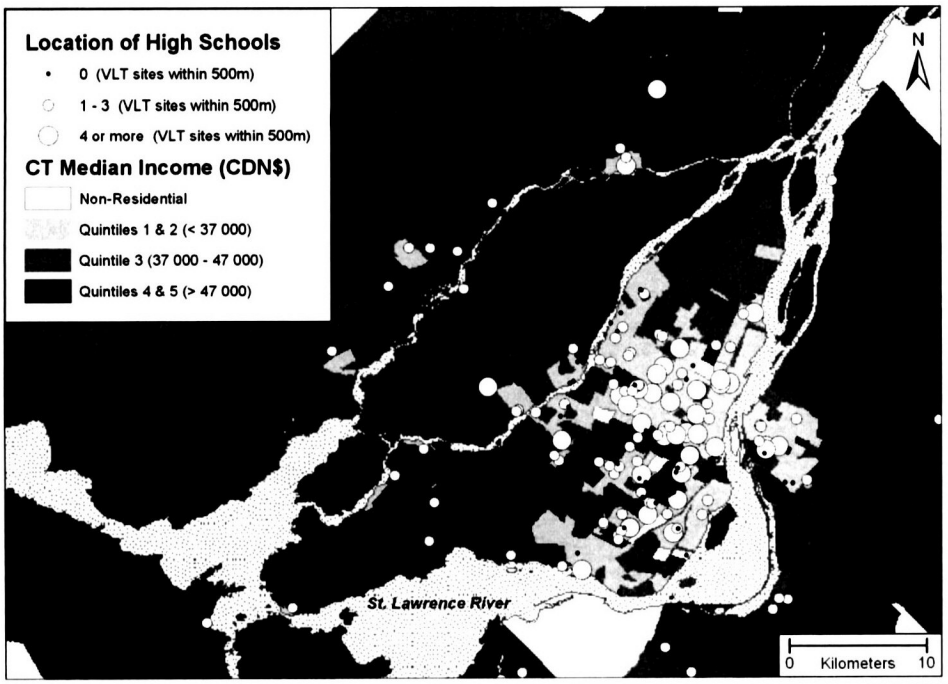

Figure 1. Concentration of VLT sites within 500m of high school locations and neighbourhood median household income

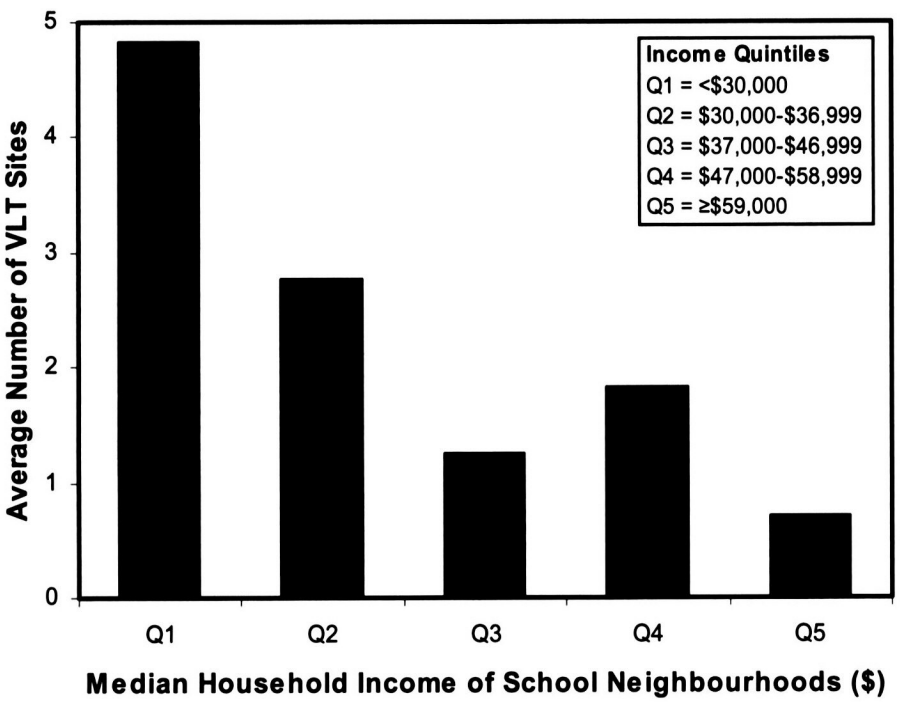

Figure 2. VLT opportunities decline with increasing school neighbourhood affluence

(EGM) that offer players the choice of several fast-paced games such as poker and blackjack. These machines provide visual and audio effects, and are considered to be more addictive than traditional gambling activities; as a result, VLTs are commonly referred to as the 'crack cocaine' of gambling.[25,26] Since their legalization in Québec (1994), the video lottery system has grown into a network of 14,007 VLTs distributed among 3,267 sites throughout the province, one third of which are located in Montréal.[27] Furthermore, VLTs combined with lotteries in Quebec have consistently been the greatest sources of revenue of all legalized gambling activities for Loto-Québec since their legalization. Minors (under 18 years of age in Québec) are legally restricted from using VLTs and participating in other gambling activities. Access to and use of VLTs is common in Québec however, due to negligent enforcement at VLT sites, which are located within liquor-licenced establishments.

Preceding this analysis, Gilliland and Ross[28] found a spatial distortion of VLTs and socio-economic conditions in Montréal and Laval, demonstrating that those with the lowest socio-economic status – and thus the most to lose from adverse impacts of gambling – have the greatest accessibility to VLTs. Efforts to reduce the burden of gambling-related public health costs may wish to take into account the socio-spatial distribution of gambling opportunities, particularly in the local environments that vulnerable youth frequent. We thus examine youth VLT gambling by analyzing the spatial distribution of VLTs and socio-economic conditions in the daily school environments of youth across greater Montréal. In addition, we examine the gambling behaviours of youth in the context of their school neighbourhoods to better understand youth behaviours as a product of local opportunity structures. We accomplish this by examining VLT access surrounding schools in relation to youth VLT gambling behaviours reported among a sample of students attending eight high schools in greater Montréal.

METHODS

Using spatial and statistical analyses, we examined locational patterns of VLT sites (n=407), high school (n=305) locations, neighbourhood socio-economic conditions and individual youth gambling behaviours. Addresses and the number of VLT licences for all liquor establishments in 2002 were obtained for the province of Québec from the *Régie des alcools, des courses et des jeux* (RACJ), the provincial department that oversees the gambling industry. School listings and addresses for the province of Québec were obtained from the *Ministère de l'Éducation* in 2002. Demographic data for the Montréal CMA was obtained at the census tract level from the 2001 Canadian Census, provided by Statistics Canada. Information about the gambling behaviours of high school students (n=1206) was

obtained from a larger survey administered in 2003 through the International Centre for Youth Gambling Problems and High-Risk Behaviours at McGill University.[29] The response rate was 97%.

VLT gambling opportunities of high school neighbourhoods were explored by linking neighbourhood socio-economic conditions with school and VLT locations in Montréal. A geographic information system (GIS) was created to explore VLT sites and socio-economic conditions of high school neighbourhoods. The listings of all liquor establishments with VLT licences and secondary schools within the Montréal CMA were geocoded using GeoPinPoint [DMTI Spatial] and ArcGIS [ESRI] software. Neighbourhoods defined by census tracts (n=862) were characterized using indicators of socio-economic conditions. We then calculated a measure of 'VLT concentration' for every high school neighbourhood to examine how VLT opportunities surrounding high schools vary according to socio-economic characteristics. VLT concentration was calculated by measuring the number of VLTs accessible to students via a short walk (500m) from a secondary school. ArcGIS software was used to create 500m radius buffers around schools and to calculate the number of VLT sites within each school buffer.

Finally, we investigated the role of individual and environmental factors in gambling uptake using a 'VLT access' measure and analysis of gambling behaviours reported by our sample of high school students. Our environmental 'access' measure for VLTs was aimed to capture proximal density as well as regularity or 'commonness' of VLTs relative to the occurrence of liquor establishments. Since VLT licences are voluntary for bar owners, VLT access will not necessarily be high in an area unless these establishments have obtained VLT licences. We felt that this assessment of neighbourhood VLTs allowed for a more sensitive evaluation of how normalized or acceptable VLT gambling might be in particular neighbourhoods. We thus considered both the availability of VLTs in the environments youth frequent, as well as the role of localized gambling cultures in influencing the likelihood of whether or not a youth chooses to gamble.

