



GPI Atlantic

Genuine Progress Index for Atlantic Canada / Indice de progrès véritable - Atlantique

MEASURING SUSTAINABLE DEVELOPMENT

APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA

THE COSTS AND BENEFITS OF GAMING

A SUMMARY REPORT FROM THE LITERATURE

REVIEW

Prepared by

Karen Hayward and Ronald Colman, Ph.D
GPI Atlantic

Funded by

Nova Scotia Gaming Foundation
September 2004

For more information, contact Ronald Colman, Executive Director, GPI Atlantic, at
colman@gpiatlantic.org; 902-823-1944
or Karen Hayward at karenhayward@eastlink.ca; 902-479-3944

TABLE OF CONTENTS

1. Introduction	1
2. Methodological problems in cost-benefit studies of gambling	3
2.1 Conceptual frameworks	3
2.2 Costs and benefits	5
2.3 Consumer surplus (benefits)	6
2.4 Causality, attribution, and comorbidity	7
2.5 Intangible costs and benefits	9
2.6 Private (individual, internal transfers) and social (real, external) costs	9
Family costs	11
Economic development and employment	12
Government revenues and expenditures	13
Productivity losses from gambling problems	13
Unpaid debt and bankruptcies	14
2.7 Social Issues	15
Implicit taxation	15
Sustainability	15
Progressive or regressive taxation	15
Income distribution	16
3. Research needs and data gaps	16
3.1 General needs	16
3.2 Regional impacts	18
3.3 Social environment	19
3.4 Culture or community groups	19
Gender	20
First Nations peoples	20
Adolescents—Education	20
3.5 Types of games	20
4. Relative risk ratios and gambling statistics	21
4.1 General risk conditions	21
4.2 Expenditures	22
4.3 Types of gaming	22
VLTs	23
Casinos	23
4.4 Problem gaming demographics	24
Gender	24
Age	24
Adolescents	25
Children	25

Seniors	25
First Nations People	26
4.6 Problem gambling impacts	26
Co-morbidity and health status	26
5. Policy Implications	29
5.1 Strategies that address problem gambling	29
5.2 Public Opinion	32
5.3 Women and Adolescents	33
6. Conclusion	34
<i>Appendix 1: Summary Table of indicators, Costs, and Benefits</i>	<i>36</i>
<i>Appendix 2: Full literature review is included as a separate document (212 pages) available at www.gpiatlantic.org</i>	<i>42</i>
<i>Endnotes</i>	<i>43</i>
<i>References</i>	<i>51</i>

LIST OF TABLES

<i>Table 1. Pathological and Problem Gambler Risk Ratios</i>	<i>27</i>
<i>Table 2. Indicators of Costs and Benefits of Gambling</i>	<i>37</i>

1. Introduction

The rapid expansion of legalized gambling and the increasing reliance of governments on gambling revenues in the last decade have fostered a rapid rise in gambling activity worldwide. In Canada, gambling is now a powerful economic force in Canadian society.¹ Opinions regarding whether gambling provides net benefits or net costs to society are polarized. Governments that rely on the extra revenue generated by gambling generally provide financial arguments in favour of legalized gambling and point to the dangers of criminal activity that is likely to accompany illegal gambling.² Critics, including those negatively affected by gambling, generally denounce the activity as causing harm to society.³ Researchers frequently criticize studies on the benefits and costs of gambling for having biased views.⁴

In order to understand the broad effects of gambling and to minimize its potentially harmful effects, societies need an unbiased, clear accounting of both its costs and benefits within a social and economic context that is multidisciplinary and holistic.⁵

In July 2004, GPI Atlantic produced a review of the literature on the costs and benefits of gambling for the Nova Scotia Gaming Foundation. The review focused on methodological issues and on the applicability of existing materials to Nova Scotia, and was seen as a preliminary step to a potential full-fledged future analysis of the costs and benefits of gambling in Nova Scotia. It was hoped that this future analysis would provide much needed information on the full medical, social, economic, and productivity costs of problem gambling in the province, and would also identify advantages to society, including generation of tax revenues that can be used for the public good, and prevention of organized crime.

Such an impartial analysis could assist both sides of the debate on gambling to move from “win or lose” propositions to informed discussion about how to manage gambling cost-effectively and in such a way as to minimize its potentially harmful effects. More precise knowledge about where and how serious the costs to society of gambling are could potentially help policy makers assess the most cost-effective ways to address existing problems, and the benefits that could be expected from such investments. This information is critical to identify and reduce the negative effects of gambling.

However, the GPI literature review concluded that research in the area is not sufficiently advanced and that methodological obstacles are still too great to conduct a full benefit-cost study for Nova Scotia with requisite scientific credibility at the present time. There is currently no consensus in the research community on the most effective methodology and indicators that should be used in a study on the costs of gambling. Though it did not claim to be an exhaustive review of the literature, the GPI review did describe these methodological difficulties in some detail and focused particularly on the challenges of practical application in light of existing evidence. The review was also able to glean important background information from the existing literature that can help identify a comprehensive set of indicators that could be used in the future to identify the full costs and benefits of gambling in Nova Scotia.

It was recognized that governments in general, and the Nova Scotia in particular, cannot afford to wait until all methodological issues have been resolved in order to identify effective interventions to deal with existing problems associated with gambling. This summary report therefore outlines in brief some of the key findings of the GPI Atlantic literature review in order to provide a reference and policy tool for Nova Scotia gaming and health officials, researchers, and policy makers. It is hoped that it will be a useful starting point for further work in this area, and that the results from the existing evidence summarized here can be practically applied to decisions and priorities in the policy and research realms. The full literature review is attached as a second Appendix to this report for those wishing to examine the issues in greater depth and to cross reference the material presented here.⁶

The literature review focused mainly on research from Canada, the United States, Australia, and New Zealand as well as on research produced in Nova Scotia. In particular it relied on the excellent work being done through:

- the Canadian Centre on Substance Abuse to establish guidelines and consensus for gambling impact studies,
- the Alberta Gaming Research Institute,
- the National Opinion Research Center at the University of Chicago,
- the Australian Productivity Commission, and
- the Australian Social and Economic Research Centre.

New information concerning gambling in Nova Scotia was released, after the literature review was completed, in a report prepared for the Nova Scotia Office of Health Promotion's Addiction Services division. The 2003 Nova Scotia Gambling Prevalence Study offers new statistics concerning problem gambling prevalence, gambling activity, and awareness and use of problem gambling services in Nova Scotia that can update the statistics used in the literature review.⁷ A few of the new statistics from that study have been added to this summary paper in Section 4 on relative risk ratios.

The following summary of the literature review covers five main areas:

- Methodological difficulties in determining the costs and benefits of gaming, as debated among researchers;
- A summary of research needs and data gaps that can suggest research priorities for further research and data collection;
- A summary of the relative risk ratios for costs associated with problem gambling as identified in particular international studies;
- A brief review of potential policy implications, interventions, and regulation strategies cited in the literature; and
- A framework listing the major costs and benefits of gaming identified in the literature, which can be used in future cost-benefit studies as well as to evaluate existing and prospective studies in the field. (The full list is provided as a table in the first Appendix of this summary paper.)

The first two of these areas comprise the first 20 pages of this summary, which are addressed primarily to researchers in the field, as is the Appendix. The sections on relative risk ratios and policy implications comprise the next 15 pages and will be of interest to policy makers seeking a summary of the best available evidence in the field as the basis for effective interventions.

2. Methodological problems in cost-benefit studies of gambling

Studies designed to estimate the costs and benefits of gambling use a wide range of methodologies that have produced a correspondingly wide range of estimates and a great deal of controversy.⁸ Many of the studies have conceptual, empirical, or data problems that are contentious and unresolved. Many studies are considered "seriously flawed" by researchers.⁹ In fact, researchers have noted that "existing estimates are of limited usefulness and require further interpretation."¹⁰

Methodological difficulties in determining the social and economic impacts of gambling revolve around the conceptual framework for gambling impact studies, measurement methods, definitions of costs and benefits, and whether particular costs should be considered as private or as social costs. The approach researchers take to any of these issues seriously affects the outcome of the research.

Two of the major methodological difficulties are the issues of causality and the value of intangible costs and benefits. It is acknowledged that impacts frequently *associated* with gambling are often difficult to attribute directly to gambling as a *cause*. Causation is always multidimensional, but the empirical work required to develop reliable attribution fractions has not yet been done. In addition, researchers find that intangible costs and benefits are difficult to quantify because, in order to determine them, assumptions and value judgments must inevitably be made. As Azmier points out, different communities, regions, and provinces have different values and needs that must be considered when choosing indicators.¹¹ It is also not clear how to value the "trade off" between the pain and suffering of gambling costs resulting from problem gambling on the one hand and gambling benefits such as government use of gambling revenues for public goods and services on the other. Highlights of some of the main methodological issues are presented below.

2.1 Conceptual frameworks

One of the debates in the gambling research literature concerns which analytical framework is most useful in analyzing costs and benefits. Economics-based approaches to determining the economic development effects of gambling most often use the traditional methodology of cost-benefit analysis or economic impact analysis. Azmier argues that neither of these approaches gives a broad picture of actual effects. He argues that the economic impact approach fails to include real private and social costs and therefore tends to inflate the benefits. He criticizes the cost-benefit approach for using easily challenged assumptions that have limited utility because they are not generalisable to other regions. These assumptions are nevertheless necessary to quantify intangible effects. Neither of these approaches, he concludes, provides the extended analysis of the impact of gambling on public health that is needed to inform policy makers.¹²

Economist Douglas Walker has criticized economic studies on gambling impacts undertaken by non-economists such as sociologists, psychologists, political scientists, lawyers, and even

environmental planners, landscape architects, and regional planners. While acknowledging that researchers in a variety of disciplines should address problem gambling, he argues that: "These individuals often give "economic" arguments in favor or against legalized casino gambling, even though their formal training is in some other field. The result is that they often confuse the issues.... We should be cognizant of when we step outside our areas of expertise."¹³

On the other hand, it has been argued that analysis of gambling costs and benefits is too important to be left to economists, who often have too narrow a view. What we measure and count—quite literally—tells us what we value as a society. What we do not count in conventional economic analyses, such as non-monetary and non-material assets like population health, security, and social cohesion, we effectively discount and devalue. And what we do not properly measure and value will in turn be effectively sidelined in the policy arena. For example, reliance on economic growth measures to assess how "well off" we are as a society excludes vital social and environmental indicators and sends highly misleading signals to policy makers. A researcher's view therefore informs which indicators will be included in a cost of gambling study and what value is given to the more intangible impacts of gambling.

In 2002, the Canadian Centre on Substance Abuse (CCSA)¹⁴ held an important international symposium in Whistler, B.C.¹⁵ This First International Symposium on the Economic and Social Impact on Gambling brought together approximately 60 researchers, policy makers, and other experts to establish a methodology for estimating the social and economic impact of gambling so that results would be internationally comparable. The methodology would include a process, analytical framework, and guidelines to integrate various perspectives and values on this issue.

Many of the participants at the Whistler Symposium agreed that a holistic-impact-accounting framework having multiple analytical options was preferable to a more narrowly defined perspective. For example, methods are needed to expand the traditional focus on money-related impacts of gambling to include the many qualitative impacts of gambling on wellbeing.¹⁶

The Whistler Symposium identified six analytical frameworks from various disciplines that could inform a final framework. These were:

- Financial analysis and accounting used in business;
- Neoclassical economic analysis and theory. e.g. cost-benefit analysis (CBA);
- National income accounting, e.g. macro economic analysis, such as the gross domestic product (GDP) accounting;
- Welfare economics, e.g. cost-effectiveness and cost-utility analysis as well as new sustainable wellbeing measurement systems like the GPI accounting system;
- Social impact analysis; and
- Public health impact analysis.

The Whistler Symposium report explicitly recognized the GPI model, which incorporates the public health approach, as:

"A holistic impact tool for assessing the full range of physical, qualitative and monetary costs and benefits on the wellbeing of individuals, households, communities, the

economy, and the environment. ... GPI accounting could in principle provide a comprehensive impact analysis tool that embraces virtually all existing methodological impact analysis tools, including those posited."¹⁷

The Korn, Gibbins, and Azmier paper presented to the Whistler Symposium discusses the potential of the public health perspective to provide a broad lens for analyzing costs and benefits and for understanding the impact of gambling on society.¹⁸ This framework goes beyond the view of gambling as problem behaviour to place gambling in its broader social and economic context. The public health approach also has the potential to identify multiple strategies for action, prevention, and intervention. The public health perspective emphasizes social factors that have a role in determining health. These factors include income and income distribution, social support networks, education, employment and working conditions, gender, and other related social and economic issues. The authors summarize this perspective, listing the benefits of framing gambling as a public health issue:

"A public health approach emphasizes the prevention of gambling-related problems and harm reduction to decrease the adverse consequences of gambling behavior. It addresses not only the risk of problems for the gambler but also the quality of life of families and communities affected by gambling. It takes into consideration the multiple biological, behavioral, socioeconomic, cultural, and policy determinants influencing gambling and health. A public health approach encourages a life-cycle approach to measuring social and economic impacts, one that recognizes significant changes in the social context within which gambling takes place. It embodies public health values that reflect concern for the impact of gambling expansion on vulnerable, marginalized and at risk population groups. Finally, a public health framework recognizes that there are both costs and benefits associated with gambling."¹⁹

2.2 Costs and benefits

In a recent paper, Wynne and Shaffer summarize the benefits and costs of gaming that are most frequently cited in the literature on gambling impacts. The major benefits include:

- Revenues for the public good, including health care, education, social services, and community infrastructure;
- Capital projects that include parks, recreation facilities, museums, and cultural arts centers;
- Job creation;
- Economic development;
- Opportunities for indigenous peoples;
- The entertainment value that gambling affords to the many players; and
- "Legal" gambling formats that keep "illegal" gambling in abeyance, thus reducing crime that can be associated with unsanctioned, illegal gambling alternatives.²⁰

The costs of gambling to society are mainly associated with the consequences of problem gambling. According to Wynne and Shaffer, the most frequently cited costs include:

- The rise in the number of people with severe gambling problems;
- The havoc that problem gamblers wreak on themselves, their families, and the community at large;
- Lost productivity at work;
- Increased crime, notably fraud, theft, domestic violence, suicide, counterfeiting, and money laundering;
- The possible cannibalistic effects that large casinos, bingo halls, and electronic gambling in bars and lounges have on local small business revenues and employees; and
- Increased health care, social service, policing, and other public service costs that governments must bear to deal with the negative fallout from legalized gambling.²¹

A comprehensive list of indicators of the costs and benefits of gambling, as gleaned from GPI Atlantic's literature review, is presented in the first Appendix to this summary paper. The organization of that list is adapted from a framework for the evaluation of the impacts of gambling produced by the Australian organization, the Social and Economic Research Centre (SERC).²² This framework was chosen by GPI Atlantic over others suggested in the literature, for its comprehensiveness, its ability to integrate multiple dimensions, and its clarity. The basic format includes seven areas of impact: health and wellbeing, culture, recreation and tourism, employment and education, crime, economic development (macro level), and financial. In reality, these areas overlap, are interdependent, and have multiple effects on each other. For example, tourism and employment both clearly affect macro-economic impacts; culture affects tourism; and health and wellbeing underlie all of the areas.

Each of the seven impact areas affects society on four separate levels of analysis: the individual and family (e.g. Joe Smith and his close friends and relatives), the community (e.g. youth, or Sydney, Nova Scotia), the region (e.g. eastern Cape Breton), and the province (e.g. Nova Scotia). More comprehensive framework definitions can be found in the full GPI Atlantic literature review that is appended to this summary paper. These levels of analysis are conceptually distinct, although they are also clearly interconnected and ultimately cannot be separated. Impacts in any area function like ripples in a pond after a stone is thrown. For example, if Joe is a problem gambler, his actions radiate out to affect his family, community, region, and the province at large. If the province passes new regulations, or the region introduces more video lottery terminals (VLTs) into his community, this in turn may affect Joe's propensity to gamble, etc.

In addition, although there are overlapping effects, each type of gaming creates impacts distinct from other types and needs to be looked at separately through the framework lens. We have distinguished these key areas as: lotteries, video lottery terminals (VLTs), bingo and charity gaming, and casinos. For example, higher proportions of VLT players develop difficulties than those who purchase lottery tickets.²³ And lotteries might produce more jobs than bingo.²⁴

2.3 Consumer surplus (benefits)

Recreation, entertainment, and socialization are among the most commonly mentioned benefits of gaming to the individual and society. Economists often use a technical measurement called

“consumer surplus” to measure benefits. Consumer surplus is the “difference between what rational consumers would be willing to pay for a good or service and the market price that they are actually required to pay. This is based on the assumption that rational consumers will undertake an activity only if the private benefits received at least equal the private costs of that activity, so that there is almost certainly a positive net benefit in the form of consumer surplus.”²⁵ In cost-benefit analysis, however, consumer surplus tends to be discounted based on the strength of the community’s “moral criticism.” In fact, “entertainment value” for non-problem gamblers has rarely been investigated.

The way consumer surplus is handled in cost-benefit studies is contentious. Researchers criticize this approach for technical reasons concerning the use of economic concepts such as “marginal utility” and “elasticity of demand.” Criticisms also suggest that consumers often do not have an accurate idea of the “price” of a particular gambling activity and hence cannot derive a surplus. The New Zealand Department of Internal Affairs states:

“If we assume, reasonably, that gamblers aim individually to win when they gamble, then we face a contradiction. Some do win, but we know that collectively they will lose. Machine games and casino games, for example, are designed to secure a house ‘edge’ so that gamblers will necessarily lose in the aggregate. In moving from an individual possibility to a collective inevitability the calculation becomes illogical.”²⁶

The concept of consumer surplus also depends on the assumption of rational choice by consumers. The extent to which problem gamblers derive benefit from gambling, or to which they can be considered “rational” when they are “chasing loses,” is also debated.²⁷ In sum, the “rational consumer” assumption underlying many assessments of gambling benefits has been strongly challenged.

2.4 Causality, attribution, and comorbidity

Establishing causality is a major difficulty when deciding what costs might be attributed to problem gambling. For any outcome there are likely to be multiple causes. For example, gambling problems are often accompanied by stress, depression, and alcohol or drug abuse. The main questions challenging researchers in this area are whether the gambling problem or the accompanying morbidities and substance abuse problems came first, and whether gambling is the primary or secondary disorder. For example, did gambling lead to depression, or did depression lead to gambling? Or can we identify a portion or fraction of the gambling activity that led to depression?

Whatever portion of a particular outcome cannot be directly attributed to gambling also cannot be considered a cost of gambling. If alcohol is the primary cause of the outcome under consideration (e.g. suicide), then the cost associated with that outcome must be attributed primarily to substance abuse rather than to problem gambling. However, rather than dismissing the gambling-related cost because gambling might be a secondary rather than primary factor, a portion of the outcome that may be attributed to gambling needs to be estimated.²⁸ This estimation method for any risk factor usually relies on *attribution fractions* that are derived from

large-scale population based empirical studies that have established reliable estimates. Many of these studies are based on surveys or interviews.²⁹ In the case of gambling, unlike tobacco or alcohol use for example, this work has not been done with any degree of reliability or consistency. In the case of substance abuse, Single et al. recommend as a guideline:

"If an already severely mentally ill individual develops a substance abuse disorder, the additional care that such an individual requires should be attributable to substance abuse. However the expected care for the mental disorder apart from the substance abuse problem would not be attributable."³⁰

This would seem to imply the same for gambling disorders — if a substance abuser or depressed person subsequently becomes a gambler, only the cost of the *additional* care required should be attributed to problem gambling.

The United States National Opinion Research Centre (NORC) report estimates the costs of negative consequences of gambling, whether bankruptcy, job loss, health problems, etc., by first determining the "expected" rates among non-problem gamblers, determining the rate experienced by problem gamblers, and then determining whether the difference is larger than might be expected due to chance or confounding demographic and socio-economic variables. It then attributes the excess rates for problem gamblers to gambling. It is this relative difference between the expected rates of a health, employment, or financial difficulty among non-problem gamblers on the one hand and the rates for problem gamblers on the other that is important in determining gambling impacts, rather than the actual or absolute prevalence of the difficulty among problem gamblers per se.³¹

The Australian Productivity Commission (PC) methodology used a "causality adjustment," based on the "rule of thumb" that 20% of problem gamblers would have had the same problem (e.g., divorce or separation) even without their gambling problem. Therefore, the PC adjusted for "causality" in its estimates of personal and family impacts of problem gambling by reducing by 20% the number of problem gamblers estimated to be affected.³²

In terms of crime, evidence leaves no doubt that there is an *association* between problem gambling and criminal activity such as burglaries, robberies, loan sharking, drug dealing, and money laundering. However, whether or not gambling *causes* crime is controversial.³³ There is some indication that pathological gambling leads to crime.³⁴ Smith, et al. cite evidence by Brown arguing that there is a causal connection.³⁵ Brown's argument is that crime is not likely to cause gambling, and that when individuals stop problem gambling activity, they inevitably stop engaging in criminal activity as well.³⁶ Single et al. suggest:

"The analyst must be very careful and explicit in discussing how attribution factors are derived for such crimes. It may often come down to whether analyst[s are] willing to exercise their reasoned judgment and make an explicit assumption about the rate. If so, that assumption should be backed up by a chain of logic and the best data that are available.... However, these estimates would have poor statistical reliability."³⁷

2.5 Intangible costs and benefits

Intangible effects are those that cannot be quantified easily in monetary terms. Emotional pain and suffering, quality of life, wellbeing, population health, social cohesion, and environmental impacts are a few of the intangible effects that may be involved in gambling outcomes.

Economic analyses usually do not include intangible effects. The current opinion among researchers is that intangible effects are crucial elements in cost-benefit analyses of gambling and must be included, despite the difficulties of quantifying these impacts.³⁸ Failing to include these effects in gambling impact studies implicitly assigns them a value of zero.

Intangible emotional costs include pain, suffering, and quality of life impacts on individuals, families, neighbourhoods, and society that may be far greater than simple economic production losses due to the victim's inability to perform paid work.³⁹ Just as insurance companies provide monetary compensation for the loss of limbs, so courts grant awards designed to compensate victims for suffering beyond mere production losses. In the words of the Solicitor-General of Canada:

“Many of the most important costs of crime – the psychological and emotional suffering of victims, the fear and insecurity of those who believe they are at risk, the pain and often anger of the families of victims, the loss of freedom and potential productive labour that incarceration means for the criminal who is caught – cannot be measured in dollars. But these largely unmeasurable costs must be a significant part of any cost-benefit equation.”⁴⁰

Estimating the costs of intangible impacts such as the pain and suffering of crime victims is even more difficult than estimating direct crime costs. These costs are often estimated using court awards to crime victims for suffering, disabilities, and disamenities due to crime. According to the Australian Productivity Commission, when cost-benefit studies of gambling include estimates of the cost of intangible impacts, these costs often contribute the largest proportion of the costs involved.⁴¹ Colman states that costs of personal suffering due to crime:

“are generally the largest single component of any comprehensive cost estimate of crime and justice costs, and undeniably one of the most important actual costs from the perspective of crime victims. In the case of victims of violent crime or abuse, there may be life-long disabilities and psychological scars that inhibit effective functioning and that are far in excess of the medical, hospital and monetary losses. In such cases, court awards for “shattered lives” are often used as a proxy for this suffering.”⁴²

2.6 Private (individual, internal transfers) and social (real, external) costs

In a cost-benefit analysis, whether an impact is counted as a private or as a social cost seriously affects the outcome. This issue is another major source of contention among researchers, with different conceptual approaches again determining which impacts are included and excluded in analyses of gambling impacts. In the economic paradigm, for example, only social costs are

included in cost-benefit calculations while private costs are excluded because there is no aggregate gain or loss to society.⁴³ But researchers do not agree whether the economic paradigm that makes these distinctions is appropriate to gambling impacts studies. On this issue, as with other conceptual and methodological issues raised here, there is considerably less agreement concerning gambling impact studies than in comparable work assessing the costs of tobacco, alcohol abuse, physical inactivity, and other risk factors for health and social costs. This is due partly to the complexity of the subject matter and partly to the newness of the evolving research.

Private or internal costs are individual costs that do not impact society as a whole. For example, the money a gambler loses is a private cost. A social cost creates a change in society as a whole. This seemingly simple observation in fact leads to considerable complications in applied cost-benefit analysis. Just as there are always interconnections and multiple causes of effects associated with gambling, so the boundaries between personal and social costs are often fuzzy. Total costs (and benefits) include both private or individual and social costs. However there is little agreement among researchers concerning what to include in each category.

Private costs, also called pecuniary costs, are transfers from one person or group to another—what is one person's loss is another's gain—so there is no net cost to society as a whole. Basically, transfers redistribute assets rather than produce a net gain or loss. Collins gives examples for some of the benefits and costs frequently associated with gambling:

- The revenues governments raise from taxes are pecuniary (since they don't create new resources) except when that profit comes from outside (e.g. from tourists) or would have been spent outside the jurisdiction (e.g. at a casino in another province).
- If an employee loses his/her job, can't be replaced, and there is an ensuing loss of production, that is a real [social] cost. If the employee can be replaced, and if the unemployed worker collects unemployment compensation, the costs are considered pecuniary or transfers, and not social costs.⁴⁴

The gambling literature lacks an appropriate standardized definition of social cost and a methodology for measuring these costs.⁴⁵ Walker defines social cost in the welfare economics paradigm as a decrease in the aggregate real wealth of society compared to what it otherwise would have been. In this case, “transfers” such as bad debts, for example, would not be considered social costs.⁴⁶

Collins and Lapsley argue that social costs are those incurred involuntarily by others including those costs the gambler didn't rationally take into account when starting to gamble. A social cost occurs if an action makes some worse off, but no one better off.⁴⁷ Eadington states that, in this case: “A measurement of the social cost would be the amount of income transfer it would take to compensate those who were damaged so that they could be made “whole,” i.e. as well off as they were before the action took place.”⁴⁸ Collins and Lapsley also argue that social costs exist if the gambler stops work to gamble, loses the family money, and causes family members to require social welfare benefits. As well, social costs exist if the gambler is not fully informed about the risks of gambling or its expected rate of return. They acknowledge, however, that this formulation is debated in the literature.⁴⁹

Whether to include some indicators in impact studies depends on the approach. For example, the classical economic approach does not include "transfers" such as theft, bad debt, and social welfare payments in a cost-benefit analysis, since no money or goods are increased or decreased on a macro or social level. A sociological view, however, includes transfers and costs to individuals such as theft and bankruptcy in its analysis, and emphasizes the importance of intangible psychic costs. Thompson disputes the classical economic position that gambling-related thefts do not represent a social cost because they are a transfer from one individual to another. He argues that the collective wealth of society *is* decreased, since the value of a property declines when it becomes stolen, and therefore the difference in value is a social cost.⁵⁰ Grinols explains that the real resources stolen could be treated as social costs to the victimized public.⁵¹

Welfare payments to persons unable to work because of gambling problems, considered a transfer rather than a real cost to the economy in a neoclassical economic or "cost-of-illness" approach, *would* be included in a budgetary impact study focusing on the impacts to government revenue.⁵²

Henriksson, in a critical review of a Canadian Tax Foundation study on gambling impacts, notes that not including transfers, although good practice from the standpoint of conventional economics, is a reason why:

"Students of the overall effects of gambling dismiss economic studies that take this line as irrelevant. Such studies do tell us something, but they manifestly do not tell us everything about the social impacts of gambling.... [T]he [net economic] costs are much less than the social losses, many of which show up in economists' calculations as "mere" transfers. Thus, the authors' conclusion that gains from gambling exceed losses must be interpreted with extreme caution."⁵³

Indeed, Henriksson's critique of conventional economic benefit-cost analysis indicates precisely how and why the GPI approach differs in aiming to reflect accurately the full social benefits and costs of economic activity, and thereby to bring economic analysis into line with social reality.

The massive Australian Productivity Commission study of the gambling industry did include elements of private or internal costs in its calculations, justifying its approach in this way:

"While private benefits and costs do not normally provide a justification for government policy, an exception is that governments may want to take into account the distribution of private benefits and costs among members of society for equity or fairness reasons. Further, when considering an action to address the social benefits and/or costs of an activity, it is also important for governments to consider any impacts such actions might have on private benefits and costs."⁵⁴

Below is a scan of some of the approaches to specific transfers and social costs in the literature, and the unresolved debates among researchers on these issues.

Family costs

The conventional economic argument asserts that family costs are private ones since the gambler takes these costs into consideration when deciding to gamble. How this issue is handled theoretically and conceptually affects how family abuse costs are handled practically in cost-benefit analyses. In the economic paradigm, family abuse costs are considered private, and are therefore not included in a cost-benefit analysis. Single, on the other hand, asks: "How can we ignore the costs of substance abuse upon other people who have had no part in the initial decision and who may find the effects intolerable (for example, resulting in marriage breakups)? The size of abuse cost estimates will depend very significantly on whether family costs are treated as social costs."⁵⁵

Economic development and employment

Increased employment is often seen as a benefit of the gaming industry, although this too is debated in the literature.⁵⁶ Basically, the question is whether the jobs created are mainly diverted from other job possibilities or from existing jobs or whether the employment is new – that is, whether it reduces unemployment.⁵⁷

From an economic perspective, the main questions that researchers argue need to be considered when looking at the impact of gaming on economic development and on the overall social and economic wellbeing of regions and provinces include:

- Are expenditures diverted from other commodities and other industrial sectors?
- Is there a shift of resources from one region to another?
- Does the introduction of gambling lead to an increase in aggregate consumption at the expense of aggregate saving, which might provide short-term benefits but incur long-term costs?
- Is there a net increase in new money being introduced into the regional economy, e.g. from tourism?⁵⁸

The gambling industry employs people directly, and industries associated with gambling such as restaurants, hotels, etc. might also see increased employment because of demand from gambling patrons. However, as Vaillancourt and Roy point out in their cost-benefit analysis of gambling in Canada, this does not necessarily mean that new jobs are created.⁵⁹ Two criteria are needed for this to be the case. The first is that one must show that local residents' gambling expenditures have created more jobs than would have been created by spending the same amount on alternative local goods and services, or that the money spent on gambling did not displace other goods and services and hence lead to a reduction in employment elsewhere.

The second criterion is that foreign tourists spend more because of gambling services directly (exports of gambling services) and/or that local residents spend less on out of province gambling (import substitution). A general guideline proposed by Rephann et al. is that when less than half of the gamblers are tourists or from outside the area, the net result is a redistribution of money rather than an economic expansion.⁶⁰

Walker criticizes arguments that the economic benefits of casinos are dependent on new money being brought into the local economy from tourism and that gambling may produce a "leakage"

of money out of the local economy.⁶¹ Walker argues that counting money leaving the region (e.g. to buy gaming machines) as a loss is a misunderstanding of basic economic concepts, since increased purchases of goods and services and the resulting increased trade produce benefits for society. Basically, he argues, money going out of the region will bring money in and vice versa. By contrast, the GPI approach, following the argument of Simon Kuznets, one of the architects of national income accounting, notes that there is no necessary correlation between increased spending and social benefit, and that estimates of social benefit must always ask *what* is growing and at what cost.

A study by the United States General Accounting Office notes that negative economic impacts of new gaming venues may include job losses in surrounding businesses, often called the "cannibalization effect."⁶² Calculating the indirect loss of jobs and expenditures created by diverting revenue from other industries to gaming is difficult to calculate since these effects are often not localized or immediately visible. Walker points out that, from an economic perspective, this is not a social cost. It often is the case that new businesses offer products or services that consumers prefer. He says: "The significant issue is not whether some firms are replaced by others, but whether the introduction of the new product increases total societal wealth."⁶³ Again following Kuznets, the GPI approach recognizes the inadequacy of purely quantitative aggregate assessments of societal wealth, and does include qualitative considerations that distinguish between the social benefits and costs of the new firms compared to those that were replaced.

Government revenues and expenditures

Government revenues are considered transfers from individuals to the government, and some government expenditures are then considered transfers back to individuals. Therefore, in a conventional economic cost-benefit analysis, government revenues are not counted as an economic benefit unless the money comes from outside the area. Government expenditures may or may not be transfers or social costs, depending on whether or not society benefits by an increase in societal wealth. Henriksson notes that, given the very high proportion of provincial budgets applied to health care, if gambling activities cause even a tiny increase in health care expenditures, then "the revenue 'growth' [from gambling] becomes illusory."⁶⁴ According to Collins, health care costs in Canada, where there is national insurance, are clearly social costs.⁶⁵

Discretionary costs that governments may incur, such as spending to educate the public about the potential problems of gambling, would not be considered social costs, since, it could be argued, these expenditures are not inevitable consequences of gambling. Payments made to charities and community organizations from government revenues are also not considered a net benefit but are simply a transfer payment from one organization to another.⁶⁶ On the other hand, if advertising, promotions and marketing by gambling operators do not provide adequate consumer information that would protect the public from incurring gambling problems, then the money spent on that advertising, promotion, and marketing can be counted as a social cost.⁶⁷

Productivity losses from gambling problems

Persons who have gambling problems are often characterized as being preoccupied with gambling, which in turn may produce productivity losses due to absenteeism and loss of

productivity on the job.⁶⁸ It is essential to assess the degree to which problem gamblers have higher productivity losses than other workers, and the degree to which those losses are attributable to problem gambling. The debate in the literature is whether productivity loss is a private transfer that should not be included in estimates of costs since there is no cost to outside parties, or whether these losses should be considered as social costs. Job and employee search and retraining costs are social costs that are often overlooked in the literature on productivity losses and indirect economic costs.