A spatial interaction model based on straight-line distances between secondary school (n=8) postal code centroids and VLT locations was used to create an index of VLT access.[30] Each school was characterized as either high or low risk using this measure. VLT access was calculated by looking at the number of VLT licences (0, 1 or multiple) at the 10 nearest bars to the school's 6-digit postal code. The VLT access of each school was calculated by summing the product of a distance weight (starting at 1 for the closest VLT and using 10% decrements until the weight reaches 0, at the 11th VLT) and a VLT score (0 for bars with no VLT licence, 1 for bars with a single licence and 2 for bars with more than a single licence).

The high school survey examined a range of demographic characteristics, and explored a variety of gambling and related behaviours and preferences (for a detailed description of instruments used and administration of survey, see Byrne et al.[31]). Twelve items at the end of the survey queried youth more specifically about use, exposure and awareness of VLTs. All logistic regression analyses were done using SPSS [Version 13] software. Explanatory variables selected for the final analysis included: sex; age; whether or not the student had smoked, used drugs or consumed alcohol in the past 12 months; whether or not VLTs are used by friends of the student; whether or not the student returns home directly after school; and the VLT access measure.

TABLE I
Summary of High School Student Survey

		% of Full Sample (n=1206)	% of Gamblers (n=686)	% of VLT Users (n=113)
Gender	Male	49.8	54.8	69.9
	Female	50.2	45.2	30.1
Age (years)	12-13	18.2	14.4	11.5
	14-15	44.6	43.7	38.1
	16-17	34.9	39.5	45.1
	18+	2.3	2.3	5.3
Grade Level	Grade 7/8	27.0	23.3	19.5
	Grade 9-12	73.0	76.7	80.5
Other Behaviours	Drink	58.4	70.3	81.4
	Smoke	28.3	35.3	54.0
	Use drugs	23.2	31.2	55.8
	Gamble weekly	10.4	18.2	39.8
	Gamble alone	6.5	9.2	12.4
	Friends play VLTs	20.6	27.7	62.8
After School Destination	Not directly home	12.4	15.9	30.1

RESULTS

High schools located in the inner city typically provide the highest VLT accessibility to their student populations with high numbers (4 or more) of VLT gambling sites located nearby. Further, there are greater VLT opportunities in economically disadvantaged high school neighbourhoods across Montréal. In contrast, most of the high schools in the suburban (and often higher income) areas in Montréal have fewer (typically zero) VLTs within walking distance. Students attending schools in the inner-city or economically disadvantaged neighbourhoods are much more likely to encounter VLTs during their daily school routines (within 500m of the school they attend) than those students attending schools in suburban and economically advantaged neighbourhoods (Figure 1). Indeed, analyses of VLT opportunities by high school neighbourhood income show that as the median household income of the school neighbourhood decreases, the number of VLTs within 500m of high schools increases in gradient-like fashion (Figure 2) .

High school participants included a total of 1,206 youth (606 females, 600 males) from grade seven to grade twelve (age range 12-20 years old) (Table I). Over half (56.9%) of the high school students reported having gambled in the last 12 months, and 10.4% reported playing on a weekly basis. Over one fifth (20.6%) of the students reported having friends who play VLTs, and 9.4% reported playing VLTs themselves. While males and females were almost equally likely to report gambling within the last year, males reported using VLTs more than twice as often as females. In addition to gambling, more than half (58.4%) of the sample indicated that they consumed alcohol in the past year, and roughly a quarter indicated that they smoked or used drugs in the past year (28.3% and 23.2%, respectively).

TABLE II
Modeling VLT Uptake Among High School Students

Outcome Variable		Participates in Video Lottery Terminal Gambling (Yes, No*)	
Independent Variables		**Odds Ratios**	**Confidence Intervals**
Sex	Men	1.76†	1.09, 2.85
	Women*	1.00	–
Age Group	18+	1.33	0.36, 4.87
	16-17	1.05	0.47, 2.34
	14-15	0.87	0.39, 1.94
	12-13*	1.00	–
Substance Use	Yes	2.67‡	1.38, 5.15
	No*	1.00	–
Friends Play VLTs	Yes	5.90§	3.68, 9.46
	No*	1.00	–
Home After School	No	2.72§	1.63, 4.54
	Yes*	1.00	–
VLT Access	High	1.36	0.78, 2.39
	Low*	1.00	–

* Reference category – Not applicable
† p<0.05 ‡ p<0.01 § p<0.001

Of those high school students reporting that they had played VLTs in the last 12 months (n=113), over two thirds (69.9%) were males. Nearly two thirds (62.8%) of students who play VLTs reported that their friends also play VLTs, and over one third (39.8%) reported gambling on a weekly basis. The vast majority (81.4%) of VLT players consumed alcohol in the past 12 months, and over half smoked or used drugs in the past year (54.0% and 55.8%, respectively). Further, VLT players more often reported gambling alone and going to a non-home destination after school when compared with the non-VLT players.

In models of VLT use, we find that males have nearly twice (1.76) the odds of playing than females (Table II). As age increases, the odds of VLT use increase slightly. Students who have smoked, consumed alcohol or drugs in the last year have over two and a half times greater odds of playing a VLT than high school students who do not engage in these behaviours. Students whose friends use VLTs have nearly six (5.90) times greater odds of using VLTs themselves as those with friends who do not use VLTs. Further, we find that the patterned behaviours of youth on their daily journey to and from school also make a difference in the probability of VLT use. Students who do not go straight home after school were found to have nearly three (2.72) times greater odds of VLT gambling than those who do go straight home from school. Finally, in examining VLT availability within school neighbourhoods, we find nearly 40% greater odds (1.36) of VLT use for students attending schools in neighbourhoods that have high VLT access.

DISCUSSION

High schools located in lower income and inner-city neighbourhoods have more video lottery opportunities within a short walk (500m or less) than high schools located in higher income and suburban neighbourhoods in Montréal. Although many schools have VLTs within walking distance, those schools in low-income neighbourhoods tend to have higher concentrations of VLTs nearby. The distribution and accessibility of VLTs surrounding high schools in Montréal reflects local geographies of socio-economic disadvantage.

Results from analyses of the student survey indicate that VLT players are more likely to be male, and are typically youth who are engaging in multiple risky behaviours such as drinking, smoking and drug use. VLT players typically travel to another destination before returning home on a daily basis, and are also more likely to have friends who use VLTs. These findings suggest that local VLT opportunities, peer behaviours, and after-school activities may play a role in the development of youth gambling behaviours. We consider both the availability of VLTs in the environments youth frequent, as well as the role of localized gambling cultures as strong factors influencing the likelihood of whether or not a youth chooses to gamble. Efforts to reduce the burden of gambling-related public health costs must recognize the socio-spatial distribution of gambling opportunities, particularly in the local environments that vulnerable youth frequent. Furthermore, the findings suggest that greater attention needs to be given to the role of social environments in promoting/discouraging gambling activity, particularly in lieu of the prevailing gambling culture that has evolved in North American society in recent years.

Subsequent research will move beyond a focus on school environments to explore the home environments of youth and will link the neighbourhood level and individual level data in a hierarchical linear model. Additionally, the perceptions of youth will be explored using focus group interviews so that a better understanding is gained of the attitudes about VLTs held by young people in relation to public health, entertainment, acceptability and restriction of use and access. Understanding youth norms and attitudes about VLTs is imperative to begin to prevent the onset of this risky behaviour and work towards reducing the adverse social, health and economic costs of VLT addiction.

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RÉSUMÉ

Contexte : Le jeu est un comportement très risqué dont les résultats financiers sont incertains, qui peut être accrocheur et qu'on a associé avec des résultats fortement indésirables pour la santé sociale et publique. Nous voulions déterminer si le contexte socioéconomique et l'environnement qui offre des possibilités reliées aux jeux de hasard dans les quartiers avaient un effet sur l'utilisation des appareils de loterie vidéo (ALV) chez les adolescents de Montréal.