Vaillancourt and Roy consider lost or reduced income attributable to gambling as a transfer or private cost, and therefore they do not include it in their own analysis. However, the authors do assume that an employee who misses work due to gambling loses income and is not replaced, so they calculate and include as a cost the tax revenue attributable to gambling that is lost by government.

By contrast, Single et al. take a broader approach and suggest that the valuation of lost production as a result of gambling by the employed should be the loss of wages attributable to gambling problems, plus the associated loss of unpaid output, plus the value of life or quality of life lost due to gambling. For the unemployed or people out of the workforce, the net cost is calculated as the loss of unpaid output plus the value of life lost due to gambling.⁶⁹ Estimates of the value of unpaid work are calculated by the cost of replacing the unpaid work activity if it is purchased from an outside (market) source. Types of unpaid work activities here include childcare, domestic activities like cooking and cleaning, purchasing of goods and services, and volunteer and community work. The value of each of these activities is calculated by the cost of hiring a replacement, and adjusting for pension and benefit contributions.

Compensation for unemployment is sometimes considered as a social cost, as the cost is borne by taxpayers. The general consensus among economists, however, is that this represents an income transfer from the employed to the unemployed, and therefore should not be counted as a social cost in cost-benefit analyses.⁷⁰

Unpaid debt and bankruptcies

In a traditional economic analysis unpaid debts and bankruptcies, although damaging to the creditors, are considered transfers from the creditor to the debtor and are therefore not considered as social costs in the aggregate. However, money spent to recover the bad debt or process the bankruptcy is considered a social cost since that money could have had an alternative use.⁷¹ For example, bankruptcies incur lawsuits and other legal costs such as court time and resources, bill collector fees, and harassment costs.⁷² Some researchers agree with this basic methodological distinction, but point out that bad debts and bankruptcies should still be measured and tracked in order to inform gambling policy.⁷³ Welfare payments incurred by gamblers are also considered transfers and therefore excluded from conventional cost-benefit analyses. However, as Wildman and Chevalier explain, a budgetary impact study focusing on government revenue would include such welfare payments.⁷⁴

Arguing against the conventional economic logic described above, Thompson, Gazel, and Rickman consider that the unrecoverable debts of problem gamblers in bankruptcy court

proceedings should be considered as social costs. In their study of the social costs of gambling in Wisconsin, they assumed that 50% of the gambler's debts would not be repaid and therefore should be considered a social cost. They actually found 50% a low estimate, since evidence indicates that many problem gamblers actually pay few of their debts.⁷⁵

2.7 Social Issues

Implicit taxation

Government revenue from gambling, according to some researchers, is an implicit tax.⁷⁶ This is because net government revenue – the remainder of revenue after winnings and expenses – has the same effect that a direct tax on expenditures would have. In one example, Clotfelter explains that if the net government revenue were 33 cents on the dollar, this would represent the equivalent of a 50% excise tax on the 67 cents used to operate and reap profits from the gaming activity, which is much higher than the excise taxes on alcohol and tobacco products.⁷⁷ From this perspective, the gambling tax revenue is one that gamblers pay, whereas both gamblers and non-gamblers theoretically benefit when government spends that revenue – if social costs are not considered. Azmier points out that it is important to recognize that gross profits from gambling actually are net losses for the gambling adults in the region.⁷⁸

Sustainability

Some researchers also note that it is important to consider in a cost-benefit analysis whether or not the level of revenue the government receives from gaming is sustainable in the long run.

Progressive or regressive taxation

According to Wildman and Chevalier, one of the main issues in looking at the associations between gambling and social problems is whether or not the implicit taxes on gambling are progressive or regressive.⁷⁹ Regressive taxes are those that take a greater proportional share from the poor than from the wealthy. Wildman and Chevalier note that economists reached a consensus as early as the mid-1970's, that gambling taxes were "overwhelmingly regressive" and were twice as regressive as the much criticized sales tax. Many studies have found that people in low-income brackets spend roughly the same absolute amount of money each year on lottery purchases as those in middle and upper-income brackets. However, the percentage of their income spent on lotteries is higher than among those who are more affluent. Clotfelter notes that this conclusion was found in every case he examined.⁸⁰ He stresses that this observation is drawn entirely from empirical studies of actual spending patterns.

Azmier remarks that most economic impact studies do not consider the source of the revenue.⁸¹ However, revenue that is lost by lower-income gamblers is likely to have a greater impact on their ability to meet basic needs than that lost by wealthier gamblers. This, in turn, has impacts for society as a whole.

Income distribution

Traditional economic cost-benefit analysis does not consider distribution effects since they cancel each other out and do not represent a net gain or loss to society from a macro-economic perspective. Governments are concerned to ensure that benefits from gaming are enjoyed by the population at large and that any harm is minimized.⁸² However, the costs and benefits of gambling are not shared equally among the population and those who are harmed are generally different population groups than those who benefit.⁸³

As noted above, lower-income people are effectively taxed regressively through implicit government taxes on gambling. In general, as we have seen, low-income groups also spend a higher proportion of their income on gambling than do higher income people. These factors may widen both income and health gaps within the population. The poor are at an increased risk for gambling problems. Evidence indicates that low-income groups experience gambling-related problems at rates that are higher than those with higher socio-economic status.⁸⁴ This unequal distribution of costs and benefits may be concealed in standard cost-benefit analyses that reveal only net aggregate social benefits and costs. Researchers also speculate that gambling may impact the way income is distributed in a region and thereby affect population health.⁸⁵ Evidence documented in the *British Medical Journal* indicates that regions with wider income inequality generally have poorer health profiles than those with narrower gaps between rich and poor.⁸⁶

Growing income and wealth disparities are also potentially destructive of social cohesion and therefore of aggregate social wellbeing, and can be correspondingly costly to the health and justice systems. The Whistler Symposium report also finds that gambling involves a redistribution of income and expenditures in society. The report states that the "unique challenge is to differentiate between the redistribution effects and true costs...this dimension will need to be elevated in gambling research studies."⁸⁷ The Whistler Symposium recognizes the "need to assess the redistribution effects of gambling in terms of money flows (government revenues, charitable donations, etc.), resources (e.g. labour), and time-use impacts of gambling."⁸⁸

3. Research needs and data gaps

3.1 General needs

Gaming research that looks at the social and economic impacts of gambling is relatively new and very uneven. There are many more studies, for example, researching the connection of gambling to crime than there are studies examining the workplace impacts of gambling. Economists who want to ensure a clear, rigorous, and disciplined economic approach have spearheaded the debate on assessing the economic benefits and costs of gambling. Recently, investigators from other disciplines such as sociology, population health, psychology, anthropology, and geography have joined the debate, as have others who are concerned that qualitative information and intangible costs should also be valued and counted. At least some of this new interest has been generated by

a reaction against what has been perceived as too narrow and restrictive a focus on the part of many economists leading to potentially misleading results, conclusions, and policy implications.

At the same time, problem/pathological gambling and its harmful consequences have received a great deal of attention by researchers, while studies of beneficial aspects, like the positive impacts of gambling revenues that are used for the public good, are rare. In fact, in their 2002 comprehensive literature review, Wildman and Chevalier found only one article dedicated solely to the beneficial impacts of gambling on individuals.⁸⁹ This study showed bingo to be therapeutic to Alzheimer's patients.⁹⁰ Wildman and Chevalier also found no studies that dealt specifically with potentially beneficial impacts of gambling on the gambler's proximal environment, defined as spouse, children, family, friends, and life at work, at school, or in the local community.⁹¹ Wildman and Chevalier found numerous reports dealing with beneficial impacts of gaming to society at large, such as increased employment, income, and tax revenues. However, they found no reliable studies quantifying these impacts. "Entertainment value" for non-problem gamblers has rarely been investigated.⁹²

Studies also often look at one aspect of gambling, ignoring the interconnections with other aspects, or they are descriptions of costs and benefits without adequate empirical basis. There also has been no attempt to measure impacts of gambling on the wellbeing of the population over the long-term. Researchers have produced very few analyses of the full costs and benefits of gaming and many of those studies have been discredited because of methodological issues.

The National Research Council in the United States categorized economic impact studies into three groups. The first group, "gross impact studies," focuses on only one aspect of an economic effect and these studies therefore do not provide a balanced perspective. Typically, these studies provide a simple accounting of aggregate effects of gaming such as gambling revenues, taxes collected, and jobs created. The second group consists of descriptive studies that simply identify benefits and costs associated with gambling without estimating their value. The third type attempts to provide a balanced analysis of costs and benefits, but these studies are hampered by numerous methodological problems as noted above.⁹³

Studies are frequently criticized for having faulty methodology such as small sample sizes that lack generalisability, having cross-sectional rather than longitudinal research designs, and focusing on single social impact measures that are not linked to clustered effects. Investigators acknowledge, however, that gambling research is relatively new and has been hampered by lack of data, empirical evidence, and research consensus concerning indicators and methodology.⁹⁴

Researchers do agree, however, that a key area for further research is the determination of attribution fractions (relative risk ratios) that link gambling in general and problem gambling in particular to particular health and justice outcomes, and to a wide range of social and economic impacts. Since this need is a consensus area among researchers that can dramatically advance the study and understanding of gambling impacts, further work in determining these attribution fractions is also a key recommendation of this report. By supporting the current efforts of the Canadian Centre for Substance Abuse in this field, the Nova Scotia Gaming Foundation can help to advance research on gambling impacts in a significant way.

In a 2003 report, Harold Wynne of the University of Alberta commented on the quality of gambling research:

- There is a paucity of research into the socioeconomic impact of gambling expansion;
- Much of the research that has been done is not scientifically rigorous, and in some instances, it is outright biased towards a particular perspective; and
- There is little agreement as to conceptual or analytical frameworks and methodologies that are best suited to guide cost-benefit analyses of gambling policy decisions."⁹⁵

As well, empirical evidence is limited and data are often unavailable, not appropriate, or buried deep in government departmental budgets in areas such as health, judicial and penal systems, and social welfare.⁹⁶

Recognizing the limitations of sparse literature and research, the Whistler Symposium identified major methodological issues that need resolving, and produced a comprehensive list of recommendations for further research. These research needs include the following:

- measurement of intangible and qualitative impacts of gambling
- the identification of causality and impact outcomes
- the identification of attribution factors
- the transparency of data, funding, and methods
- recognition of the importance of qualitative measurements
- measurements of quality of life issues
- consideration of problem gambling in the context of concurrent disorders
- examination of gambling impacts on high-risk populations
- study of gambling behaviours that are not considered as problems
- separation of problem gambling impacts from regular gambling impacts
- an impact framework using socio-economic and age-sex profiles, population health data, and a social determinants of health approach, to determine the distribution of gambling impacts, including assessment of prevalence
- indicators that are repeatable, comparable at the provincial and national levels, and that show rates of change (i.e. trends) from a baseline
- assessment of gambling by type (e.g. casinos, VLTs, lotteries, bingo), and by the different types and structures of cost and benefit impacts that are associated with each form of gambling, avoiding simplified aggregation that can conceal these differences⁹⁷

The Symposium participants were not able to resolve these complex issues in the few days available to them. They established an international steering committee to continue the work on developing methodological guidelines, identifying data needs, and deriving attribution fractions that eventually could be used to produce balanced cost-benefit analyses of gambling. This project is expected to have preliminary results by 2006.⁹⁸

3.2 Regional impacts

Sub-provincial and local regional impacts are often obscured in provincial aggregates. A major research need in looking at these regional impacts is the assessment of the micro-economic aspects and impacts of gambling. There is currently a lack of data examining both the positive and negative regional impacts of gaming. Conclusions about the nature and extent of local impacts often have to be indirectly inferred from aggregate data, surveys or qualitative studies. In Nova Scotia, it might be helpful to examine data for the nine administrative health districts, or the six statistical health regions used by the Canadian Community Health Survey (CCHS), to assess potential intra-provincial differences in gambling impacts on health.⁹⁹ Such a preliminary analysis may lead to recommendations to Statistics Canada for future survey questions. There also may be differences in the impact of gaming on rural as opposed to urban venues.

3.3 Social environment

Recently, Australian researchers have adopted the view that problem gambling is a social and public health issue subject to the broader range of environmental, socio-cultural, political, and economic factors.¹⁰⁰ Much of the literature, however, especially from the United States, is dominated by the medical disease paradigm that sees gambling problems in terms of individual pathology or mental disorders. This view locates the origin of physical and mental gambling problems primarily within the individual, interacting with selected environmental and biological factors.¹⁰¹ Shaffer and Korn explain: “There are few studies of the contextual determinants of gambling and disordered gambling. Most of the research on the causes of disordered gambling has focused on psychological factors at the expense of the social environment.”¹⁰²

As noted above, there are many studies that investigate particular aspects of gambling, but there are very few comprehensive cost-benefit analyses. In 1999, Vaillancourt and Roy, who produced the first such study for Canada, identified only four— a 1999 national study from the United States, one from Australia also published in 1999, and two studies from Manitoba, both published in 1995.¹⁰³ They criticize the two Manitoba studies as being weak since they “rely on assumptions and outside information in order to estimate key numbers.” The U.S. national study, while massive, does not include intangible costs and could come to no definite conclusion about the amount of costs.¹⁰⁴ The Australian national study relies heavily on intangible costs but also came to no definite conclusion about the amount of costs.¹⁰⁵

3.4 Culture or community groups

There are very few studies, with the exception of some relating to adolescents, addressing cultural or community groups. Although similarities exist, drawing generalities from small community studies might be difficult since communities vary considerably in size, composition, age, interest, etc. Also, groups within spatial communities may experience different impacts, e.g. low-income groups have different experiences and outcomes than higher income groups.¹⁰⁶ The cultural impacts of gaming and the role of culture in moderating other gaming impacts (e.g. impacts on health and wellbeing) require further research and investigation. Researchers have recommended that gambling impact data be disaggregated across several dimensions, including the following:

Gender

Most problem gambler studies have been done with male subjects despite the fact that at least one-third of problem gamblers are women. Most of the studies of female problem gamblers have been performed in clinical populations. This may not be representative of female gamblers since the majority of female problem gamblers do not seek help in treatment programs and in help groups such as Gamblers Anonymous. Further, treatment groups usually represent severe problem gamblers and may not provide adequate information on moderate problem gamblers.¹⁰⁷

First Nations peoples

Most of the literature on the social and economic impacts of gambling on First Nations peoples comes from the United States. There are very few studies on the impacts of gaming on First Nations communities in Canada, despite the fact many of these communities host legalized gambling venues.¹⁰⁸ A Canada West Foundation report on First Nations gambling policy in Canada points out that studies on problem gamblers have been criticized for not looking at the larger population health picture and its socio-economic determinants. The report states,

“Studies that conclude Aboriginal Peoples tend to have above average levels of problem gambling have been criticized for failing to disentangle race and ethnicity from issues of poverty and low socio-demographic status. It has been pointed out that these factors may indeed be a large reason why many American Indians and other indigenous peoples have a tendency to display higher than average levels of problem gambling. Risk factors such as low income, low education, high rates of unemployment and substance abuse have been associated as being precursors to gambling addiction. If these factors do make people more predisposed to becoming problem gamblers, First Nations communities in Canada likely will be at greater risk, as many of their communities experience high rates of substance abuse and have lower than average levels of income and education.”¹⁰⁹

Adolescents—Education

The social and economic impacts of gaming on educational processes and institutions have rarely been addressed, although some reference to educational impacts is found in the literature on adolescent gambling. The Nova Scotia Alcohol and Gaming Authority report, *Convenience Gaming and Social Impacts in Nova Scotia* suggests that, in studying educational impacts, it is important to look at how use of time and money for gambling affects academic achievement and commitment, and also to examine the implications of gambling on future career possibilities.¹¹⁰ The report hypothesizes that, among gambling types, VLTs will have the most negative effect on education.

3.5 Types of games

Noting that there is no clear understanding in the literature of how each type of game contributes to the benefits and costs of gambling, Wildman and Chevalier recommend that differentiation by types of gambling activities should be included in research designs, and that research data and conclusions on gambling impacts should be presented by type of game.¹¹¹

4. Relative risk ratios and gambling statistics

Researchers have identified particular factors that increase risks for problem gambling. Following is a listing of some of the key risk factors identified in the literature as well as a selection of general gambling statistics. The risk factors are not always consistent in the different studies, but the following summary of key findings and results to date may be useful to Nova Scotia policy makers in prioritizing needs and identifying potentially cost-effective policy interventions. As noted in the introduction to this summary, policy makers and the general public cannot afford to wait until all the methodological issues and research needs noted in the first 20 pages of this summary have been resolved. They have to make current policy decisions and act now to ameliorate potentially negative impacts of gambling based on the best available evidence in the field, however inadequate that may be.