Méthodologie : Nous avons procédé à des analyses spatiales et statistiques pour déterminer les tendances géographiques de la conjoncture socioéconomique des quartiers, les sites d'ALV (n=407) et l'emplacement des écoles secondaires (n=305) dans la région métropolitaine de recensement (RMR) de Montréal. Nous avons mesuré la concentration d'ALV dans les quartiers des écoles secondaires afin de déterminer comment le nombre de possibilités offertes par les ALV varie en fonction de la situation socioéconomique du quartier où se trouve l'école. Nous avons analysé les résultats d'un sondage mené auprès des élèves en procédant à une analyse de régression logistique afin d'étudier le rôle des caractéristiques individuelles (étudiant) et environnementales dans la prédiction des comportements de jeu aux ALV déclarés dans un échantillon (n=1 206) d'élèves du secondaire.

Résultats : Les possibilités de jeu par appareils de loterie vidéo sont plus prévalentes à proximité des écoles situées dans des quartiers démunis sur le plan socioéconomique comparativement à celles qui se trouvent dans des quartiers plus riches. On a démontré que les principaux facteurs de risque individuels de jeu aux ALV étaient le sexe masculin, l'utilisation d'ALV par des pairs, la consommation de substances, ainsi que les habitudes des adolescents après les heures de cours.

Interprétation : La répartition spatiale des ALV reflète les caractéristiques géographiques locales du désavantage socioéconomique et peuvent avoir un effet prononcé sur les élèves qui fréquentent des écoles de quartiers à revenu plus faible, et en particulier sur ceux qui présentent des facteurs de risque individuels. Les efforts visant à réduire les coûts de la santé publique reliés aux jeux de hasard peuvent tenir compte de la répartition sociospatiale des possibilités de jeu de hasard, et en particulier de l'environnement local fréquenté par les adolescents.

APPENDIX B – GAMBLING SURVEY QUESTIONNAIRE

The following questionnaire refers to your gaming preferences and behaviours. For each statement, please indicate your response by filling in the circle next to the statement you agree with. All information is confidential and anonymous. We do not require any identifying information and only our research team at McGill University will have access to this information. The entire questionnaire should take approximately 30 minutes to complete.

For each question, please fill in marks like this: ● **NOT like this: ⊗ ⊘ ⊘**

1 Gender: ○ Male ○ Female

2 Age:

○ Under 10 years of age	○ 16-17 years of age	○ 35-44 years of age
○ 10-11 years of age	○ 18-20 years of age	○ 45-54 years of age
○ 12-13 years of age	○ 21-24 years of age	○ 55-64 years of age
○ 14-15 years of age	○ 25-34 years of age	○ Over 65 years

3 Country of Residence:

○ Canada
○ USA
○ Other
please specify: _____

4 List ALL languages spoken at home:

○ French	○ Italian	○ Hindi	○ Korean	○ First Nations
○ English	○ Hebrew	○ Chinese	○ Polish	○ Other
○ Spanish	○ Greek	○ Japanese	○ Dutch	please specify:
○ Portuguese	○ Arabic	○ Vietnamese	○ Russian	

_____

5 Marital status:

○ Single
○ Married/common-law
○ Separated or divorced
○ Widowed

6 Are you currently in school?

If yes, indicate your grade level:

○ Grade 3 – 6
○ Grade 7 – 8
○ Grade 9 – 12
○ CEGEP
○ Trade/Technical School
○ University
○ Graduate/Post-doctoral

If no, what is the highest level of education completed?

○ Grade 3 – 6
○ Grade 7 – 8
○ Grade 9 – 12
○ CEGEP
○ Trade/Technical School
○ University
○ Graduate/Post-doctoral

7 What is your <u>primary</u> occupational status?

- ○ Work full-time
- ○ Work part-time
- ○ Unemployed
- ○ Student
- ○ Retired

8 In the past 12 months, how often have you:

	Never	Less than once a month	1 – 3 times a month	Once a week or more
Consumed alcohol.....	○	○	○	○
Smoked tobacco (cigarettes, cigars)	○	○	○	○
Used marijuana or hashish	○	○	○	○
Used other illicit drugs ..... (e.g. cocaine, speed, GHB, ecstasy)	○	○	○	○

9 In the past 12 months, how much time have you spent on the Internet <u>per day</u>?

- ○ Less than 30 minutes
- ○ 30 to 60 minutes
- ○ 1 to 2 hours
- ○ 2 to 4 hours
- ○ Over 4 hours

10 In the past 12 months, how often have you made online purchases for personal use?

- ○ Never
- ○ Occasionally (less than once per week)
- ○ Regularly (once a week or more)
- ○ Daily (once a day or more)

11 In the past 12 months, how often have you participated in an on-line chat group/chat room?

- ○ Never
- ○ Occasionally (less than once per week)
- ○ Regularly (once a week or more)
- ○ Daily (once a day or more)

12 **<u>In the past 12 months</u>,** how often have you played each of the following games <u>for money</u>? (This does NOT include games you play on the Internet.)

	Never	Less than once a month	1 – 3 times a month	Once a week or more
Lottery scratch cards/pull tabs	○	○	○	○
Lottery draws (e.g. Lotto 6/49)	○	○	○	○
Horse racing.....	○	○	○	○
Sports betting ……..	○	○	○	○
Sports betting through the lottery (e.g. "Mise-O-jeu™" in Quebec)	○	○	○	○
Bingo.....	○	○	○	○
Slot machines	○	○	○	○
Electronic gaming machines (e.g. VLT, video poker, Pokies)	○	○	○	○
Casino table games (e.g. Blackjack, poker, etc.)	○	○	○	○
Dice/craps	○	○	○	○
Cards.....	○	○	○	○
Jai Lai.....	○	○	○	○
Maj Jong	○	○	○	○
Spread betting	○	○	○	○
Stock market	○	○	○	○
Other	○	○	○	○

please specify: _____

13 **How old were you the first time you played gambling games <u>for money</u>? (NOT including games you play on the Internet.)**

- ○ I have never played gambling games for money
- ○ Under 10 years of age
- ○ 10-11 years of age
- ○ 12-13 years of age
- ○ 14-15 years of age
- ○ 16-17 years of age
- ○ 18-20 years of age
- ○ 21-24 years of age
- ○ 25-34 years of age
- ○ 35-44 years of age
- ○ 45-54 years of age
- ○ 55-64 years of age
- ○ Over 65 years

14 Indicate <u>all</u> the reasons you play gambling games (NOT including games you play on the Internet). (You may choose more than one answer.)

- ○ I have never played gambling games
- ○ Fun
- ○ Relaxation
- ○ Excitement
- ○ Entertainment
- ○ Be with friends/make new friends
- ○ Relieve anxiety or depression
- ○ Relieve boredom
- ○ Escape from problems
- ○ Feel older
- ○ Make money
- ○ Other
  please specify: _____

15 Out of all the reasons you listed above, what are the <u>TOP THREE (3) REASONS</u> you play gambling games? (NOT including games you play on the Internet.) (Choose <u>up to 3 answers</u>.)

- ○ I have never played gambling games
- ○ Fun
- ○ Relaxation
- ○ Excitement
- ○ Entertainment
- ○ Be with friends/make new friends
- ○ Relieve anxiety or depression
- ○ Relieve boredom
- ○ Escape from problems
- ○ Feel older
- ○ Make money
- ○ Other
  please specify: _____

16 <u>In general</u>, who do you play gambling games with? (NOT including games you play on the Internet.) (You may choose more than one answer.)