While the first 20 pages of this summary are therefore addressed primarily to researchers, the remainder of this summary is presented primarily for a policy audience that can benefit from a summary of some of the key results produced to date. Please note that the following is by no means a full selection of the wide range of gambling statistics and estimates of relative risk ratios contained in the full 212-page literature review, which is attached as an appendix. Rather, the next few pages are simply illustrative of some of the key associations with gambling that have been identified in the research to date, along with a sampling of a few of the better documented statistics and estimates used to verify those associations. For a more complete description of the statistical research, survey results, and gambling-related estimates in the literature, please see the full literature review in the appendix to this summary report. If a statistic has no reference in the following section, this indicates that it part of a group of statistics, and the corresponding endnote number is listed at the end of the particular grouping of statistics.

4.1 General risk conditions

The risk conditions most often found for problem gambling are:

- youth; the percentage of problem gambling risk declines with age
- gender (males are at higher risk although this may be changing)
- psychiatric problems and substance abuse co-morbidity
- a history of anti-social behaviour
- low income and unemployment
- low educational attainment¹¹²

More arguable risk conditions include:

- availability of gambling outlets
- a family history of problem gambling

- coming from a lower socio-economic background.¹¹³

4.2 Expenditures

In Canada:

- In 1999, statistics from Statistics Canada show 59% of households with an average income of less than \$20,000 bought lottery tickets and 8% spent money at casinos, slot machines or VLTs.
- 78% of households with an income of \$80,000 or more bought lottery tickets and 24% spent money on casinos, slot machines or video lottery terminals (VLTs).
- While higher-income households spent more in absolute terms on gambling, the **proportion** of total income spent on gambling was considerably higher for low-income people. Thus, low-income households spent an average of 2.2% of their total household income per year on gambling, or an average of \$296 per household, while high-income households spent 0.5% of their total household income per year, or about \$536 per household, gambling.¹¹⁴

In Nova Scotia:

- 25% of all those who play VLTs each year contributed approximately 96% of the annual provincial net revenue for VLT gambling.
- VLT gamblers identified as problem gamblers contributed just over half of the net revenue for VLT gambling.¹¹⁵

New information from Nova Scotia:

- 40% of net gambling expenditures (i.e. losses) in Nova Scotia are estimated to come from the 6.9% of adults in the province who are currently scoring at any level of risk for problem gambling. (Scoring systems for “at risk”, “problem”, and “pathological” gambling are described in the full literature review attached as an appendix to this summary report).
- VLT expenditures accounted for 60% of net provincial gambling revenue.
- In Nova Scotia, “No Risk” Gamblers spend an average of \$430.00 /year; “At Risk” Gamblers spend \$1,800.00/year, “Problem Gamblers” spend \$7,000.00/year.
- Adults at all levels of annual household income are equally likely to be “At Risk” or score for problem gambling. For those in the highest income bracket (\$60,000+), increased involvement in gambling activities did not translate into greater risk but rather into higher rates of No Risk gambling. Those with household incomes under \$30,000 per year had more risk of becoming problem gamblers if their gambling activities increased.¹¹⁶
- (Also see VLT section below)

4.3 Types of gaming

- VLTs are the gaming activity most associated with problem gambling. In Alberta, 25% of VLT users are classified either as problem gamblers or at risk for problem gambling.¹¹⁷ (See below)
- Lottery ticket purchasers represent the majority of adult gamblers in Nova Scotia with 88% of the adult population having purchased a ticket at some time. Lottery purchasers have the lowest risk of becoming at-risk or problem gamblers.
- Casino participation in Nova Scotia in 2003 was 23% of the adult population, but only 1.9% of adults participate regularly (at least once a month).
- 15% of the adult population in Nova Scotia 2003 played *bingo* in the past year, and 3.2% of regular adult players report problems related to their bingo activity.¹¹⁸

VLTs

- Statistics Canada recently reported that 25% of those playing VLTs were at risk for problem gambling, or already were problem gamblers.¹¹⁹
- A Montreal survey found that 21% of VLT and slot machine players are problem gamblers compared to 2% of the population for all games of chance.¹²⁰
- Problem VLT gamblers in Nova Scotia comprise 16% of all of those who play the machines on a regular basis, which represents approximately 0.92% of all adults in the province.¹²¹

New information from Nova Scotia:

- VLTs are associated with over half of all past problem gamblers (1.4% of Nova Scotia's adult population; \approx 10,000 adults) and of all current self-reported problem gamblers (0.8% of adult population; \approx 6,500 adults) despite the fact that only about 5% of adults are regularly involved in the activity each month.
- VLT gambling exhibits the highest levels of problem gambling in relation to time, money, and other forms of gambling. About one out of every 28 people (3.6%) who have ever tried these gambling machines reports having experienced problems with the amount of time or money spent on the activity. Among past year VLT gamblers, the proportion jumps to one in 17 (5.8%) and it increases dramatically to about one out of six adults (16%) who take part in VLT gambling at least once per month. This is the highest rate of self-reported problem development compared to any other form of gambling available in Nova Scotia.
- Video Lottery gambling is the only gambling activity in past year gambling involvement among adults in Nova Scotia for which the risk of problem gambling (as identified by the Canadian Problem Gambling Index - CPGI) increases if the amount of time spent gambling increases.
- Just under half (43%) of regular VLT gamblers are currently scoring at some level of risk for problem gambling on the CPGI, with 20% identified at moderate to severe problem levels. In other words, almost one in two monthly VLT gamblers in Nova Scotia is scoring at some level of risk, with one in five scoring for significant problems.¹²²

Casinos

- Casinos benefit financially from the gambling habits of problem and pathological gamblers. The typical problem and pathological gambler loses from 10 to 20 times as much as a non-problem gambler might lose in a year.¹²³

- Casinos derive a significant share of their revenue from problem gamblers. The portion of total revenue derived from problem gamblers in casinos is estimated at 41.4% for table games and 74.6% for machine gambling.¹²⁴
- In Nova Scotia, 11.5% of regular casino players experience problems with gambling, especially slot machines.

4.4 Problem gaming demographics

- In 1998, the typical Atlantic Canadian who purchased *lottery* tickets was female (54%), married, aged 25 to 59, had a trade school or less education, lived equally in urban and rural areas, and had an annual income lower than \$45,000.¹²⁵
- *Casino* gamblers in Nova Scotia were almost equally divided between men (53%) and women (47%). The average player was in his or her fifties, with an annual income of between \$25,000 and \$50,000. People with an annual income of over \$50,000 were more likely to have visited one of the casinos than those whose income was under \$30,000. People with a university education also had a higher attendance rate than those with less than high school education, who had the lowest rate.¹²⁶
- 59% of *bingo* players in Nova Scotia have less than high school education, 63% percent are married, and 71% are between the ages of 25 and 54. Women make up 68% of occasional bingo players and 92% of weekly players.¹²⁷
- 26.2% of men who participated in gambling in Nova Scotia in the past year played *VLTs* compared with 16.8% of women who gambled in the past year. Participation decreases with age with the highest participation rates being 36.9% for those aged 19-24, and 32.9% for those aged 25-34. The highest participation rate by income is found in those who have incomes in the mid range of \$30-\$59,999 per year, and who comprise 25% of VLT players.¹²⁸

Gender

- A U.S. study reports that male problem gamblers outnumber women in the 24-35 age group; the numbers are equal in the 35-44 age group; and women problem gamblers greatly outnumber men in the 45-64 age group, a disparity that evens out again after age 65. Women problem gamblers often follow a faster trajectory to problem gambling than men. Women typically move from being "escape gamblers" to more heavy gamblers to compulsive gamblers within three to four years.¹²⁹

New information from Nova Scotia:

- The percentage scoring at any level of risk for problem gambling is about 1.5 times higher among men in Nova Scotia than among women (8.3% versus 5.5%). However, the percentage of men identified at moderate to severe problem levels only differs from women at the 90% confidence level (2.5% versus 1.6%). Women comprise about 40% of those scoring on the CPGI for Problem Gambling in Nova Scotia.¹³⁰

Age

New Information from Nova Scotia:

- The percentage scoring for moderate or severe problem gambling is fairly constant for all age groups under the age of 65.
- The only significant difference for problem gambling by age in the province is that the 25-34 year old age segment has notably higher rates of problem gambling than those 55 years or older (3.4% versus 0.5% for those 65 and older and 1.5% for those aged 55-64).
- Adults under 35 years of age (19-34 years) are significantly more likely than those over 35 years to be involved regularly with VLTs. Of those who gambled on a regularly monthly basis, 10.2% of the 19-24 year olds and 9.7% of the 25-34 year olds played VLTs. Of the adults in the 35 –44 year age range who gambled regularly, 6.7% played VLTs. The percentages continue to decline with age.¹³¹

Adolescents

- Gambling is more popular among young males than young females, and more young males than females exhibit pathological gambling behaviours.
- Prevalence rates of problem gambling among adolescents are higher than those reported by adults.
- Among adolescents there is often a rapid movement from social gambler to problem gambler.¹³²
- In Nova Scotia in 1998, 8.7% of youths in grades 7, 9, 10, and 12 were at-risk for problem gambling, and 6.6% were already problem gamblers.
- In the same study of youth conducted by Dalhousie University researchers, male problem gambler rates were three times those of females. Scratch tabs were the most popular form of gambling activity, presumably because they are the most easily accessible for youth.¹³³
- In 2002, results for adolescent problem gambling in Nova Scotia were similar to those found in 1998. But the proportion of students who reported having participated in one or more gambling activities decreased from 75% of surveyed students in 1998 to about 62% in 2002.¹³⁴
- In one study, 27% of pathological adolescent gamblers reported skipping school more than five times to gamble in the past year. Poor academic performance by pathological adolescent gamblers has also been reported.¹³⁵

Children

- One study found that children of problem gamblers used tobacco, alcohol, and illicit drugs during the previous twelve months more often than did the control group, and they were more likely to over-eat.
- Children of problem gamblers experienced almost twice the incidence of homes broken by separation, divorce, or death of a parent before they had reached the age of fifteen than did the control group (37% compared to 20%).¹³⁶

Seniors

- An Alberta study estimated that 1% to 3% of seniors have problems with gambling.¹³⁷
- In New Brunswick, males in general and younger seniors aged 55 to 64 appear to have more problems gambling than do women and older seniors.¹³⁸

First Nations People

- In Saskatchewan in 2002, 34.7% of Aboriginal gamblers were at-risk for developing a gambling problem and 12% of the Aboriginal population was experiencing serious gambling problems.¹³⁹

4.6 Problem gambling impacts

- Problem gamblers negatively affect an average of 10 to 17 people around them, including family, friends, and employers.¹⁴⁰
- In 2002 in Saskatchewan, 26% of problem gamblers reported not purchasing needed food or groceries, 13% reported not paying medical, dental, or eye care bills, 8.7% reported not paying credit cards, bank loans, or other debts, and 8.6% reported not paying power, heat, or water bills.¹⁴¹
- It is estimated that between 5% and 10% of all personal bankruptcy cases in Nova Scotia can be attributed to gambling problems.¹⁴²
- As a rule of thumb, 15-20% of problem gamblers would likely have problems for a number of adverse impacts ascribed to problem gambling, such as depression, divorce, and separation, even if they did not gamble. For this reason, the Australian Productivity Commission discounted its estimates for difficulties attributable to problem gambling by 20%.¹⁴³

New Information from Nova Scotia:

In the past year problem gamblers reported the following difficulties:

- Almost 50% cite debt and financial problems.
- 33% note relationship problems.
- 25% report job and income losses over the past 12 months.
- About 20% report depression, loneliness, and work-related problems.
- Problem gamblers in Nova Scotia did not cite gambling as a contributing factor in most of the difficulties they experienced in the past year, although about 40% of those Nova Scotians who score as Problem Gamblers did directly attribute financial problems and debt to their gambling.
- Gambling is implicated in about 6% of all relationship problems reported by adults in the province and in about 5% of all financial problems in Nova Scotia over the past year.¹⁴⁴

Co-morbidity and health status

A 2002 Saskatchewan report found:

- 39.1% of problem gamblers have *emotional problems* compared to 3.7% of non-problem gamblers and 3.5% of low risk gamblers
- 34.8% of problem gamblers have problems with *alcohol* compared with 0.9% of non-problem gamblers and 2.3% of low risk gamblers;
- 13% of problem gamblers have problems with *drugs* compared with 0.2% of non-problem gamblers and 1.8% of low-risk gamblers;
- 13% of problem gamblers have *learning disabilities* compared with 1.1% of non-problem gamblers and 2.3% of low risk gamblers.

- 26.1% of problem gamblers reported *long-term illness* of some kind compared to 13.2% of non-problem gamblers, and 12.4% of low risk gamblers.
- 56.5% of the problem gamblers felt *depressed* for two weeks or more compared with 13.3% of those with no problems gambling and 15.2% of low risk gamblers;
- 43.5% of the problem gamblers have had serious *thoughts of suicide* compared to 5.7% of non-problem gamblers and 6.4% of low risk gamblers.¹⁴⁵

Problem gambling has been associated with higher suicide rates:

- Estimates for *attempted suicide* usually range from 17% to 24% of pathological gamblers.¹⁴⁶
- Pathological gamblers have a *suicide rate* five to ten times higher than the general population¹⁴⁷ and their spouses have suicide attempt rates three times higher than the general population.¹⁴⁸
- Between 2000 and 2002, 6.3% of *suicides in Nova Scotia* were found to be gambling related.

Problem gambling has been associated with higher substance abuse rates:

- A review of the literature on pathological gambling and substance abuse found *substance misuse* among pathological gamblers to be from two to three times higher than among the general population.¹⁴⁹
- In Nova Scotia, 74% of regular VLT players *drank alcohol* while they were gambling.¹⁵⁰

Table 1. Pathological and Problem Gambler Risk Ratios

The following table is adapted from Gerstein, Hoffmann, and Larison's *Gambling Impact and Behavior Study* conducted for the U.S. National Opinion Research Center at the University of Chicago. The following **methodological notes** are from that study:

"The following table presents certain values and calculations used to estimate the cost per problem and pathological gambler. Specifically, the estimates of this study compare the rate of costly consequences for these gamblers relative to "predicted" or expected rates for individuals with similar characteristics, but who are low-risk gamblers (they have gambled, but never experienced any symptoms of problem gambling). Specifically, the analysis adjusts for a standard set of characteristics that are believed to be predictive of the behaviors and outcomes of interest. These factors... include age, gender, ethnic identity, educational attainment, use/problems with alcohol and drugs, respectively, and region of the country in addition to variables representing the gambling type of the individual. The purpose of these calculations is to adjust for basic and systematic differences between different types of gamblers that might be related to the outcomes of interest, rather than simply take the difference in outcomes for pathological and problem gamblers and compare them to those with no history of problems.

"The costs are based on the "excess" or difference between the actual rate and the predicted rate, where the predicted rate is calculated from the "odds ratio." Note that for all types of consequences except one the "predicted" rate of problems for problem and pathological is greater than the unadjusted rate for low-risk gamblers. This indicates that problem and pathological gamblers on average are more likely to have characteristics that are associated with the consequences of concern, even if they were not problem gamblers. For example, other tabulations have shown that problem and pathological gamblers are more likely to have alcohol and drug problems and lower educational attainment. If these factors are not

adjusted for, the cost estimates will be somewhat inflated, as having these characteristics (alcohol and drug problems) is generally significantly and negatively related to measures such as divorce, health, and criminal justice involvement.

"For example, the problem of "job loss" was reported by 13.8 percent of pathological gamblers who had been employed during the prior year, compared to a rate of 4.0 for low-risk gamblers. In the logistical regression the "odds ratio" is 2.62, which means that the odds of pathological gamblers experiencing job loss is 2.62 times greater than for low-risk after adjusting for other characteristics. These data imply that pathological gamblers without their gambling problems would have a predicted rate of 5.8 percent. This is greater than the value for low-risk gamblers of 4.0 percent, due to the other characteristics which indicate that pathological gamblers are at higher risk of job loss even without the gambling issues. Predicted rates are estimated from the rates for pathological and problem gamblers, respectively, and their "odds ratios" from multivariate logistical regressions comparing each respective type of gambler to low-risk gamblers."¹⁵¹

Type of Costly Consequence/ Problem	Actual rate of consequence per problem for (1) pathological and (2) problem gamblers	Predicted rate of problem without gambling (see methodological notes above)	Unadjusted rate of problem for low-risk gamblers (for comparison)	Rate of consequences that can be directly attributed to gambling
(1) Pathological gamblers (severe problem)	%	%	%	%
Job loss	13.8	5.8	4.0	8.0
Unemployment insurance	15.0	5.9	4.0	9.1
Welfare benefits	4.6	2.4	1.3	2.2
Bankruptcy	19.2	10.8	5.5	8.4
Divorced ever	53.6	33.5	29.8	20.1
Health poor or fair	31.1	15.7	13.9	15.4
Mental health utilization	13.3	6.7	6.5	6.6
Arrested ever	32.3	19.3	11.1	13.0
Incarceration ever	21.4	6.3	4.0	15.1
(2) Problem gamblers (moderate problem)				
Job loss	10.8	5.5	4.0	5.3
Unemployment insurance	10.9	5.3	4.0	5.6
Welfare benefits	7.3	2.3	1.3	5.0
Bankruptcy	10.3	6.3	5.5	4.0
Divorced ever	39.5	32.1	29.8	7.4
Health poor or fair	16.4	not significant	13.9	16.4
Mental health utilization	12.8	5.6	6.5	7.2
Arrested ever	36.3	15.3	11.1	21.3
Incarceration ever	10.5	6.2	4.0	4.3

Adapted from: Gerstein, D. R., J Hoffmann, and C Larison. *Gambling Impact and Behavior Study*. National Opinion Research Center. The University of Chicago, 1999 [cited April 2004]. Available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

5. Policy Implications

5.1 Strategies that address problem gambling

As noted above, policy makers cannot afford to wait for the perfect research methodologies to determine how to manage gaming most effectively and how to reduce potential harm to society. For the most part, the vast majority of the population who gamble do so responsibly and may enjoy the occasional bingo game, trip to the casino, or the vague hope of winning the lottery. The large number of people with gambling problems, however, and particularly their use of VLT machines, appears to create substantial costs to society. Although problem gamblers or those at risk for problem gambling in Nova Scotia represent only 6.9% of the adult population, new information shows that 40% of gambling expenditures come from the losses of this segment of the population.¹⁵² Earlier evidence indicated that the portion of total casino revenue derived from problem gamblers is 41% for table games and 75% for machine gambling.

The trade-off between the very sizeable gambling revenues and profits generated by problem gamblers and the apparently high costs of problem gambling both to victims and to society at large is a crucial issue that needs to be evaluated by policy makers in making gambling industry decisions. Perhaps the key policy issue raised by GPI Atlantic's extensive literature review is simply this: Can we be really serious about programs designed to reduce or eliminate problem gambling and its associated costs when we are increasingly dependent on the losses of problem gamblers and the revenues they generate? Can the industry, and government at large, afford to see the 40% decline in gambling revenues that would likely occur if problem gambling were eliminated? Or do we need problem gamblers? Openly debating this trade-off in the policy arena, supported by the substantial evidence now available within Nova Scotia, would provide a vital service to Nova Scotians.

Strategies to address problem gambling are clearly the most crucial element of any gambling management plan, as well as the most contentious. The controversy arises not only because the intention and motivation of these strategies are called into question by the dependence of the industry on problem gambler losses, but also because programs may be mis-directed. Most of the strategies to date have considered individual problem gambler behaviour, but have generally not taken the larger societal context and the socio-economic determinants of problem gambling into consideration. As well, the long-term effectiveness of these strategies is unknown and in fact questionable, in light of evidence from the research that the prevalence of problem gambling remains relatively constant and in some cases may be increasing. As the new *2003 Nova Scotia Gambling Prevalence Study* points out:

“Use of the CPGI [Canadian Problem Gambling Index] has resulted in the identification of approximately 15,000 more adults at potential risk for a gambling problem than was the case 10 years ago (1993: 3.1% [percentage of adults identified as Problem Gamblers]; 1996: 3.6%; 2003: 4.8%). This represents an increase of almost 50% in NS over the last decade and is a conservative estimate given that the 1993 figures represent lifetime rates of problem gambling rather than current rates, as is the case in 1996 and 2003.¹⁵³”

Strategies to address problem gambling identified in the literature have included those that target the problem gambler as well as general strategies that effectively restrain all gambling activities. As listed by Eadington, these restraints include: limitations on financial conveniences such as prohibitions against automatic teller machines in casinos; limitations on casino marketing tools and advertising; limitations on locations of venues; education of the general public; self-exclusion of problem gamblers from casinos; and training programs for gaming employees to identify problem gamblers.¹⁵⁴

All Canadian provinces with casinos have voluntary self-exclusion programs that problem gamblers can sign, requesting that the casino exclude them for a specific period of time, usually from 6 to 18 months. During that time the gambler may request a review in order to be reinstated.¹⁵⁵ A number of provinces, including Nova Scotia, have developed public education and training programs and media campaigns to discourage problem gambling. And school-based gambling awareness programs have been initiated in some provinces including Nova Scotia, New Brunswick, and Manitoba.¹⁵⁶ In a major study on the costs and effects of substance abuse, Single et al. discovered that the two provinces with the lowest per capita costs of substance abuse, Ontario and Alberta, were those that invested the most in prevention and research.¹⁵⁷

All provinces fund treatment programs for problem gamblers. Most of these programs are administered within the mental health and addiction treatment sections of the provincial departments of health.¹⁵⁸ Current treatment approaches involve traditional addictions treatment formats that can be either on an outpatient or inpatient basis, hot lines or crisis lines that gamblers can call, and financial counselling.¹⁵⁹

Nova Scotia is a recognized leader in the field of providing both education and research for responsible gaming, and problem gambling services for prevention and treatment. In 2002, the Nova Scotia Gaming Corporation sponsored the first province-wide Responsible Gaming Awareness Week in Canada.¹⁶⁰ The Nova Scotia Department of Health and the Office of Health Promotion are responsible for problem gambling services as well as for the community and research services of the “arms length” Nova Scotia Gaming Foundation (NSGF). In October 2004, the NSGF is sponsoring a major international gaming conference that will raise awareness of the impacts of gambling and promote an important exchange among researchers and policy makers. In sum, Nova Scotia is increasingly in the lead in research and policy formation in this field.

The province’s Problem Gambling Services website states that the service “provides planning, funding, and administration within a public/private partnering model for projects and services for information, prevention, treatment and research in the area of problem gambling.”¹⁶¹ The Problem Gambling Hot Line provides counselling information and advice 24 hours per day 7 days a week—the same hours that the casinos are open. Approximately 80% of the calls received are from VLT problem gamblers.¹⁶²

As noted in the previous section, VLTs are the type of gambling associated most often with gambling problems. In 2002, the Nova Scotia Gaming Corporation released a study on the effectiveness of Responsible Gaming Features (RGFs) on VLTs.¹⁶³ The study showed that

problem gamblers have different behaviours than do non-problem gamblers. Problem gamblers lose track of time and money spent, chase losses, spend more time playing, and play more often than non-problem gamblers. An Alberta report describes VLTs as being faster paced than other forms of gambling, allowing more money to be wagered per session. They are located in bars and licensed restaurants, making them very accessible, and particularly accessible to people who have been drinking alcohol. The design of VLTs, with their bright colors, flashing lights, and pleasant sounds, helps put the gambler into a psychologically detached, dissociative state, according to the Alberta study. As well, there is little skill required to play, and it is easy to learn.¹⁶⁴

In short, the evidence to date indicates that, among the different forms of gambling, VLTs emerge clearly as the primary target of any serious strategy to curb problem gambling. Again, Nova Scotia has been a leader worldwide in promoting responsible gaming for VLT players. The province has capped the number of VLT machines; has restricted them to licensed establishments that exclude youth playing; and offers a training program to VLT retailers in responsible gaming. All of the VLTs in the province now support four Responsible Gaming Features designed to help problem gamblers reduce the amount of time and money spent while playing, without affecting non-problem playing.¹⁶⁵ In fact, the Nova Scotia Gaming Corporation was the first gaming jurisdiction in North America to introduce such features on its VLTs. These machines have a permanent clock, pop-up reminders of play duration, wagers shown as cash rather than credits, and a cash-out after a prescribed time limit.

Smith and Wynne, however, cite a study by Dickerson¹⁶⁶ who questions whether any harm reduction strategy used with VLTs can be effective, since the nature of VLT continuous play encourages loss of control even among non-problem gamblers, and any attempt to reduce the features that impair control would reduce the entertainment value of the machines.¹⁶⁷ As well, the fact that 60% of net provincial gambling revenue comes from VLT losses and that more than half these revenues are generated by problem gamblers again raises the question whether the province is able to or can afford to control VLTs and problem gambling effectively. Again, the policy debate would be enhanced if this trade-off were made more explicit.

Nova Scotia also has enacted regulations that prohibit targeting gambling advertising to youths and prohibit advertising that implies an attractive lifestyle and personal success from gaming. Advertising for bingo and VLTs is regulated by government legislation. Other forms of gaming marketing and advertising are subject to the general terms of Advertising Standards Canada.¹⁶⁸

According to a Canada West Foundation report on 1999-2000 problem gambling treatment expenditures, Nova Scotia's total treatment expenditure as a percentage of the net gambling revenue was the second highest in Canada after Prince Edward Island. Nova Scotia spent \$1,700,000 or 0.96% of the net gaming revenues on treatment for problem gamblers. This was an average of \$2.38 per adult—the highest expenditure in Canada per adult, and nearly twice the national average. Prince Edward Island spent \$150,000 – 1.2% of its net gaming revenue – or \$1.47 per adult, on problem gambling treatments. The Canadian average was \$1.21 spent per adult.¹⁶⁹

5.2 Public Opinion

Public opinion is potentially an important factor in influencing government determination of gambling regulations. LaBrie and Shaffer hypothesize that of the many factors that influence the development of gambling-related policy, some of the most important factors are political ideologies, media coverage, and public opinion.¹⁷⁰ However, a recent Canadian report found a strong dissonance between public policy and public opinion on gambling, particularly in Atlantic Canada.

The Canada West Foundation interviewed Canadians from across the country in 1999 to identify public perceptions and attitudes toward gambling issues. The resulting report claimed that the Canada West survey provides a benchmark on gambling behaviours and attitudes that can be used to track future changes in gambling opinions and behaviour, and that the findings provide a useful context for the current debate. Generally, the survey found that most Canadians tolerate the current level of gambling because of the importance of gambling as a revenue source for government rather than because of its entertainment value or its economic development benefits. For the most part, acceptance was linked to feelings of the inevitability of gambling.¹⁷¹

Regional results presented specific patterns. Atlantic Canadians (AC), in particular, showed the strongest anti-gambling attitudes in the country. The Atlantic respondents were the most likely to disagree that gambling is acceptable. Findings from the Atlantic region included the following:

- 60% of Atlantic Canadians (AC) prefer more restrictions on gambling.
- AC were most opposed to VLT gambling, with 62% in favour of a ban. However, gamblers in the 18-34 age range did not agree with such a ban. The report stated: "Based on the strength of opposition to VLTs in the Atlantic region (at 45%, nearly twice as many respondents *strongly* agree with a ban on VLTs in Atlantic Canada as in Ontario and the Prairies), it is perhaps more accurate to describe the Atlantic region as anti-VLT than as anti-gambling."¹⁷²
- AC were the least willing in Canada to support use of gaming revenue in general or for charities specifically. Only 12% of AC favoured use of gaming revenues to fund charities.
- Preserving the right to gamble regardless of the consequences was agreed on by 63% of Canadians as a whole. However majorities in both Quebec and AC disagreed.
- 32% of Canadians as a whole know a problem gambler, and 56% of AC report knowing a problem gambler.
- AC had the strongest opinion that gambling has negative consequences on the community with 42% agreeing with this view. Only 7% of AC thought gambling has had a positive impact.
- 84% of AC disagreed that their province needs gambling to attract tourists, again the strongest negative view in Canada.
- 36% of AC agreed that employment had increased as a result of gaming.
- AC (78%) and Quebec residents (84%) showed greatest opposition to casino developments in their neighbourhoods.
- AC showed the strongest disagreement in Canada when asked if gambling had improved the quality of life in their province. 63% strongly disagreed and 82% disagreed overall.

In general, the report reached four main conclusions:

- There is a dichotomy between public opinion and gambling policy, with current regulations running counter to public attitudes.
- Nearly every issue has statistically significant regional variations. Atlantic Canada has the lowest level of gambling tolerance and Ontario has the highest.
- The gambling debate seems driven by a relatively small group with strong opinions, while Canada as a whole seems fairly tolerant. Knowing someone with a gambling problem or personally having a problem reduces the level of tolerance.
- Acceptance of gambling is linked to feelings that it is inevitable and important as a source of government revenue.

Nova Scotia produced an analysis of public attitudes toward gaming that is reported in the 1998-1999 Alcohol and Gaming Authority Annual Gaming Report.¹⁷³ VLTs had a disapproval rate of 66%, higher than that of any other type of gaming. Almost 79% of respondents disapproved of Automatic Teller Machines at VLT sites. Over half of the respondents said they would prefer to see VLTs either banned or reduced in number, even if it meant an increase in personal taxes; 49% reported knowing a person with a gambling problem; and 81% of these said that VLTs were the source of the problem.

5.3 Women and Adolescents

The risk factors for problem gamblers among cultural groups and the demographic profiles of problem gamblers appear to be changing. Women and youth, in particular, appear to be more at risk for gambling problems than they were ten years ago. This is important for policy makers to recognize in planning intervention strategies and in targeting such strategies effectively to reach at-risk groups.

Martins et al. reviewed ten years of studies on the clinical and epidemiological characteristics of female gamblers as compared to male gamblers.¹⁷⁴ They saw an increase in the number of women with gambling problems, which is similar to trends seen in alcohol and drug addiction. They pointed out that the progression from social gambler to problem gambler is faster in women than in men, and that the time available for intervention between the onset of gambling and the development of problem gambling and need for treatment is reduced in women.

Volberg found that an increase in female problem gamblers was linked mainly to the increased availability of VLTs. Volberg cautions that, given the preference women have for VLT gaming, the prevalence of women problem gamblers is likely to continue to rise with the increased availability of these machines. She also sees the rapid growth of Internet gambling as a special risk for women since it can be done in the comfort of the home.¹⁷⁵

Australian researchers have also noted that, considering the rising prevalence of women with gambling problems, "it is critical that the relationship between public policy, social impacts and gender be given priority on academic and government research agendas."¹⁷⁶

In a 2003 literature review of adolescent problem gambling, the South Australian Centre for Economic Studies (SACES) voiced its concern that, given the preference of youth for VLT gaming, technological developments could create further risks for youth: “Technological developments such as the internet and the mobile telephony (and also, sophisticated video games) provide new or potentially new distribution channels for gambling participation by young people, who it is recognized are more ‘technologically savvy and astute’ than their parents.”¹⁷⁷

A key policy concern, therefore, is the development of strategies to educate youth and prevent gambling problems before they take hold.¹⁷⁸ Many school systems, including the Nova Scotia system, have gambling educational programs in place. The Drug Dependency and Problem Gambling Services of the Nova Scotia Department of Health, in consultation with the Nova Scotia Department of Education and Culture, produced a two-volume resource manual designed to prevent problem gambling among junior and high school students. The document, entitled *Drawing the Line: A Resource for the Prevention of Problem Gambling*, presents gambling from the perspectives of career and life management, mathematics, and economics. The goal, in part, is to increase awareness of the dividing line between social and problem gambling.¹⁷⁹ There is some evidence of success in these preventive programs, with a 2002 survey indicating a decline in the proportion of Nova Scotia students participating in gambling activities (62% compared to 75% four years earlier), even though the prevalence of problem gambling among students did not change during this period.¹⁸⁰

6. Conclusion

Gambling activities provide entertainment, venues for socializing, and some kind of hope, however illusory, for a better life—at least financially—for some participants. As we have seen, gambling activities, which basically depend on gamblers wagering money and generally losing in the long run, bring a great deal of revenue to governments in the form of implicit taxes. This money may be used to support governmental and non-governmental programs for the public good.

On the other hand, gambling may produce considerable social and economic costs to society. People with gambling problems are the most visible reflection of these costs. But other impacts on the quality of life and social cohesion of the rest of society might also be present. It is important for policy makers to have accurate information about gaming within the larger socioeconomic context, including distributive issues and relative impacts of gambling on lower-income and disadvantaged groups. This knowledge is necessary in order to make informed decisions that will benefit all segments of the population.

Policy makers can either wait to analyze costs and benefits until the contentious issues are resolved with an agreed upon methodology and improved data sources, or, as Wildman suggests:

“In the meantime cost studies could still be undertaken (given the limits imposed by our current knowledge). Methodological work aimed at better evaluating costs can also be of great help and should be facilitated.”¹⁸¹

In assessing the results of its extensive literature review, GPI Atlantic adheres to Wildman's position, and recognizes that gambling impact assessments are essential at the present time, based on the best available knowledge, however inadequate, both to deal with current issues facing governments and to contribute to the state of knowledge in the area. Governments have important policy choices to make at the present time on the management of gaming that cannot wait for the development of a perfect methodology. At the same time, as this summary and the larger literature review recognize, the limitations of current knowledge and methodology should be openly acknowledged and completely transparent, and further research in the field should be encouraged. In particular, the most important current work, which has the greatest potential to advance research and knowledge on gambling impacts and costs, is the development of agreed attribution fractions and relative risk ratios, as spearheaded by the Canadian Centre for Substance Abuse. As with successful work on the costs of tobacco, alcohol abuse, physical inactivity and other risk behaviours, accepted relative risk ratios are the essential basis for any costing studies.