- ○ I have never played gambling games
- ○ Alone
- ○ Friends
- ○ Parents
- ○ Siblings/relatives
- ○ Co-workers
- ○ Strangers
- ○ Other
  please specify: _____

17 Indicate <u>all</u> the gambling opportunities near your home (within 50 miles or 80 km).

- ○ There are no gambling opportunities near my home
- ○ Casino
- ○ Electronic gaming machines (Video Poker, VLT, Pokies)
- ○ Racetrack
- ○ Lottery ticket outlet
- ○ Bingo
- ○ Other
  please specify: _____

18 Below are twenty different statements.
Rate how much you <u>agree</u> or <u>disagree</u> with each statement.

	Agree very much	Mildly agree	Neutral	Mildly disagree	Disagree very much
1. It is always best to think about something before you jump into it	○	○	○	○	○
2. I'm the kind of person who is usually not very cautious	○	○	○	○	○
3. I like being around people who are willing to take a chance	○	○	○	○	○
4. I like doing things when I know exactly what is going to happen	○	○	○	○	○
5. It's good to be a little careless	○	○	○	○	○
6. I'm the kind of person who avoids risks	○	○	○	○	○
7. With the kinds of problems you can run into these days, I'd rather not hitchhike	○	○	○	○	○
8. I'd rather walk than ride with someone who drives very fast	○	○	○	○	○
9. In most situations, it is often better not to take a chance	○	○	○	○	○
10. I'd rather not gamble if there is another way of doing things	○	○	○	○	○
11. I'm the kind of person who likes risks	○	○	○	○	○
12. In most things, it is probably better to know exactly where you are going	○	○	○	○	○
13. I stay away from situations that are likely to be dangerous	○	○	○	○	○
14. I like people who are a little wild	○	○	○	○	○
15. I sometimes gamble just for the excitement it brings	○	○	○	○	○
16. I'm the kind of person who is usually careful about what I do	○	○	○	○	○
17. I'd rather play with fire than not play at all	○	○	○	○	○
18. It is better to be safe and not to do something than to do something and be sorry for it later	○	○	○	○	○
19. It's exciting to break someone else's rules	○	○	○	○	○
20. I like getting into situations that I don't know if I can get out of	○	○	○	○	○

19 Some people play gambling games on the Internet for fun (WITHOUT money) using practice sites, free games, free trials, etc. Other people gamble on the Internet WITH money.

The following questions (19 – 25) refer to playing gambling games on the Internet WITHOUT money. Later on, we will ask you questions about gambling on the Internet WITH money.

In the past 12 months, how often have you played the following gambling games on the Internet for fun (WITHOUT money)?

	Never	Less than once a month	1 – 3 times a month	Once a week or more
Roulette	○	○	○	○
Blackjack	○	○	○	○
Baccarat	○	○	○	○
Dice (craps)	○	○	○	○
Keno	○	○	○	○
Sports betting	○	○	○	○
Horse racing	○	○	○	○
Slot machines or other electronic gaming machines (e.g. VLT, video poker, pokies) ..	○	○	○	○
Cards	○	○	○	○
Jai Lai	○	○	○	○
Maj Jong	○	○	○	○
Spread betting	○	○	○	○
Stock market	○	○	○	○
Other	○	○	○	○

please specify: _____

20 **How old were you the first time you played gambling games on the Internet for fun (WITHOUT money)?**

- ○ I have never played gambling games on the Internet
- ○ Under 10 years of age
- ○ 10-11 years of age
- ○ 12-13 years of age
- ○ 14-15 years of age
- ○ 16-17 years of age
- ○ 18-20 years of age
- ○ 21-24 years of age
- ○ 25-34 years of age
- ○ 35-44 years of age
- ○ 45-54 years of age
- ○ 55-64 years of age
- ○ Over 65 years

21 In the past 12 months, how many gambling sites have you played on regularly for fun (WITHOUT money)?

- ○ None
- ○ 1 Internet site
- ○ 2 to 5 Internet sites
- ○ More than 6 sites

22 In the past 12 months, how often have you played gambling games on the Internet for fun (WITHOUT money)?

- ○ Never
- ○ Occasionally (less than once a week)
- ○ Regularly (once a week or more)
- ○ Daily (once a day or more)

23 In the past 12 months, how much time have you spent playing gambling games for fun (WITHOUT money) <u>per session</u>? NOTE: A session is defined as anytime you log onto the Internet.

- ○ Never
- ○ Less than 30 minutes
- ○ 30 to 60 minutes
- ○ 1 to 2 hours
- ○ 2 to 4 hours
- ○ Over 4 hours

24 When you play gambling games on the Internet for fun (WITHOUT money), who do you usually gamble with? (You may choose more than one answer.)

- ○ I don't play gambling games on the Internet
- ○ Alone
- ○ Friends
- ○ Parents
- ○ Siblings/relatives
- ○ Co-workers
- ○ Strangers
- ○ Other
  please specify: _____

25 Why do you like to play gambling games on the Internet? (You may choose more than one answer.)

- ○ I have never played gambling games on the Internet
- ○ Fun
- ○ Relaxation
- ○ Excitement
- ○ Entertainment
- ○ Be with friends/make new friends
- ○ Relieve anxiety or depression
- ○ Relieve boredom
- ○ Escape from problems
- ○ Feel older
- ○ Make money
- ○ Other
  please specify: _____

26 The following questions refer to gambling on the Internet WITH money.

<u>In the past 12 months</u>, how often have you played the following gambling games on the Internet WITH money?

	Never	Less than once a month	1 – 3 times a month	Once a week or more
Roulette	○	○	○	○
Blackjack	○	○	○	○
Baccarat	○	○	○	○
Dice (craps)	○	○	○	○
Keno	○	○	○	○
Sports betting	○	○	○	○
Horse racing	○	○	○	○
Slot machines or other electronic gaming machines (e.g. VLT, video poker, pokies) ..	○	○	○	○
Cards	○	○	○	○
Jai Lai	○	○	○	○
Maj Jong	○	○	○	○
Spread betting	○	○	○	○
Stock market	○	○	○	○
Other	○	○	○	○

please specify: _____

27 How old were you the first time you played gambling games on the Internet WITH money?

- ○ I have never gambled on the Internet
- ○ Under 10 years of age
- ○ 10-11 years of age
- ○ 12-13 years of age
- ○ 14-15 years of age
- ○ 16-17 years of age
- ○ 18-20 years of age
- ○ 21-24 years of age
- ○ 25-34 years of age
- ○ 35-44 years of age
- ○ 45-54 years of age
- ○ 55-64 years of age
- ○ Over 65 years

28 <u>In the past 12 months</u>, how many gambling sites have you regularly played on WITH money?

- ○ None
- ○ 1 Internet site
- ○ 2 to 5 Internet sites
- ○ More than 6 sites

29 There are many places where a person might choose to gamble. Why do <u>you</u> choose to gamble <u>on the Internet</u>? (You may choose more than one answer.)

- ○ I have never gambled on the Internet
- ○ 24-hour accessibility
- ○ Graphics
- ○ Realistic-looking games
- ○ Sex appeal
- ○ Game diversity
- ○ High speed play
- ○ Bonuses (sign up, free cash, redeposit, referral…)
- ○ Competition (person to person gambling)
- ○ Convenience
- ○ Privacy
- ○ Anonymity
- ○ Less intimidating than a real casino
- ○ Easier to hide gambling from others
- ○ Don't need to leave the house to play
- ○ Good odds
- ○ Fair/reliable payouts
- ○ Other
  please specify:

  _____

30 Out of all the reasons you listed above, what are the <u>TOP THREE (3) REASONS</u> you gamble on the Internet? (Choose <u>up to 3 answers</u>.)

- ○ I have never gambled on the Internet
- ○ 24-hour accessibility
- ○ Graphics
- ○ Realistic-looking games
- ○ Sex appeal
- ○ Game diversity
- ○ High speed play
- ○ Bonuses (sign up, free cash, redeposit, referral…)
- ○ Competition (person to person gambling)
- ○ Convenience
- ○ Privacy
- ○ Anonymity
- ○ Less intimidating than a real casino
- ○ Easier to hide gambling from others
- ○ Don't need to leave the house to play
- ○ Good odds
- ○ Fair/reliable payouts
- ○ Other
  please specify:

  _____

31 What do you view as being the major drawbacks of gambling on the Internet? (You may choose more than one answer.)

- ○ There are no drawbacks to gambling on the Internet
- ○ Need a credit card
- ○ Worried about credit card fraud
- ○ Don't want to give personal information on-line (like my name and account numbers)
- ○ The bets might be rigged (no chance of winning)
- ○ Lack of casino ambiance (doesn't feel like a real casino)
- ○ Unsure if I could actually collect any winnings
- ○ Easier to hide problems with gambling
- ○ Other
  please specify: _____

32 Out of all the drawbacks you listed above, what do <u>you</u> view as being the <u>TOP THREE (3) DRAWBACKS</u> of gambling on the Internet? (Choose <u>up to 3 answers</u>.)

- ○ There are no drawbacks to gambling on the Internet
- ○ Need a credit card
- ○ Worried about credit card fraud
- ○ Don't want to give personal information on-line (like my name and account numbers)
- ○ The bets might be rigged (no chance of winning)
- ○ Lack of casino ambiance (doesn't feel like a real casino)
- ○ Unsure if I could actually collect any winnings
- ○ Easier to hide problems with gambling
- ○ Other
  please specify: _____

33 How did you come across your first Internet gambling site?

- ○ I have never visited an Internet gambling site
- ○ I clicked on a pop-up while I was on an Internet site unrelated to gambling
- ○ While I was surfing on the Internet, I decided to search for a gambling site
- ○ A friend recommended it
- ○ Advertisement on the Internet
- ○ Advertisement in a magazine/on television/on a poster
- ○ Promotion (e.g. free gambling CD)
- ○ Other
  please specify: _____

34 <u>In the past 12 months</u>, how much time have you spent gambling WITH MONEY <u>per session</u>?
NOTE: A session is defined as each time you log onto the Internet.

- ○ Never
- ○ Less than 30 minutes
- ○ 30 to 60 minutes
- ○ 1 to 2 hours
- ○ 2 to 4 hours
- ○ Over 4 hours

35 When you gamble on the Internet WITH MONEY, who do you usually gamble with?
(You may choose more than one answer.)

- ○ I don't gamble on the Internet
- ○ Alone
- ○ Friends
- ○ Parents
- ○ Siblings/relatives
- ○ Co-workers
- ○ Strangers
- ○ Other
  please specify: _____

36 In general, from where do you gamble on the Internet, either with or without money?
(You may choose more than one answer.)

- ○ I don't gamble on the Internet
- ○ At home
- ○ At work
- ○ At a friend's home
- ○ At school
- ○ At an Internet café
- ○ Cellular phone
- ○ Other
  please specify: _____

37 In the past 12 months, <u>most of the time</u>, WHEN have you gambled on the Internet?

- ○ I don't gamble on the Internet
- ○ Weekday mornings
- ○ Weekday afternoons
- ○ Weekday evenings
- ○ Weekend mornings
- ○ Weekend afternoons
- ○ Weekend evenings
- ○ Anytime I feel like it, day or night

38 In the past 12 months, what is the average amount of money you have spent gambling on the Internet <u>per session</u>? NOTE: A session is defined as each time you log onto the Internet.

- ○ None
- ○ $1 – $5
- ○ $6 – $10
- ○ $11 – $25
- ○ $25 – $50
- ○ $50 – $100
- ○ $100 – $500
- ○ $500 – $1000
- ○ Over $1000

39 In the past 12 months, what is the <u>most</u> money you have wagered in <u>one</u> Internet session?

- ○ None
- ○ $1 – $5
- ○ $6 – $10
- ○ $11 – $25
- ○ $25 – $50
- ○ $50 – $100
- ○ $100 – $500
- ○ $500 – $1000
- ○ Over $1000

40 In the past 12 months, what is the <u>most</u> money you have WON in <u>one</u> Internet session?

- ○ None
- ○ $1 – $5
- ○ $6 – $10
- ○ $11 – $25
- ○ $25 – $50
- ○ $50 – $100
- ○ $100 – $500
- ○ $500 – $1000
- ○ Over $1000

41 In the past 12 months, what is the <u>most</u> money you have LOST in <u>one</u> Internet session?

- ○ None
- ○ $1 – $5
- ○ $6 – $10
- ○ $11 – $25
- ○ $25 – $50
- ○ $50 – $100
- ○ $100 – $500
- ○ $500 – $1000
- ○ Over $1000

42 What method(s) of payment do you use to gamble on the Internet?
(You may choose more than one answer.)

- ○ I don't gamble on the Internet
- ○ Personal credit card
- ○ Credit card belonging to family member (with permission)
- ○ Credit card belonging to family member (without permission)
- ○ Debit card/ATM
- ○ Personal cheque
- ○ Wire/bank transfer
- ○ Other
  please specify: _____

43 When gambling on the Internet, how often do you go back on-line another day to win back money you lost?

- ○ Never
- ○ Some of the time (less than half the time I lose money)
- ○ Most of the time (more than half the time I lose money)
- ○ All the time

44 In the past 12 months, <u>while gambling on the Internet</u>, how often have you:

	Never	**Less than once a month**	**1 – 3 times a month**	**Once a week or more**
Consumed alcohol.....	○	○	○	○
Smoked tobacco (cigarettes, cigars).....	○	○	○	○
Used marijuana or hashish	○	○	○	○
Used other illicit drugs ..... (e.g. cocaine, speed, GHB, ecstasy)	○	○	○	○

45 Answer these questions ONLY if you are UNDER 18 YEARS OF AGE. If you are 18 years of age or over, skip ahead to question 46.

NOTE: **gambling** refers to betting money on activities (e.g., lottery, cards, sports wagers, bingo, slot machines, casino-type games, sporting events, games of skill, etc.) with a chance of winning money. This can include gambling on the Internet.

1. In the past year, how often have you found yourself thinking about gambling or planning to gamble?

- O Never
- O Once or Twice
- O Sometimes
- O Often

2. During the course of the past year, have you needed to gamble with more and more money to get the amount of excitement you want?

- O Yes
- O No

3. In the past year, have you ever spent much more than you planned to on gambling?

- O Never
- O Once or Twice
- O Sometimes
- O Often

4. In the past year, have you felt bad or fed up when trying to cut down or stop gambling?

- O Never
- O Once or Twice
- O Sometimes
- O Often
- O Never tried to cut down

5. In the past year, how often have you gambled to help you escape from problems or when you are feeling bad?

- O Never
- O Once or Twice
- O Sometimes
- O Often

6. In the past year, after losing money gambling, have you returned another day to try and win back money you lost?

- O Never
- O Less than half the time
- O More than half the time
- O Every time

7. In the past year, has your gambling ever led to:

a) Lies to your family?	O Never	O Once or Twice	O Sometimes	O Often
b) Arguments with family/friends or others?	O Never	O Once or Twice	O Sometimes	O Often
c) Missing school?	O Never	O Once or Twice	O Sometimes	O Often

8. In the past year, have you ever taken money from the following without permission to spend on gambling:

a) School dinner money or fare money?	O Never	O Once or Twice	O Sometimes	O Often
b) Money from your family?	O Never	O Once or Twice	O Sometimes	O Often
c) Money from outside the family?	O Never	O Once or Twice	O Sometimes	O Often

46 Answer these questions ONLY if you are 18 years of age or over.

NOTE: **gambling** refers to betting money on activities (e.g., lottery, cards, sports wagers, bingo, slot machines, casino-type games, sporting events, games of skill, etc.) with a chance of winning money. This can include gambling on the Internet.

During the past year:

	YES	NO
1. Have you been preoccupied with gambling (e.g. thinking about gambling, planning to gamble, or thinking about ways to get money to gamble with)?	○	○
2. Have you needed to gamble with more and more money in order to get the amount of excitement you want?	○	○
3. Have you tried repeatedly to control, cut back or stop gambling, without being able to?	○	○
4. Have you felt restless or irritable when attempting to cut down or stop gambling?	○	○
5. Have you gambled to escape from problems or when you were feeling bad?	○	○
6. After losing money gambling, have you often returned another day to get even (try to win back money you lost)?	○	○
7. Has your gambling let to lies to family members, your therapist, or other people in order to conceal your involvement with gambling?	○	○
8. Has your gambling led you to commit illegal acts such as forgery, fraud, theft, or embezzlement to finance it?	○	○
9. Has your gambling ever led you to jeopardize or lose a significant relationship, job, or career or educational opportunity?	○	○
10. Have you had to rely on others to provide money to relieve a desperate financial situation caused by gambling?	○	○

Only a few more questions to go…

1. In the morning, how long does it USUALLY take you to get to school?

- ○ Between 1 – 10 minutes
- ○ 11 – 30 minutes
- ○ More than 30 minutes

2. In the morning, how do you USUALLY get to school? (Choose only one answer.)

- ○ Walk
- ○ Bike
- ○ School bus
- ○ City bus and/or Metro
- ○ Car

3. At the end of the day, where do you USUALLY go right after school? (Choose only one answer.)

- ○ Go straight home
- ○ Go to a friend's house
- ○ Go to work at your job
- ○ Go to the mall
- ○ Go downtown
- ○ Go to a restaurant

4. How do you USUALLY get home after school? (Choose only one answer.)

- ○ Walk
- ○ Bike
- ○ School bus
- ○ City bus and/or Metro
- ○ Car

5. How do you know there are video lottery terminals (VLTs) in your neighbourhood?

- ○ There aren't any
- ○ I have seen them
- ○ I have seen signs for them
- ○ Somebody told me they are here

6. Please indicate the places where someone can play a video lottery terminal (VLT) in your neighbourhood. (Choose one or more answers.)