Preliminary evidence available to date further indicates clearly that it is important to go beyond a narrow economic paradigm that excludes many crucial gambling impacts, and to address both the tangible and intangible effects of gambling in any credible analysis of the costs and benefits of gambling. As well, these effects need to be viewed through a multidisciplinary lens within a social and economic context and framework that accounts for different forms of gambling and their impact on different demographic and socio-economic groups. The available evidence indicates that it is only through seeing gaming activities and impacts within the context of the larger society that policy makers will have the knowledge required to provide benefit to all segments of the population and to reduce the harm that can be associated with gambling.

APPENDIX 1
SUMMARY TABLE OF INDICATORS, COSTS, AND
BENEFITS

Table 2. Indicators of Costs and Benefits of Gambling
(to be collected for each type of gambling)

The following table provides a potential framework listing the major costs and benefits of gaming identified in the literature, which can be used in future cost-benefit studies as well as to evaluate existing and prospective studies in the field. The organization of this list is adapted from a framework for the evaluation of the impacts of gambling produced by the Social and Economic Research Centre (SERC) in Australia.¹⁸² This framework is chosen here over others suggested in the literature for its comprehensiveness, its ability to integrate multiple dimensions, and its clarity. It includes seven areas of impact: health and wellbeing, culture, recreation and tourism, employment and education, crime, economic development (macro level), and financial.

The specific costs and benefits listed in the following table go beyond those in the original SERC framework to include other costs and benefits identified in the literature reviewed by GPI Atlantic. These additional costs and benefits have been incorporated into the seven-part SERC framework here as have the four levels of analysis in columns 3-6. In sum, the following table and framework is *adapted* from SERC but *expands* the SERC framework as described.

Level of Analysis		Individual and Family	Community	Region	Provincial
Areas of Impact	Indicators of Costs and Benefits				
Health & wellbeing	Gambling prevalence statistics, e.g. percentage of population gambling, number of problem gamblers, etc.	√	√	√	√
	Standard socio-demographic data & other gambler characteristics: age, sex, region of residence, education, work status, income, number of household members, head of household, marital status, cultural identification, type of games played	√	√		
	Physical health: (issues related to gambling) Individual health, premature mortality, life expectancy	√	√		
	Mental health: (issues related to gambling) Cognitive and sensory stimulation (positive or negative) Stress (reduction or increase) Depression Anxiety Suicide	√	√		

	Pain and suffering incurred by gambler's family	√	√			
	Increased substance abuse (alcohol, drugs, tobacco)	√	√			
	Social health and wellbeing: Social interaction or isolation Relationship breakdown Family problems Effects on children Child abuse Divorce	√	√			
	Effects on community groups	√	√			
	Social cohesion	√	√	√	√	
	Motivations for gambling	√	√			
	Quality of life	√	√	√	√	
	Time use (paid and unpaid work, quality time, amount of time spent gambling)	√	√			
	Costs of health treatment			√	√	
	Costs of problem gambler treatment services and numbers in treatment			√	√	
	Public health and community support services for problem gamblers			√	√	
	Welfare program costs			√	√	
	Environmental Wellbeing	Air quality, noise, land, soil contamination, environmental sustainability			√	√
	Culture	Public attitudes, beliefs, values toward gambling (how these affect costs and benefits)	√	√	√	√
Impacts on specific demographic and cultural groups, e.g. Women, youth, seniors, First Nations peoples			√			
Gaming provision of acceptable social facilities		√	√			
Funds for community groups and charities			√	√	√	
Recreation & Tourism	Entertainment benefits	√	√			
	Additional recreational options	√	√			
	Costs diverted from other forms of entertainment or other activities			√	√	
	Effect on tourism			√	√	
	Amount of tourist gambling			√	√	
	New money brought into area from tourism			√	√	

	Spillover effects from tourist gambling on facilities such as accommodation, dining, and shopping establishments			√	√
Employment	Increased jobs in gambling industry			√	√
	Number of employees in gambling industry and types of jobs, e.g. full/part time, salary, qualifications, staff turnover			√	√
	Industry policies, union participation, affirmative action programs			√	√
	Number of employees previously unemployed			√	√
	Increased jobs in service provider industries			√	√
	Indirect spin-off employment in sectors such as hotels, restaurants			√	√
	Reduced unemployment levels			√	√
	Work productivity losses (including unpaid work)			√	√
	Absenteeism	√			
	Job loss & job change	√			
	Employee search and retraining costs			√	
	Business profits and losses			√	√
	Non-gaming venues experiencing a loss of activity			√	√
	Redirection of expenditures out of local area, leading to job loss			√	√
	Increased taxation revenue providing government with additional opportunities for expenditure on public goods like education, health, environmental protection and related areas				√
	Loss of taxation revenue; e.g. from failed businesses, from sales tax, from money that would have been spent elsewhere in lieu of gambling				√
	Government unemployment and welfare costs			√	√
	Education	Lost time from study	√		
Academic performance		√			
Educational attainment		√	√		
Time and money spent on gambling by adolescents		√	√		
Implications for future human capital				√	√

Legal, justice, and crime	Levels and types of criminal activity attributable to gambling; e.g. street crime, fraud, embezzlement, money laundering, theft, burglary, loan sharking, drug dealing, white collar crime, passing counterfeit currency	√	√	√	√
	Number of people who committed gambling related crime	√			
	Value of money and goods obtained illegally			√	√
	Law enforcement personnel costs			√	√
	Incarceration costs			√	√
	Gambling-related crime regulations and prevention programs			√	√
	Court costs			√	√
	Domestic and other violence	√	√	√	√
	Illegal gambling and organized crime			√	√
	Benefits of regulation (legal vs. illegal gambling)			√	√
	Loss to business from gambling-related crime			√	√
	Lawsuit costs			√	√
	Effects of corruption			√	√
	Costs of intangible impacts: pain and suffering of crime victims	√	√		
	Higher insurance rates	√	√	√	√
	Costs of Increased security measures	√	√	√	√
	Economic development	Increase or decrease in economic activity; e.g. gambling supply and support services			√
Diversion of local monies from other enterprises				√	√
New markets				√	√
Impact on local industries, e.g. business closures or new development				√	√
Efficiency of tax instrument				√	√
Regressive nature of tax				√	√
Income distribution				√	√
Disadvantaged areas: number of gaming machines compared with more wealthy areas, amount of social problems associated with gambling				√	√
Business losses from bad debts and bankruptcy of customers who experience gambling losses			√	√	

	Property values			√	√
	Pawnshop activity			√	√
	Reduction in savings rates due to gambling			√	√
	Long-term infrastructure replacement			√	√
	City image and infrastructure indicators: Natural setting, safe, clean streets, supportive of our neighbourhoods, cultural diversity, social responsibility, relaxed, healthy lifestyle, architectural landscape, pedestrian patterns, traffic, heritage and cultural issues			√	√
	Town planning requirements			√	√
	Financial				
Gaming expenditures (losses)	√				
Percentage of income spent on gambling	√				
Increased debt	√				
Unpaid debt	√				
Bankruptcy					
Government gambling revenue: Increase or loss of revenue to the province from gaming, sales and payroll tax, % of total government revenue, distribution of revenue				√	
Detailed industry operating data			√		
Annual gambling growth rates				√	
Gaming regulation costs				√	
Percentage of gambling revenue to government from problem gamblers	√			√	
Costs of advertising, marketing, promotions, public education, research, data collection				√	
Lobby expenses			√		
Percentage of the total net profit from gaming that goes to charities		√	√	√	
Gambling-related refinancing, loans, mortgage closures			√		

APPENDIX 2

FULL LITERATURE REVIEW IS INCLUDED AS A
SEPARATE DOCUMENT (212 PAGES) AVAILABLE
AT WWW.GPIATLANTIC.ORG

ENDNOTES

¹ Jason J. Azmier, Robin Kelley, and Peter Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* (Canada West Foundation, 2001 [Accessed April 2004]); available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=0A568C150AF0694587256BD5006219D4>.

² National Gambling Impact and Policy Commission (U.S.), *The National Gambling Impact Study Commission : Final Report* (National Gambling Impact and Policy Commission, 1999 [Accessed April 2004]); available from <http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html>.

³ W. N. Thompson, R. Gazel, and D. Rickman, *The Social Costs of Gambling in Wisconsin* (Wisconsin Policy Research Institute Report, 9(6), 1-44, 1996 [Accessed April 2004]); available from <http://www.wpri.org/Reports/Volume9/Vol9no6.pdf>.

⁴ Douglas M. Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003).

⁵ H. J. Wynne and M. Anielski, *The Whistler Symposium Report* (Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]); available from http://www.ccsa.ca/docs/whistler_final.doc.

⁶ The full literature review is available on the GPI Atlantic website at www.gpiatlantic.org

⁷ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* (Nova Scotia Office of Health Promotion, 2004 [Accessed September 2004]); available from www.gov.ns.ca/ohp/repPub/2003Gambling_Prevalence_Study_Report.pdf.

⁸ Productivity Commission, *Australia's Gambling Industries* (Commonwealth of Australia, 1999 [Accessed April 2004]); available from <http://www.pc.gov.au/inquiry/gambling/finalreport/>.

⁹ William R. Eadington, "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003), Douglas M. Walker, *A Simple Model to Explain and Illustrate the Definition of "Social Cost"* (International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse, 2000 [Accessed April 2004]); available from <http://www.ccsa.ca/pdf/ccsa-009988-2000.pdf>.

¹⁰ W.R. Eadington, "The Economies of Casino Gambling," *Journal of Economic Perspectives* 13, no. 3 (1999). p. 188.

¹¹ Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed]). p. 18.

¹² Ibid.([Accessed]).

¹³ Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." p. 153

¹⁴ With support from Canadian organizations in British Columbia, Alberta, Manitoba, Saskatchewan, Quebec, and Ontario

¹⁵ Wynne and Anielski, *The Whistler Symposium Report* ([Accessed]).

¹⁶ Ibid.([Accessed April 2004]).

¹⁷ Ibid.([Accessed]). p. 22.

¹⁸ David Korn, Roger Gibbins, and Jason Azmier, "Framing Public Policy: Towards a Public Health Paradigm for Gambling. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003).

¹⁹ Ibid.p. 15.

- ²⁰ Harold J. Wynne and Howard J. Shaffer, "The Socioeconomic Impact of Gambling: The Whistler Symposium," *Journal of Gambling Studies* 19, no. 2 (2003), p.112.
- ²¹ Ibid.
- ²² Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* (Gambling Research Panel. Victorian Casino and Gaming Authority [Australia], 2001 [Accessed April 2004]); available from <http://www.grp.vic.gov.au/CA256D9600166477/page/Research+Reports-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research?OpenDocument&1=25-Research+Reports~&2=0-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research~&3=~>.
- ²³ G. J. Smith and H. J. Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* (Alberta Gaming Research Institute, 2004 [Accessed]); available from http://www.abgaminginstitute.ualberta.ca/documents/research/VLT_Gambling_Alberta.pdf.
- ²⁴ Robert W. II Wildman and Serge Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* (Ontario Problem Gambling Research Centre, 2002 [Accessed April 2004]); available from <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.
- ²⁵ David Collins and Helen Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* Summer, 19, no. 2 (2003). p.128
- ²⁶ Helen Masterman-Smith, Samalinda Martin, and Jan McMillen, *Social and Economic Impacts of Gambling in New Zealand* (Australian Institute for Gambling Research (AIGR), 2001 [Accessed April 2004]); available from [http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/\\$file/Social&EconomicImpacts.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/$file/Social&EconomicImpacts.pdf). p. 14.
- ²⁷ Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- ²⁸ Eric Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* (Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]); available from http://www.emcdda.eu.int/.../policy_law/expenditure/International%20guidelines%202001%20edition-4.doc?search.
- ²⁹ K. Pernanen et al., *Attributable Fractions for Alcohol and Illicit Drugs in Relation to Crime in Canada: Conceptualization, Methods and Internal Consistency of Estimates* (Bulletin on Narcotics, LII (1 & 2), United Nations Office on Drugs and Crime, 2000 [Accessed April 2004]); available from http://www.unodc.org/unodc/en/bulletin/bulletin_2000_01_01_1_page006.html.
- ³⁰ Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed]). p.54.
- ³¹ D. R. Gerstein, J Hoffmann, and C Larison, *Gambling Impact and Behavior Study* (National Opinion Research Center. The University of Chicago, 1999 [Accessed April 2004]); available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.
- ³² Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- ³³ Eadington, "The Economies of Casino Gambling."
- ³⁴ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- ³⁵ G. J. Smith, H. J. Wynne, and T. F. Hartnagel, *Examining Police Records to Assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton* (Alberta Gaming Research Institute, 2003 [Accessed April 2004]); available from http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling_and_crime.pdf.
- ³⁶ R. Brown, "Pathological Gambling and Associated Patterns of Crime: Comparison with Alcohol and Other Drug Addictions," *Journal of Gambling Behavior* 333 (1987).

- ³⁷ Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed]).
- ³⁸ Wynne and Anielski, *The Whistler Symposium Report* ([Accessed]).
- ³⁹ Ronald Colman, *Costing Policy Change: A Case Study in Applying the GPI Cost of Crime Methodology to a Hypothetical Policy Shift from Legalized Cannabis Use to Prohibition of Cannabis as a Prosecutable Offence* (GPI Atlantic, n.d. [Accessed April 2004]); available from <http://www.gpiatlantic.org>.
- ⁴⁰ Solicitor-General of Canada, "Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims," (Ottawa: Solicitor-General of Canada, 1985).
- ⁴¹ Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- ⁴² Ronald Colman and Colin Dodds, *The Cost of Crime in Nova Scotia* (GPI Atlantic, 1999 [Accessed April 2004]); available from <http://www.gpiatlantic.org/publications/socialcapital.shtml#crime>.
- ⁴³ Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁴⁴ Ibid.
- ⁴⁵ Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000.", Walker, *A Simple Model to Explain and Illustrate the Definition of "Social Cost"* ([Accessed]).
- ⁴⁶ Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁴⁷ Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁴⁸ Eadington, "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁴⁹ Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁵⁰ W. N. Thompson, "Theft Is a Social Cost: Bigger Than We May Have Thought," *Report on Problem Gambling* 1, no. 44 (2000)., cited in: Wildman, R. W. I., & S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Institute. Available: <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.
- ⁵¹ Earl L. Grinols, *Gambling in America: Costs and Benefits* (Cambridge: Cambridge University Press, 2004).
- ⁵² Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- ⁵³ Len Henriksson, "Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto: Canadian Tax Foundation.," no. 4 (2001). p. 3.
- ⁵⁴ Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- ⁵⁵ Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed]).
- ⁵⁶ Grinols, *Gambling in America: Costs and Benefits*.
- ⁵⁷ E. Grinols and J. D. Omorov, "Development or Dreamfield Delusions: Assessing Casino Gambling's Costs and Benefit," *Journal of Law and Commerce* 16 (1996).
- ⁵⁸ Masterman-Smith, Martin, and McMillen, *Social and Economic Impacts of Gambling in New Zealand* ([Accessed]).

- ⁵⁹ François Vaillancourt and Alexandre Roy, *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* (Toronto, Ontario: Canadian Tax Foundation, 2000).
- ⁶⁰ T. J. Rephann et al., "Casino Gambling as an Economic Development Strategy," *Tourism Economics* 3, no. 2 (1997).
- ⁶¹ Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁶² United States General Accounting Office (GAO), *Impact of Gambling: Economic Effects More Measurable Than Social Effects* (United States General Accounting Office, 2000 [Accessed April 2004]); available from <http://www.gao.gov/archive/2000/gg00078.pdf>.
- ⁶³ D. Walker and H. Barnett, "The Social Costs of Gambling: An Economic Perspective," *Journal of Gambling Studies* 15, no. 3 (1999). p.203
- ⁶⁴ Henriksson, "Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto: Canadian Tax Foundation.."
- ⁶⁵ Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁶⁶ Masterman-Smith, Martin, and McMillen, *Social and Economic Impacts of Gambling in New Zealand* ([Accessed).p. 67-68.
- ⁶⁷ Ibid.([Accessed).p. 29.
- ⁶⁸ National Gambling Impact and Policy Commission (U.S.), *The National Gambling Impact Study Commission : Final Report* ([Accessed).
- ⁶⁹ Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed).
- ⁷⁰ Walker and Barnett, "The Social Costs of Gambling: An Economic Perspective."
- ⁷¹ Ibid.
- ⁷² E. L. Grinols, "Business Profitability Vs. Social Profitability: Evaluating the Social Contribution of Industries with Externalities, the Case of the Casino Industry," *Managerial & Decision Economics* 22, no. 1-3 (2001).
- ⁷³ Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- ⁷⁴ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed).
- ⁷⁵ Thompson, Gazel, and Rickman, *The Social Costs of Gambling in Wisconsin* ([Accessed).
- ⁷⁶ C. T. Clotfelter, *Do Lotteries Hurt the Poor? Well, Yes and No* (Duke University, 2000 [Accessed April 2004]); available from <http://www.pubpol.duke.edu/people/faculty/clotfelter/lottsum.pdf>.
- ⁷⁷ Ibid.([Accessed).
- ⁷⁸ Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- ⁷⁹ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed).
- ⁸⁰ Clotfelter, *Do Lotteries Hurt the Poor? Well, Yes and No* ([Accessed).
- ⁸¹ Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- ⁸² Nova Scotia Alcohol and Gaming Authority, *Annual Report for the Fiscal Year Ending March 31, 2003* (Nova Scotia Alcohol and Gaming Authority, 2003 [Accessed April 2004]); available from <http://www.gov.ns.ca/aga/AnnualReport/Section%2066%202003.pdf>.
- ⁸³ Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- ⁸⁴ H. J. Shaffer and D. A. Korn, "Gambling and Related Mental Disorders: A Public Health Analysis," *Annual Review of Public Health* 23 (2002).

- ⁸⁵ L. E. Henriksson, *Government, Gambling and Healthy Populations* (Workshop on Addiction and Population Health, 1999 [Accessed April 2004]); available from http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government_gambling-e/henriksson.htm.
- ⁸⁶ Cited in Colman, Ronald, *The Cost of Chronic Disease in Nova Scotia*, GPI Atlantic, Halifax, October, 2002.
- ⁸⁷ Wynne and Anielski, *The Whistler Symposium Report* ([Accessed].), p.21
- ⁸⁸ Ibid.([Accessed].), p.27
- ⁸⁹ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- ⁹⁰ Benjamin P Sobel, "Bingo Vs. Physical Intervention in Stimulating Short-Term Cognition in Alzheimer's Disease Patients," *American Journal of Alzheimer's Disease and Other Dementias* 16, no. 2 (2001).
- ⁹¹ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- ⁹² Eadington, "The Economies of Casino Gambling."
- ⁹³ Committee on the Social and Economic Impact of Pathological Gambling National Research Council, *Pathological Gambling: A Critical Review* (Washington, D.C.: National Academy Press, 1999).
- ⁹⁴ Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* ([Accessed]).
- ⁹⁵ Wynne and Shaffer, "The Socioeconomic Impact of Gambling: The Whistler Symposium."
- ⁹⁶ Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ⁹⁷ Wynne and Anielski, *The Whistler Symposium Report* ([Accessed].), p.20, 26, 27
- ⁹⁸ Personal correspondence with Nova Scotia Alcohol and Gaming Authority and the Canadian Centre on Substance Abuse, April 2004.
- ⁹⁹ Karen Hayward and Ronald Colman, *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper* (Population and Public Health Branch, Atlantic Region, Health Canada, 2003 [Accessed April 2004]); available from http://www.hc-sc.gc.ca/hppb/regions/atlantic/pdf/Tides_Inequity_and_Chronic_Disease.pdf.
- ¹⁰⁰ Masterman-Smith, Martin, and McMillen, *Social and Economic Impacts of Gambling in New Zealand* ([Accessed]).
- ¹⁰¹ Namrata Raylu and Tian P. S. Oei, "Pathological Gambling : A Comprehensive Review," *Clinical Psychology Review* 22, no. 7 (2002).
- ¹⁰² Shaffer and Korn, "Gambling and Related Mental Disorders: A Public Health Analysis." p. 180.
- ¹⁰³ Phillippe Cyrenne, "An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba," (Winnipeg: University of Winnipeg, Department of Economics, 1995), KPMG Management Consultants, "A Critical Review of "an Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba", " in *Assessment of the Benefits and Costs of the Manitoba Lotteries Corporation*, ed. Mike Ross and Philippe Cyrenne (KPMG Management Consultants, 1995), National Opinion Research Center (NORC), *Gambling Impact and Behavior Study* (National Opinion Research Center at the University of Chicago, 1999 [Accessed]); available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>, Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- ¹⁰⁴ Vaillancourt and Roy, *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* p. 41.
- ¹⁰⁵ L. E. Henriksson, "Gambling in Canada: Some Insights for Cost-Benefit Analysis," *Managerial & Decision Economics* 22, no. 1-3 (2001).

- ¹⁰⁶ G. J. Smith and H. J. Wynne, *A Review of the Gambling Literature in the Economic and Policy Domains* (Alberta Gaming Research Institute, 2000 [Accessed April 2004]); available from <http://www.abgaminginstitute.ualberta.ca/documents/reviews/economic.pdf>.
- ¹⁰⁷ S. S. Martins et al., "Pathological Gambling in Women: A Review," *Revista do Hospital das Clínicas* 57, no. 5 (2002).
- ¹⁰⁸ Kiedrowski & Associates Inc., *Native Gaming and Gambling in Canada* (Indian Northern Affairs Canada, 2001 [Accessed April 2004]); available from <https://dspace.ucalgary.ca/retrieve/699/Final+Native+Gaming5.pdf>.
- ¹⁰⁹ Robin Kelley, *First Nations Gambling Policy in Canada* (Canada West Foundation, 2001 [Accessed April 2004]); available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=AA6EA396C07B7EA087256BD5005F936D>. p. 6.
- ¹¹⁰ MPM Gaming Research, "Towards a Convenience Model of Gaming and Its Social Effects in Nova Scotia, Annual Gaming Report, Appendix F," (Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1998).
- ¹¹¹ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- ¹¹² M. W. Abbott and R. A. Volberg, *Gambling and Problem Gambling in the Community: An International Overview and Critique* (Department of Internal Affairs [New Zealand], 1999 [Accessed April 2004]); available from [http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/\\$file/report1.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/$file/report1.pdf).
- ¹¹³ Ibid.([Accessed]).
- ¹¹⁴ K. Marshall, "The Gambling Industry: Raising the Stakes," *Perspectives on Labour and Income, Statistics Canada Catalogue number 75-001-XPE* Winter (1999).
- ¹¹⁵ Focal Research Consultants Ltd., *Nova Scotia Video Lottery Players' Survey, 1997/98* (Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services, 1998 [Accessed April 2004]); available from <http://www.gov.ns.ca/health/downloads/highlites.pdf>.
- ¹¹⁶ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹¹⁷ Smith and Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* ([Accessed]).
- ¹¹⁸ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹¹⁹ Katherine Marshall and Harold Wynne, "Fighting the Odds," *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE* 16, no. 1 (2003).
- ¹²⁰ S. Chevalier and D. Allard, *Lotteries, Slot Machines & Health: Survey on Gambling in Montréal [Summary Report]* (Montreal-Centre Regional Health and Social Services Board, 2001 [Accessed April 2004]); available from http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1_eng.pdf.
- ¹²¹ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹²² Ibid.([Accessed]).
- ¹²³ Grinols, *Gambling in America: Costs and Benefits*.
- ¹²⁴ H. Lesieur, "Costs and Treatment of Pathological Gambling," *The Annals. American Academy of Political and Social Sciences (AAPSS)* 556, no. March (1998).
- ¹²⁵ MPM Gaming Research, "Final Report. Convenience Gaming and Social Impacts in Nova Scotia," (Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1999).
- ¹²⁶ Ibid.
- ¹²⁷ Ibid.
- ¹²⁸ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹²⁹ N. Dow Schull, *Escape Mechanism: Women, Caretaking, and Compulsive Machine Gambling. Working Paper No. 41* (Center for Working Families, University of California, 2002 [Accessed April 2004]); available from http://www.bc.edu/bc_org/avp/wfnetwork/berkeley/papers/41.pdf.
- ¹³⁰ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹³¹ Ibid.([Accessed]).

- ¹³² J. L. Derevensky and R. Gupta, *Adolescents with Gambling Problems: A Synopsis of Our Current Knowledge* (eGambling, issue 10, 2004 [Accessed April 2004]); available from <http://www.camh.net/egambling/archive/pdf/EJGI-Issue10/ejgi-issue10-derevensky-gupta.pdf>.
- ¹³³ Christiane Poulin, "Problem Gambling among Adolescent Students in the Atlantic Provinces of Canada," *Journal of Gambling Studies* 16, no. 1 (2000).
- ¹³⁴ Christiane Poulin, *Nova Scotia Student Drug Use Survey 2002: Technical Report* (Halifax: Dalhousie University, Community Health and Epidemiology, 2002 [Accessed April 2004]); available from http://www.gov.ns.ca/health/downloads/2002_NSDrugTechnical.pdf.
- ¹³⁵ J.L. Derevensky and R. Gupta, "Prevalence Estimates of Adolescent Gambling: A Comparison of the SOGS-Ra, DSM-IV-J, and the GA 20 Questions," *Journal of Gambling Studies* 16, no. 2/3 (2000).
- ¹³⁶ D.F. Jacobs et al., "Children of Problem Gamblers," *Journal of Gambling Behaviour* 5 (1989).
- ¹³⁷ B. Munro, *Seniors Who Gamble: A Summary Review of the Literature* (Alberta Gaming Research Institute, 2003 [Accessed April 2004]); available from http://www.abgaminginstitute.ualberta.ca/documents/research/Munro_Seniors.pdf.
- ¹³⁸ T. Schellinck et al., *2002 Seniors Survey – Prevalence of Substance Use and Gambling among New Brunswick Adults Aged 55+* (New Brunswick Department of Health and Wellness, 2002 [Accessed April 2004]); available from <http://www.gnb.ca/0378/pdf/SeniorsFinalReport2002ENG.pdf>.
- ¹³⁹ Harold J. Wynne, *Gambling and Problem Gambling in Saskatchewan. Final Report* (Saskatchewan Health, 2002 [Accessed April 2004]); available from http://www.health.gov.sk.ca/ps_fin_rep_prev_of_prob_gam.html.
- ¹⁴⁰ Shaffer and Korn, "Gambling and Related Mental Disorders: A Public Health Analysis."
- ¹⁴¹ Wynne, *Gambling and Problem Gambling in Saskatchewan. Final Report* ([Accessed]).
- ¹⁴² Citizens' Committee on Destination Gaming and D. Bourgeois (Chairperson), *The Potential Economic, Social, and Image Impacts of a Casino in Moncton* (Moncton [New Brunswick] City Council, 2001 [Accessed April 2004]); available from <http://www.moncton.org/search/english/CITYHALL/citydepartments/casinofinalreport.pdf>.
- ¹⁴³ Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- ¹⁴⁴ Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹⁴⁵ Wynne, *Gambling and Problem Gambling in Saskatchewan. Final Report* ([Accessed]).
- ¹⁴⁶ Marc N. Potenza et al., "Gambling: An Addictive Behavior with Health and Primary Care Implications," *JGIM: Journal of General Internal Medicine* 17, no. 9 (2002).
- ¹⁴⁷ H. Lesieur, "Compulsive Gambling," *Society* May/June (1992).
- ¹⁴⁸ Lesieur, "Costs and Treatment of Pathological Gambling."
- ¹⁴⁹ B. Spunt et al., "Pathological Gambling and Substance Misuse: A Review of the Literature," *Substance Use and Misuse* 33 (1998).
- ¹⁵⁰ Focal Research Consultants Ltd., *Nova Scotia Video Lottery Players' Survey, 1997/98* ([Accessed]).
- ¹⁵¹ Gerstein, Hoffmann, and Larison, *Gambling Impact and Behavior Study* ([Accessed]. p. 57-58).
- ¹⁵² Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- ¹⁵³ Ibid.([Accessed]).
- ¹⁵⁴ Eadington, "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- ¹⁵⁵ KPMG, *Casino Market Assessment: Moncton, New Brunswick* (City of Moncton, 2002 [Accessed]); available from <http://www.moncton.org/search/english/CITYHALL/publications/finalcasinoreport.pdf>.
- ¹⁵⁶ Ibid.([Accessed]).
- ¹⁵⁷ Eric Single, "Estimating the Costs of Substance Abuse : Implications to the Estimation of the Costs and Benefits of Gambling. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003).
- ¹⁵⁸ David A. Korn and Howard J. Shaffer, "Gambling and the Health of the Public: Adopting a Public Health Perspective," *Journal of Gambling Studies* 15, no. 4 (1999).

- ¹⁵⁹ KPMG, *Casino Market Assessment: Moncton, New Brunswick* ([Accessed]).
- ¹⁶⁰ Nova Scotia Gaming Corporation, *What Makes NSGC a Leader* (Author, n.d. [Accessed April 2004]); available from <http://www.gamingcorp.ns.ca/responsible/makesleader.htm>.
- ¹⁶¹ Nova Scotia Department of Health, *Problem Gambler Services Website* ([Accessed April 2004]); available from <http://www.gov.ns.ca/heal/gambling/>.
- ¹⁶² Focal Research Consultants Ltd., *Video Lottery Responsible Gaming Feature Research* (Nova Scotia Gaming Corporation, 2002 [Accessed April 2004]); available from <http://www.gamingcorp.ns.ca/responsible/pbrgf.htm>.
- ¹⁶³ Ibid.([Accessed]).
- ¹⁶⁴ Smith and Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* ([Accessed]).
- ¹⁶⁵ Nova Scotia Department of Health, "2000 Regular Video Lottery (VI) Players Follow up Survey," (Halifax, N.S.: Author, 2002).
- ¹⁶⁶ M. Dickerson, "Exploring the Limits of 'Responsible Gambling': Harm Minimization or Consumer Protection?" (paper presented at the 12th Annual Conference of the National Association for Gambling Studies, Melbourne Australia, 2003).
- ¹⁶⁷ Smith and Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* ([Accessed]).
- ¹⁶⁸ Nova Scotia Alcohol and Gaming Authority, *Nova Scotia Annual Gaming Report 1999-2000* (Nova Scotia Alcohol and Gaming Authority, 2000 [Accessed April 2004]); available from <http://www.gov.ns.ca/aga/AnnualReport/Gaming%202000%20Report.pdf>.
- ¹⁶⁹ Jason J. Azmier, *Gambling in Canada 2001: An Overview* (Canada West Foundation, 2001 [Accessed April 2004]); available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=866FE244FF51B28087256BD5006193CF>.
- ¹⁷⁰ Richard LaBrie and Howard J. Shaffer, *Toward a Science of Gambling Regulation: A Concept Statement* (AGA Responsible Gaming Lecture Series, Vol 2 (2). 2003 [Accessed]).
- ¹⁷¹ Jason J. Azmier, *Canadian Gambling Behaviour and Attitudes: Main Report* (Canada West Foundation, 2000 [Accessed April 2004]); available from <http://www.cwf.ca>.
- ¹⁷² Ibid.([Accessed]).p. 12 (emphasis added).
- ¹⁷³ Nova Scotia Alcohol and Gaming Authority, "Annual Gaming Report. Volume I," (Halifax, N.S.: Alcohol and Gaming Authority, 1999).
- ¹⁷⁴ Martins et al., "Pathological Gambling in Women: A Review."
- ¹⁷⁵ R. Volberg, *Has There Been a "Feminization" of Gambling and Problem Gambling in the United States?* (eGambling, issue 8, 2003 [Accessed April 2004]); available from <http://www.camh.net/egambling/issue8/feature/index.html>.
- ¹⁷⁶ Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* ([Accessed]). p. 4.2.
- ¹⁷⁷ South Australian Centre for Economic Studies (SACES), *Measurement of Prevalence of Youth Problem Gambling in Australia: Report on Review of Literature* (Department of Family and Community Services [AU], 2003 December [Accessed April 2004]); available from [http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/\\$File/PrevalenceStudiesFinalReport.pdf](http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/$File/PrevalenceStudiesFinalReport.pdf). p. 1.
- ¹⁷⁸ Derevensky and Gupta, *Adolescents with Gambling Problems: A Synopsis of Our Current Knowledge* ([Accessed]).
- ¹⁷⁹ Problem Gambling Services Nova Scotia Department of Health and Department of Education and Culture, *Drawing the Line: A Resource for the Prevention of Problem Gambling* (Halifax: Province of Nova Scotia, 1997).
- ¹⁸⁰ Poulin, *Nova Scotia Student Drug Use Survey 2002: Technical Report* ([Accessed]).
- ¹⁸¹ Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]). p. 38.

¹⁸² Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* ([Accessed]).

REFERENCES

Abbott, M. W., and R. A. Volberg. *Gambling and Problem Gambling in the Community: An International Overview and Critique*. Department of Internal Affairs [New Zealand], 1999 [Accessed April 2004]. Available from [http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/\\$file/report1.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/$file/report1.pdf).

Azmier, Jason J. *Canadian Gambling Behaviour and Attitudes: Main Report*. Canada West Foundation, 2000 [Accessed April 2004]. Available from <http://www.cwf.ca>.

———. *Gambling in Canada 2001: An Overview*. Canada West Foundation, 2001 [Accessed April 2004]. Available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=866FE244FF51B28087256BD5006193CF>.

Azmier, Jason J., Robin Kelley, and Peter Todosichuk. *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling*. Canada West Foundation, 2001 [Accessed April 2004]. Available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=0A568C150AF0694587256BD5006219D4>.

Brown, R. "Pathological Gambling and Associated Patterns of Crime: Comparison with Alcohol and Other Drug Addictions." *Journal of Gambling Behavior*, 333 (1987): 98-114.