- ○ There are no places to play
- ○ Restaurants
- ○ Cafés
- ○ Bars
- ○ Bowling alleys
- ○ Arcades

7. Where have you played a video lottery terminal (VLT)? (Choose one or more answers).

- ○ Never played a VLT
- ○ In my neighbourhood
- ○ Near my school
- ○ Downtown

8. Where do your friends play video lottery terminals (VLTs)? (Choose one or more answers.)

○ My friends don't play VLTs
○ In their neighbourhood
○ Near their school
○ Downtown

9. When have you played a video lottery terminal (VLT)? (Choose one or more answers.)

○ Never played a VLT
○ During my lunch break
○ Before going home or after school
○ At night
○ On the weekend

10. When do your friends play video lottery terminals (VLTs)? (Choose one or more answers.)

○ My friends don't play VLTs
○ During their lunch break
○ Before going home or after school
○ At night
○ On the weekend

11. Please shade in the circles below to indicate your postal code.

Please hand-write your postal code in this column

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ Ⓞ Ⓟ Ⓠ Ⓡ Ⓢ Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ
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Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ Ⓞ Ⓟ Ⓠ Ⓡ Ⓢ Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ

⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ Ⓞ Ⓟ Ⓠ Ⓡ Ⓢ Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ
⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Thank you for taking the time to fill this out!

FOR OFFICE USE ONLY:

⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
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APPENDIX C – RESEARCH ETHICS APPROVAL

McGill

Research Ethics Board Office
McGill University
845 Sherbrooke Street West
James Administration Bldg., rm 429
Montreal, QC H3A 2T5

Tel: (514) 398-6831
Fax: (514) 398-4853
Ethics website: www.mcgill.ca/rgo/ethics/human

Research Ethics Board II
Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 23-0605

Project Title: Neighbourhood contexts and opportunities for youth gambling in Montreal, Quebec

Applicant's Name: Dana Wilson **Department**: Geography

Status: Ph.D. student **Supervisor:** Dr. Nancy Ross

Granting Agency and Title (if applicable): Canada Graduate Scholarship(CGS) Doctoral Scholarship

This project was reviewed on June 20, 2005 by

Expedited Review ____
Full Review ✓

Eleanor V. Stubley

Eleanor Stubley, Ph.D.
Acting Chair, REB II

Approval Period: July 19, 2005 to July 18, 2006

This project was reviewed and approved in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Subjects and with the Tri-Council Policy Statement on the Ethical Conduct of Research Involving Human Subjects.

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* All research involving human subjects requires review on an annual basis. A Request for Renewal form should be submitted at least one month before the above expiry date.
* When a project has been completed or terminated a Final Report form must be submitted.
* Should any modification or other unanticipated development occur before the next required review, the REB must be informed and any modification can't be initiated until approval is received.

APPENDIX D – SCHOOL BOARD INTRODUCTION LETTER

McGill University
International Centre for Youth Gambling Problems and High-Risk Behaviors
Centre international d'étude sur le jeu et les comportements à risque chez les jeunes

Date, 2005

Name
Address
Montréal, (Québec)
Postal Code

Dear Name:

The Department of Geography at McGill University, in conjunction with the International Centre for Youth Gambling Problems and High Risk Behaviours, has been funded to conduct research on youth gambling accessibility in Montréal and Laval. Gambling problems and adolescent high-risk behaviours are a relatively new area of research. It is therefore critical that studies such as these be conducted to further understand why certain youth take part in these activities. The aim of our current research is to identify youth perceptions related to gambling issues (e.g., attitudes, beliefs, benefits, risks, health consequences, local opportunities, acceptance of gambling behaviours). In addition, we are interested in whether these perceptions about gambling are related to the local availability of gambling opportunities, particularly video lottery terminals (VLTs). This research program is greatly needed in order to gain a better understanding of high-risk behaviours among youth in Montréal and Laval, with the goal of reducing the attraction and accessibility of gambling activities in the environments where youth study, play, work and live.

Our research program has recently been approved by the McGill Research Advisory Board (see attached approval form). We hope to receive your consent to conduct this research in your school board. The participation of your school board in this research is extremely valuable, as expanding our understanding of adolescent gambling behaviours will allow us to better address both the prevention and treatment needs of vulnerable youth.

Data collection will occur on only one occasion in the form of small focus group interviews of approximately 6-8 students. A trained bi-lingual researcher will direct the discussion with students; students may respond to the extent that they feel comfortable. These discussions will be tape-recorded but no participant's individual responses will be analyzed or discriminated. There are no demands on teacher time, however, we do ask that the school distribute and collect the consent forms. Please rest assured that no child will be asked to participate without parental consent (or giving their own consent if aged 18 and over) and they may opt to terminate participation at any time, without penalty. In addition, all participants will be assured confidentiality.

3724 McTavish Street, Montreal, Quebec, Canada H3A 1Y2
Tel.: 514-398-1391 Fax: 514-398-3401 www.youthgambling.com

We are hoping for the participation of approximately 3 to 5 focus groups from your school (18-32 students), with equal sampling across grade levels. We hope to begin research in October or November 2005 and to complete all data collection by October 2005. Please contact Dana Wilson (514) 272-5694 if you require further information regarding the research plans.

We appreciate your consideration and look forward to hearing from you at your earliest convenience.

_____

Dana H. Wilson, M.A.
Ph.D. Candidate
Dept. of Geography
(514) 272-5694

On behalf of:

Jeffery L. Derevensky, Ph.D
Professor, Dept. of Educational & Counselling Psychology
Associate Professor, Dept. of Psychiatry
(514) 398-4249

Nancy A. Ross, Ph.D
Assistant Professor
Dept. of Geography
(514) 398-4307

APPENDIX E – SCHOOL INTRODUCTION LETTER

McGill University
International Centre for Youth Gambling Problems and High-Risk Behaviors
Centre international d'étude sur le jeu et les comportements à risque chez les jeunes

Date

Name of Principal
Name of School
Street
City
Postal

Dear Name of Principal:

The International Centre for Youth Gambling Problems and High Risk Behaviours in conjunction with the Geography Department at McGill University has been funded to conduct research on youth gambling accessibility in Montréal and Laval. Gambling problems and adolescent high-risk behaviours are a relatively new area of research. It is therefore critical that studies such as these be conducted to further understand why certain youth take part in these activities. The aim of our current research is to identify youth perceptions related to gambling issues (e.g., attitudes, beliefs, benefits, risks, health consequences, local opportunities, acceptance of gambling behaviours). In addition, we are interested in whether these perceptions about gambling are related to the local availability of gambling opportunities, particularly video lottery terminals (VLTs). This research program is greatly needed in order to gain a better understanding of high-risk behaviours among youth in Montréal and Laval, with the goal of reducing the attraction and accessibility of gambling activities in the environments where youth study, play, work and live.

Our research program has recently been approved by the "Name of School Board" through "Name of School Board Contact". Our research has also been approved by the McGill Research Advisory Board (see attachment below). We hope to receive your consent to conduct this research in your high school. The participation of your school in this research is extremely valuable, as expanding our understanding of adolescent gambling behaviours will allow us to better address both the prevention and treatment needs of vulnerable youth.

Data collection will occur on <u>only one occasion</u> in the form of small focus group interviews of approximately 6-8 students. A trained researcher will direct the discussion with students; students may respond to the extent that they feel comfortable. These discussions will be tape-recorded but no participant's individual responses will be analyzed or discriminated. There are no demands on teacher time, however, we do ask that the school distribute and collect the consent forms. Please rest assured that no child will be asked to participate without parental consent (or giving their own consent if aged 18 and over) and they may opt to terminate participation at any time, without penalty. In addition, all participants will be assured confidentiality.

3724 McTavish Street, Montreal, Quebec, Canada H3A 1Y2
Tel.: 514-398-1391 Fax: 514-398-3401 www.youthgambling.com

We are hoping for the participation of approximately 3 to 4 focus groups from your school (18-24 students in total), with equal representation across grade levels. We hope to begin research in your school in October or November 2005. Please contact Dana Wilson (514) 398-1592 (dana.wilson@mail.mcgill.ca) if you require further information regarding the research plans.

We appreciate your consideration and look forward to hearing from you at your earliest convenience.

_____

Dana H. Wilson, M.A.
Ph.D. Candidate
Dept. of Geography
(514) 272-5694

On behalf of:

Jeffery L. Derevensky, Ph.D
Professor, Dept. of Educational & Counselling Psychology
Associate Professor, Dept. of Psychiatry
(514) 398-4249

Nancy A. Ross, Ph.D
Assistant Professor
Dept. of Geography
(514) 398-4307

APPENDIX F - PARENT & STUDENT CONSENT FORMS

McGill University
International Centre for Youth Gambling Problems and High-Risk Behaviors
Centre international d'étude sur le jeu et les comportements à risque chez les jeunes

Dear Parent:

We are presently working on a McGill University research study examining youth attitudes towards gambling issues (e.g., perceived benefits, risks, public health consequences, local opportunities). Considering that gambling is becoming more popular among youth, your son/daughter's participation is extremely valuable in helping us to develop better educational and prevention programs.

Individuals who participate in this research will be asked to be part of a small (approximately 6-8 students) group discussion on one occasion only. The discussion will be conducted in place of a class period and will take approximately one hour to complete. Discussions will be recorded to provide accuracy and will be destroyed after being transcribed. Rest assured that your child's participation is voluntary and that he/she is free to discontinue participating at any time without penalty or explanation. The information collected in the discussion will remain confidential at all times. In addition, if you would like to inquire about gambling-related resources for you son/daughter or any other member of your family, please get in touch with us using the contact information listed below.

Please indicate whether or not you wish your son/daughter to participate by completing the attached consent form and returning it to the school. We remain available to answer any of your questions.

Thank you for your support.

Dana H. Wilson, M.A.
Ph.D. Candidate
Dept. of Geography
(514) 272-5694

Jeffery L. Derevensky, Ph.D
Professor, Dept. of Educational & Counselling Psychology, Associate Professor, Dept. of Psychiatry
(514) 398-4249

Nancy A. Ross, Ph.D
Assistant Professor
Dept. of Geography
(514) 398-4307

Please check one of the following:

☐ I agree to allow my son/daughter_____ to participate in this research project. I understand that he/she is free to withdraw this consent and discontinue participation in this project at any time without further implications.

☐ I do not agree to allow my son/daughter_____ to participate in this research

Date: _____ Parent's Name_____

Parent's Signature_____

McGill University

International Centre for Youth Gambling Problems and High-Risk Behaviors
Centre international d'étude sur le jeu et les comportements à risque chez les jeunes

Dear Student:

We are currently working on a McGill University research study looking at the issue of gambling among young people. In particular, we are interested in getting your opinions on:

- how often and where young people gamble
- how gambling may be viewed as a public health issue as well as a source of entertainment
- the popularity and accessibility of video lottery terminal (VLT) gambling
- young people's opinions about prevention strategies

As gambling is becoming more popular among young people, your participation in this study is extremely important because it will help us develop better educational and prevention programs.

Those who participate will be asked to meet in small informal groups. Group discussions will be recorded (with your permission), but will be destroyed after analysis for accuracy of the topics that are discussed. Your participation will take approximately one hour from your regular class schedule. All information from the discussion is confidential. Specific information you share will not be reported back to the school or anyone else. Your participation is voluntary, and if for any reason you no longer wish to participate once you have begun, you can leave the group discussion any time without penalty or explanation.

If you are willing to participate, please complete the attached consent form.

Thank you for your support.

Dana H. Wilson, M.A.
Ph.D. Candidate
Dept. of Geography
(514) 272-5694

Jeffery L. Derevensky, Ph.D
Professor, Dept. of Educational & Counselling Psychology; Associate Professor, Dept. of Psychiatry

Nancy A. Ross, Ph.D
Assistant Professor
Dept. of Geography

Statement of Consent

I, _____ agree to participate in this research project. I understand that I am free to withdraw this consent and discontinue participation in this project at any time without further implications.

Date: _____ Student's Name_____

Student's Signature_____

APPENDIX G – GAMBLING RESEARCH FLYER

WANT TO PARTICIPATE IN A STUDY?

Researchers from McGill University are conducting a study to better understand the issue of GAMBLING among young people.

In particular, we are interested in your opinions on:

- how often and where young people gamble
- how gambling may be viewed as a public health issue as well as a source of entertainment
- the popularity and accessibility of video lottery terminal (VLT) gambling
- gambling prevention strategies

Participation will require approximately 60 minutes of your time.

Volunteers will receive a small gift as a token of our appreciation.

Find out how to volunteer at the next school assembly!

For more information contact Dana Wilson at:
dana.wilson@mail.mcgill.ca

McGill

APPENDIX H
FOCUS GROUP SCRIPT FOR MODERATOR

Script provided for moderator to conduct focus group discussions

A) **Project introduction and description of focus group interviews**
Moderator: "Thank you all for volunteering your time today. My name is (Moderator's name), and this is Dana. What we are hoping for today is for a discussion where everyone shares their ideas openly with the group. We would like everyone to feel free to comment, agree, disagree, or even question each others ideas. So, at anytime if you have an idea about something I am asking about or something one of your peers is talking about - - please just jump in and say what you're thinking. At some point if our discussion gets too noisy then I may try to limit the number of people talking at once, but I don't think that will be necessary. What we are looking for is a group discussion, so please just speak up when you have something to say! Also remember that no idea or answer is right or wrong, and we expect to hear a variety of ideas from the group."

B) **Mention of confidentiality and ethics of group members:**
Moderator: "Finally, I want to assure you all before beginning that our research is completely independent from this school, and none of the information we discuss today will be reported back to teachers or other school officials. We don't record any of your names in our discussion and your responses remain anonymous. In addition to our research team keeping all the ideas shared today confidential, we also request that each of you respect each others right to share their ideas without these individual ideas leaving this discussion. So we ask you to honour every members right for anonymity and privacy by not to sharing the ideas expressed during this discussion beyond the meeting today."

C) **Conditions of youth participation and addressing questions or concerns of group**
Moderator: "One last thing I want to mention is that your participation is of course voluntary, and if at any time you feel uncomfortable or no longer wish to participate, you may leave the discussion at any time without giving an explanation. Does anyone have any questions or concerns they would like to talk about before we begin?"

D) **Warm-up activity**
Moderator: "Ok, first I would like you to take a few minutes to fill out the short questionnaire that is laying face down on your desks. This worksheet is just to get you thinking a bit about gambling, since this is the topic of our study. We define gambling as - an activity involving the risk of money or something valuable on an event that has an uncertain outcome, like the flipping of a coin, so it is unknown whether or not a participant will win or lose when they gamble. Once you are finished filling out the sheet, please just turn it over and then we'll begin the discussion."
(After group finishes with worksheet (See Table 4.6) and turns it over, Moderator begins the introduction to focus group discussions).

E) **Introduction to focus group discussions and VLTs:**
Moderator: "Ok great, now we'll get started. As I mentioned, our research project focuses on gambling among in Montreal and Laval and specifically video lottery terminal or V-L-T gambling machines. We are interested in where these gambling machines are located, and what makes them such a popular gambling activity. We have found in our studies that gambling and VLT gambling are popular among adults and young people, but also that gambling can have negative consequences in addition to being a form of recreation, so we are particularly interested in your opinions about these issues. Do all of you know what a video lottery terminal is?"
(Wait for nods or answers from the group first. Ask those who do indicate knowing about VLTs to describe them to the group. Only describe VLTs after the group is finished completely responding, and only add points that students don't mention).

General description of VLTs *(if students don't offer the information)*:

- a type of electronic gambling machine
-each machine has a choice of games to play such as poker and blackjack
-the machines, like video games, have visual and sound effects
-also VLTs are found in places where alcohol can be served, like a bar

F) **Focus group interview schedule**

See Table 4.7.