Chevalier, S., and D. Allard. *Lotteries, Slot Machines & Health: Survey on Gambling in Montréal [Summary Report]*. Montreal-Centre Regional Health and Social Services Board, 2001 [Accessed April 2004]. Available from http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1_eng.pdf.

Citizens' Committee on Destination Gaming, and D. Bourgeois (Chairperson). *The Potential Economic, Social, and Image Impacts of a Casino in Moncton*. Moncton [New Brunswick] City Council, 2001 [Accessed April 2004]. Available from <http://www.moncton.org/search/english/CITYHALL/citydepartments/casinofinalreport.pdf>.

Clotfelter, C. T. *Do Lotteries Hurt the Poor? Well, Yes and No*. Duke University, 2000 [Accessed April 2004]. Available from <http://www.pubpol.duke.edu/people/faculty/clotfelter/lottsum.pdf>.

Collins, David, and Helen Lapsley. "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 123-48.

———. "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, Summer, 19, no. 2 (2003): 123-48.

Colman, Ronald. *Costing Policy Change: A Case Study in Applying the GPI Cost of Crime Methodology to a Hypothetical Policy Shift from Legalized Cannabis Use to Prohibition of Cannabis as a Prosecutable Offence*. GPI Atlantic, n.d. [Accessed April 2004]. Available from <http://www.gpiatlantic.org>.

Colman, Ronald, and Colin Dodds. *The Cost of Crime in Nova Scotia*. GPI Atlantic, 1999 [Accessed April 2004]. Available from <http://www.gpiatlantic.org/publications/socialcapital.shtml#crime>.

Committee on the Social and Economic Impact of Pathological Gambling National Research Council. *Pathological Gambling: A Critical Review*. Washington, D.C.: National Academy Press, 1999.

Cyrenne, Phillippe. "An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba." Winnipeg: University of Winnipeg, Department of Economics, 1995.

Derevensky, J. L., and R. Gupta. *Adolescents with Gambling Problems: A Synopsis of Our Current Knowledge*. eGambling, issue 10, 2004 [Accessed April 2004]. Available from <http://www.camh.net/egambling/archive/pdf/EJGI-Issue10/ejgi-issue10-derevensky-gupta.pdf>.

Derevensky, J.L., and R. Gupta. "Prevalence Estimates of Adolescent Gambling: A Comparison of the SOGS-Ra, DSM-IV-J, and the GA 20 Questions." *Journal of Gambling Studies*, 16, no. 2/3 (2000): 227–51.

Dickerson, M. "Exploring the Limits of 'Responsible Gambling': Harm Minimization or Consumer Protection?" Paper presented at the 12th Annual Conference of the National Association for Gambling Studies, Melbourne Australia 2003.

Dow Schull, N. *Escape Mechanism: Women, Caretaking, and Compulsive Machine Gambling. Working Paper No. 41*. Center for Working Families, University of California, 2002 [Accessed April 2004]. Available from http://www.bc.edu/bc_org/avp/wfnetwork/berkeley/papers/41.pdf.

Eadington, W.R. "The Economies of Casino Gambling." *Journal of Economic Perspectives*, 13, no. 3 (1999): 173-92.

Eadington, William R. "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 185-213.

Focal Research Consultants. *2003 Nova Scotia Gambling Prevalence Study*. Nova Scotia Office of Health Promotion, 2004 [Accessed September 2004]. Available from www.gov.ns.ca/ohp/repPub/2003Gambling_Prevalence_Study_Report.pdf.

Focal Research Consultants Ltd. *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services, 1998 [Accessed April 2004]. Available from <http://www.gov.ns.ca/health/downloads/highlites.pdf>.

———. *Video Lottery Responsible Gaming Feature Research*. Nova Scotia Gaming Corporation, 2002 [Accessed April 2004]. Available from <http://www.gamingcorp.ns.ca/responsible/pbrgf.htm>.

Gerstein, D. R., J Hoffmann, and C Larison. *Gambling Impact and Behavior Study*. National Opinion Research Center. The University of Chicago, 1999 [Accessed April 2004]. Available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

Grinols, E. L. "Business Profitability Vs. Social Profitability: Evaluating the Social Contribution of Industries with Externalities, the Case of the Casino Industry." *Managerial & Decision Economics*, 22, no. 1-3 (2001): 143– 62.

Grinols, E., and J. D. Omorov. "Development or Dreamfield Delusions: Assessing Casino Gambling's Costs and Benefit." *Journal of Law and Commerce*, 16 (1996): 49-87.

Grinols, Earl L. *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press, 2004.

Hayward, Karen, and Ronald Colman. *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper*. Population and Public Health Branch, Atlantic Region, Health Canada, 2003 [Accessed April 2004]. Available from http://www.hc-sc.gc.ca/hppb/regions/atlantic/pdf/Tides_Inequity_and_Chronic_Disease.pdf.

Henriksson, L. E. "Gambling in Canada: Some Insights for Cost-Benefit Analysis." *Managerial & Decision Economics*, 22, no. 1-3 (2001): 113-23.

———. *Government, Gambling and Healthy Populations*. Workshop on Addiction and Population Health, 1999 [Accessed April 2004]. Available from http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government_gambling-e/henriksson.htm.

Henriksson, Len. "Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto: Canadian Tax Foundation." no. 4 (2001).

Jacobs, D.F., A.R. Marston, R.D. Singer, K. Widaman, T. Little, and J. Veizades. "Children of Problem Gamblers." *Journal of Gambling Behaviour*, 5 (1989): 261-68.

Kelley, Robin. *First Nations Gambling Policy in Canada*. Canada West Foundation, 2001 [Accessed April 2004]. Available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=AA6EA396C07B7EA087256BD5005F936D>.

Kiedrowski & Associates Inc. *Native Gaming and Gambling in Canada*. Indian Northern Affairs Canada, 2001 [Accessed April 2004]. Available from <https://dspace.ucalgary.ca/retrieve/699/Final+Native+Gaming5.pdf>.

Korn, David A., and Howard J. Shaffer. "Gambling and the Health of the Public: Adopting a Public Health Perspective." *Journal of Gambling Studies*, 15, no. 4 (1999): 289-365.

Korn, David, Roger Gibbins, and Jason Azmier. "Framing Public Policy: Towards a Public Health Paradigm for Gambling. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 235-56.

KPMG. *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton, 2002. [Accessed April 2004] Available from <http://www.moncton.org/search/english/CITYHALL/publications/finalcasinoreport.pdf>.

KPMG Management Consultants. "A Critical Review of "an Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba"." In *Assessment of the Benefits and Costs of the Manitoba Lotteries Corporation*, edited by Mike Ross and Philippe Cyrenne: KPMG Management Consultants, 1995.

LaBrie, Richard, and Howard J. Shaffer. *Toward a Science of Gambling Regulation: A Concept Statement*. AGA Responsible Gaming Lecture Series, Vol 2 (2). 2003.

Lesieur, H. "Compulsive Gambling." *Society*, May/June (1992): 43-50.

———. "Costs and Treatment of Pathological Gambling." *The Annals. American Academy of Political and Social Sciences (AAPSS)*, 556, no. March (1998): 153-59.

Marshall, K. "The Gambling Industry: Raising the Stakes." *Perspectives on Labour and Income, Statistics Canada Catalogue number 75-001-XPE*, Winter (1999).

Marshall, Katherine, and Harold Wynne. "Fighting the Odds." *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE*, 16, no. 1 (2003).

Martins, S. S., D. S. Lobo, H. Tavares, and I. V. Genti. "Pathological Gambling in Women: A Review." *Revista do Hospital das Clínicas*, 57, no. 5 (2002): 235-42.

Masterman-Smith, Helen, Samalinda Martin, and Jan McMillen. *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR), 2001 [Accessed April 2004]. Available from [http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/\\$file/Social&EconomicImpacts.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/$file/Social&EconomicImpacts.pdf).

MPM Gaming Research. "Final Report. Convenience Gaming and Social Impacts in Nova Scotia." Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1999.

———. "Towards a Convenience Model of Gaming and Its Social Effects in Nova Scotia, Annual Gaming Report, Appendix F." Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1998.

Munro, B. *Seniors Who Gamble: A Summary Review of the Literature*. Alberta Gaming Research Institute, 2003 [Accessed April 2004]. Available from http://www.abgaminginstitute.ualberta.ca/documents/research/Munro_Seniors.pdf.

National Gambling Impact and Policy Commission (U.S.). *The National Gambling Impact Study Commission: Final Report*. National Gambling Impact and Policy Commission, 1999 [Accessed April 2004]. Available from <http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html>.

National Opinion Research Center (NORC). *Gambling Impact and Behavior Study*. National Opinion Research Center at the University of Chicago, 1999. Available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

Nova Scotia Alcohol and Gaming Authority. "Annual Gaming Report. Volume I." Halifax, N.S.: Alcohol and Gaming Authority, 1999.

———. *Annual Report for the Fiscal Year Ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority, 2003 [Accessed April 2004]. Available from <http://www.gov.ns.ca/aga/AnnualReport/Section%2066%202003.pdf>.

———. *Nova Scotia Annual Gaming Report 1999-2000*. Nova Scotia Alcohol and Gaming Authority, 2000 [Accessed April 2004]. Available from <http://www.gov.ns.ca/aga/AnnualReport/Gaming%202000%20Report.pdf>.

Nova Scotia Department of Health. "2000 Regular Video Lottery (VI) Players Follow up Survey." Halifax, N.S.: Author, 2002.

———. *Problem Gambler Services Website*. [Accessed April 2004]. Available from <http://www.gov.ns.ca/heal/gambling/>.

Nova Scotia Gaming Corporation. *What Makes NSGC a Leader*. Author, n.d. [Accessed April 2004]. Available from <http://www.gamingcorp.ns.ca/responsible/makesleader.htm>.

Pernanen, K., S. Brochu, M.-M Cousineau, L.-G Cournoyer, and Fu Sun. *Attributable Fractions for Alcohol and Illicit Drugs in Relation to Crime in Canada: Conceptualization, Methods and Internal Consistency of Estimates*. Bulletin on Narcotics, LII (1 & 2), United Nations Office on Drugs and Crime, 2000 [Accessed April 2004]. Available from http://www.unodc.org/unodc/en/bulletin/bulletin_2000_01_01_1_page006.html.

Potenza, Marc N., David A. Fiellin, George R. Heninger, Bruce J. Rounsaville, and Carolyn M. Mazure. "Gambling: An Addictive Behavior with Health and Primary Care Implications." *JGIM: Journal of General Internal Medicine*, 17, no. 9 (2002): 721-32.

Poulin, Christiane. *Nova Scotia Student Drug Use Survey 2002: Technical Report*. Halifax: Dalhousie University, Community Health and Epidemiology, 2002 [Accessed April 2004]. Available from http://www.gov.ns.ca/health/downloads/2002_NSDrugTechnical.pdf.

———. "Problem Gambling among Adolescent Students in the Atlantic Provinces of Canada." *Journal of Gambling Studies*, 16, no. 1 (2000): 53-78.

Problem Gambling Services Nova Scotia Department of Health, and Department of Education and Culture. *Drawing the Line: A Resource for the Prevention of Problem Gambling*. Halifax: Province of Nova Scotia, 1997.

Productivity Commission. *Australia's Gambling Industries*. Commonwealth of Australia, 1999 [Accessed April 2004]. Available from <http://www.pc.gov.au/inquiry/gambling/finalreport/>.

Raylu, Namrata, and Tian P. S. Oei. "Pathological Gambling : A Comprehensive Review." *Clinical Psychology Review*, 22, no. 7 (2002): 1009-61.

Rephann, T. J., M. Dalton, A. Stair, and A. Isserman. "Casino Gambling as an Economic Development Strategy." *Tourism Economics*, 3, no. 2 (1997): 161-84.

Schellinck, T., T. Schrans, G. Walsh, and J. Grace. *2002 Seniors Survey – Prevalence of Substance Use and Gambling among New Brunswick Adults Aged 55+*. New Brunswick Department of Health and Wellness, 2002 [Accessed April 2004]. Available from <http://www.gnb.ca/0378/pdf/SeniorsFinalReport2002ENG.pdf>.

Shaffer, H. J., and D. A. Korn. "Gambling and Related Mental Disorders: A Public Health Analysis." *Annual Review of Public Health*, 23 (2002): 171-212, [cited April 2004]. Available: <http://www.hms.harvard.edu/doi/html/reprints/shafferkornaph.pdf>.

Single, Eric. "Estimating the Costs of Substance Abuse : Implications to the Estimation of the Costs and Benefits of Gambling. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 215-33.

Single, Eric, David Collins, Brian Easton, Henrick Harwood, Helen Lapsley, Pierre Kopp, and Ernesto Wilson. *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition*. Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]. Available from http://www.emcdda.eu.int/.../policy_law/expenditure/International%20guidelines%202001%20edition-4.doc?search.

Smith, G. J., and H. J. Wynne. *A Review of the Gambling Literature in the Economic and Policy Domains*. Alberta Gaming Research Institute, 2000 [Accessed April 2004]. Available from <http://www.abgaminginstitute.ualberta.ca/documents/reviews/economic.pdf>.

———. *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute, 2004 [Accessed April 2004]. Available from http://www.abgaminginstitute.ualberta.ca/documents/research/VLT_Gambling_Alberta.pdf.

Smith, G. J., H. J. Wynne, and T. F. Hartnagel. *Examining Police Records to Assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton*. Alberta Gaming Research Institute, 2003 [Accessed April 2004]. Available from http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling_and_crime.pdf.

Sobel, Benjamin P. "Bingo Vs. Physical Intervention in Stimulating Short-Term Cognition in Alzheimer's Disease Patients." *American Journal of Alzheimer's Disease and Other Dementias*, 16, no. 2 (2001): 115-20.

Social and Economic Research Centre (SERC) University of Queensland. *The Social and Economic Impacts of Gaming: A Framework for Research*. Gambling Research Panel. Victorian Casino and Gaming Authority [Australia], 2001 [Accessed April 2004]. Available from <http://www.grp.vic.gov.au/CA256D9600166477/page/Research+Reports-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research?OpenDocument&1=25-Research+Reports~&2=0-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research~&3=~>.

Solicitor-General of Canada. "Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims." Ottawa: Solicitor-General of Canada, 1985.

South Australian Centre for Economic Studies (SACES). *Measurement of Prevalence of Youth Problem Gambling in Australia: Report on Review of Literature*. Department of Family and Community Services [AU], 2003 December [Accessed April 2004]. Available from [http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/\\$File/PrevalenceStudiesFinalReport.pdf](http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/$File/PrevalenceStudiesFinalReport.pdf).

Spunt, B., I Dupont, H. Lesieur, H.J. Liberty, and D. Hunt. "Pathological Gambling and Substance Misuse: A Review of the Literature." *Substance Use and Misuse*, 33 (1998): 2535-60.

Thompson, W. N. "Theft Is a Social Cost: Bigger Than We May Have Thought." *Report on Problem Gambling*, 1, no. 44 (2000): 46.

Thompson, W. N., R. Gazel, and D. Rickman. *The Social Costs of Gambling in Wisconsin*. Wisconsin Policy Research Institute Report, 9(6), 1-44, 1996 [Accessed April 2004]. Available from <http://www.wpri.org/Reports/Volume9/Vol9no6.pdf>.

United States General Accounting Office (GAO). *Impact of Gambling: Economic Effects More Measurable Than Social Effects*. United States General Accounting Office, 2000 [Accessed April 2004]. Available from <http://www.gao.gov/archive/2000/gg00078.pdf>.

Vaillancourt, François, and Alexandre Roy. *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto, Ontario: Canadian Tax Foundation, 2000.

Volberg, R. *Has There Been a "Feminization" of Gambling and Problem Gambling in the United States?* eGambling, issue 8, 2003 [Accessed April 2004]. Available from <http://www.camh.net/egambling/issue8/feature/index.html>.

Walker, D., and H. Barnett. "The Social Costs of Gambling: An Economic Perspective." *Journal of Gambling Studies*, 15, no. 3 (1999): 181-212.

Walker, Douglas M. "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 149-84.

———. *A Simple Model to Explain and Illustrate the Definition of "Social Cost"*. International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse, 2000 [Accessed April 2004]. Available from <http://www.ccsa.ca/pdf/ccsa-009988-2000.pdf>.

Wildman, Robert W. II, and Serge Chevalier. *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre, 2002 [Accessed April 2004]. Available from <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.

Wynne, H. J., and M. Anielski. *The Whistler Symposium Report*. Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]. Available from http://www.ccsa.ca/docs/whistler_final.doc.

Wynne, Harold J. *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health, 2002 [Accessed April 2004]. Available from http://www.health.gov.sk.ca/ps_fin_rep_prev_of_prob_gam.html.

Wynne, Harold J., and Howard J. Shaffer. "The Socioeconomic Impact of Gambling: The Whistler Symposium." *Journal of Gambling Studies*, 19, no. 2 (2003): 111-21.