G) **Wrapping up and Closing the Discussion**
At this point, ideas that were raised in the discussion can be probed further. Ask students if they would like to add any further comments or ask anything of the group that has or has not already been discussed.
At the point when students feel they have nothing more to add and the moderator and assistant exchange notes or visual indications of being satisfied with the discussion, it can be completed.
Thank the students again for their time and for sharing their valuable ideas and knowledge with the research team. Indicate to students that they can help themselves to snacks. Assistant will give each student an envelope containing a gift certificate to a local movie theatre and contact information to get in touch with the research team at a later date if desired.

APPENDIX I
FOCUS GROUP INTERVIEW SCHEDULE

Focus group interview schedule

Description:

The moderator in common and simple language went through the eighteen questions and waited for and encouraged responses. Probes listed below each question indicated by a bullet were used when necessary. Italics indicate notes for the moderator to follow.

Q1: In general, what are the most popular gambling activities?
(Repeat/confirm each activity that students mention)

Q2: Why are these activities the most popular?
(Repeat each activity students mentioned above)

●Is there something about how you play or when you play or the result of playing that makes these activities the best ones?
●What about VLTs? Are they popular? (*Only ask this question if VLTs aren't mentioned).*

Q3: How common are gambling activities around here?

●Do students gamble much?
●What about adults?
●What about VLTs? (*Only ask this question if VLTs aren't mentioned).*

Q3: Where does most gambling happen?

Q4: What are the most common types of gambling in this school?
●What about common types of gambling around town?

Q5: What about VLTs? Are they common?
● For students or around town?
● Why or why not?

Q6: How easy is it to play a VLT if you are under 18 years old?
●Are there some places that are easier to play VLTs?

Q7: In general, who do you think gambles the most?
●Any age differences in gambling?
●Any gender differences in gambling?
●Any income differences or occupation differences in gambling?
●Are there certain types of families, ethnic groups or cultures that gamble more or less?

Q9: What about VLT gambling? Who uses VLTs the most?

Q10: What are the main reasons that people gamble in general?

Q11: Is gambling something you do with friends or alone? Or does it depend on the

type of gambling?

Q12: What are people's general experiences of gambling do you think? Pretty similar or different experiences depending on the person?

Q13: In thinking about the negative experiences people have with gambling, what are some negative outcomes from gambling?

Q14: Who do you think has the worst experiences with gambling?

Q15: What do you think might be done to reduce the bad experiences of gambling, to make gambling a better activity for everyone?

Q16: Can you think of specific ways to reduce unhealthy gambling among young people?

Q17: What could we tell young people about gambling to help make it safer or less harmful?

Q18: Are there other activities near schools or homes that could be made available to young people that might reduce unsafe gambling?

APPENDIX J
KEY INFORMANT CONSENT FORM

McGill University
International Centre for Youth Gambling Problems and High-Risk Behaviors
Centre international d'étude sur le jeu et les comportements à risque chez les jeunes

Dear Participant:

We are presently working on a McGill University research study examining youth attitudes towards gambling issues (e.g., perceived benefits, risks, public health consequences, local opportunities). Considering that gambling is becoming more popular among youth, we consider your views and insight to be extremely valuable in helping us to develop better educational and prevention programs.

We invite you to participate in our research by allowing us to conduct a short verbal interview with you on one occasion only. The interview will be conducted at a convenient location and time for you (e.g., on or off school property, and during or outside of regular school hours). We anticipate the interview to last approximately 30 minutes. The interview will be recorded to provide accuracy, but will be destroyed after being transcribed. Information discussed during the interview will remain confidential at all times and will not be reported back to the school.

Please indicate whether or not you agree to participate by completing the attached consent form. We remain available to answer any of your questions. In addition, if you would like to inquire about gambling-related resources, please get in touch with us using the contact information listed below.

Thank you for your support.

Dana H. Wilson, M.A.
Ph.D. Candidate
Dept. of Geography
(514) 272-5694

Jeffery L. Derevensky, Ph.D
Professor, Dept. of Educational & Counselling Psychology, Associate Professor, Dept. of Psychiatry
(514) 398-4249

Nancy A. Ross, Ph.D
Assistant Professor
Dept. of Geography
(514) 398-4307

I, _____ agree to participate in this research project. I understand that I am free to withdraw this consent and discontinue participation in this project at any time without further implications.

Date: _____ Name _____

Signature _____

APPENDIX K
KEY INFORMANT INTERVIEW SCHEDULE

Key Informant Interview Schedule

Key Informant Interview Schedule

Description

The key informants in this case are two guidance counsellors and a head of security at the three high schools where focus groups have been conducted, who have aided in organizing group discussions for this research, and act as an intermediary with the students, teachers, and myself.

Introduction:

Thank you again for volunteering your time today. Before we begin, I just want to assure you that our research is completely independent from this school, and none of the information discussed today will be reported back to the school. Also, we don't report your name but instead use pseudonyms, and all of the information you share with us today remains confidential and anonymous. Your participation is of course voluntary, so if at any time you no longer wish to participate, we can end the discussion at any time.

Do you have any questions or concerns before we begin?

[answer questions / concerns]

Ok, first I would like to share with you our definition of gambling. We define gambling as *a*n activity involving the risk of money or something valuable on an event that has an uncertain outcome - like the flipping of a coin– so it is unknown whether or not a participant will win or lose when they gamble.

Interview Questions:

Q1a: Why do you think some students gamble?

Q1b: And why do you think some students don't gamble?

Q2a: In your opinion, or based on your experiences, how common is gambling by students in this school?

(Inquire about particular gambling activities that may be more / less popular)

(Inquire about where (e.g. at school, home, local hangouts) and when (e.g. recess, lunch, after school, on weekends).

Q2b: Would you say gambling is common among school officials or teachers or other employees in this school?

(Inquire about particular gambling activities that may be more / less popular)

Q2c: Do you think parents of students that attend this school gamble very much?

(Inquire about particular gambling activities that may be more / less popular)

Q3a: Do you think students are aware of gambling issues (e.g. problem gambling) beyond entertainment and a potential source of money?

Q3b: Do teachers consider gambling an issue within the school?

Q4a: Are there differences in gambling activities or attitudes with respect to different student characteristics? For example is gambling more or less common with students a specific age or gender?

(Also, if not mentioned above, inquire about):

-linguistics (French, English, Spanish, etc)

-ethnicity, cultural background

-involvement with other risky activities or behaviour (alcohol, violence, drugs)
-academic performance
Q4b: Are certain gambling activities popular for different students? For example, people prefer sports betting, while others like poker.
Q4c: Do you find certain times of the year when gambling is more or less prevalent?
Q4d: Do you think the media plays any role in how much or what types of gambling activities students may be interested in?

Q5a: How has gambling popularity among students changed in the past decade?
Q5b: If you have noticed a big change, when did these changes occur and what do you think led to these changes?

Q6a: How does the school respond to gambling behaviours among youth?
Q6b: Have school policies or practices regarding gambling changed over the years?

Q7: How common is gambling among adults or students in this local neighbourhood?

Q8: Do you notice any differences in gambling attitudes or behaviours in this school from any other school you have spent time at?

Q9: What do you think the general attitude of teachers and other school officials/employees is regarding gambling?

Q10a: Do you think gambling activities are a concern for the students at this school?
Q10b: Do you think that other teachers/officials feel that gambling is an issue that needs addressing in the school?

Q11a: What types of things do students here do during recesses or lunch to pass the time?
Q11b: Are there many places around school property that you know of where students commonly go to spend time either on recesses, lunch or after school?
Q11c: Are there any places near the school where you think students may go to gamble?

Q12a: Do you think the location of this school has any influence on the gambling behaviours of students?
Q12b: Do you think the gambling attitudes or behaviours would be different among students in a school located in a less populated or urban area, or even a different area of town?
Q12c: Do you think the mobility of students has any influence on the development of gambling behaviours or any other risky behaviours?

Q13: If the school wanted to change gambling attitudes or behaviours of students, what is the most probable action the school would take to accomplish

this?

Q14: Gambling is sometimes conceptualized in the media as a health issue. Does this coincide with your experiences or view of these issues?

15) Are there any other thoughts or even questions that you might have relating to youth gambling that you would like to add or ask?

Conclusion:

This is the end of our questions - - thank you very much for your time today, that was a very interesting and informative discussion.