



Swedish National Institute
of **Public Health**

Gambling motivation and involvement

A review of social science research

Per Binde

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Report no 2 in the SWELOGS-programme

SWELOGS, Swedish Longitudinal Gambling Studies, is a longitudinal research programme on gambling and health in Sweden, which is managed and financed by the Swedish Institute of Public Health. The programme will follow changes regarding harm from excessive gambling. The objective is to improve knowledge in order to develop efficient preventive measures against gambling problems in society. An international research group is tied to the project which is conducted in collaboration with Karolinska Institute and Mid Sweden University.

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Foreword

SINCE 2008 THE SWEDISH National Institute of Public Health is commissioned by the government to conduct a longitudinal population study on gambling and gambling problems. The study is called Swedish Longitudinal Gambling Study (SWELOGS) and as a preparation for the empirical work three literature overviews have been written. In 2007 and 2008 the Swedish National Institute of Public Health published literature reviews on biological and psychological research on gambling. This report, reviews the scientific literature in social science research on gambling providing a useful back ground to SWELOGS data collection. The report is written by the social anthropologist PhD Per Binde active at the Centre for public sector research at Gothenburg University.

Previous gambling research has generally been relying on medical concepts and a medical perspective on gambling as a chronic and progressive illness. Through SWELOGS we aim to integrate a public health perspective in gambling research by focusing on the determinants of health. We also aim to develop a measurement instrument which can identify risk groups and not only pathological gamblers.

Today, the marketing of gambling activities is present in several places in society. The supply of fast and continuous gambling increases more and more. The Gambling Helpline, the out-patient care for gambling addicts and self-help groups report that thousands of people seek help for their gambling problems every year. At the same time, gambling research is limited in Sweden. We need to know more about the prevalence and character of gambling problems in different groups of the population. We also need to know more about the causes of gambling problems and how many significant others that are affected. This knowledge is important for public health strategies towards reduction of gambling problems.

This report presents an excellent overview on the contribution of social research to the science of problem gambling. It is my hope that it will be useful for policy makers and health practitioners as well as for scholars in public health.

Sarah Wamala
Director General

Extensive summary

THIS REPORT PRESENTS a review of social science research on gambling. The objective is to sum up what the literature says about the motives people have for gambling and the factors that influence their degree of involvement in gambling. The report is commissioned by the Swedish National Institute of Public Health and is part of the preparations to the data collection phase of the Swedish Longitudinal Gambling Study (SWELOGS). Most of the previous gambling research relies on medical concepts of problem gambling as pathology. This review focuses on the social, economic and cultural aspects of gambling rather than perceiving it as a progressive and irreversible disease in an individual. 434 works are cited in this report. Predominantly biological, psychiatric and psychological research on gambling, including problem gambling prevalence studies, which have been excluded from the review. Directly related to the description of each research approach, conclusions on the usefulness for gambling research can be found.

The section on sociological approaches on gambling research deals with structural functionalism, social frustration and escape theories, gambling as social rewards, subculture studies and geographical analyses. From the perspective of structural functionalism gambling is regarded as a mechanism which can help reduce tension in society. By keeping hopes for betterment alive, gambling can reduce some of the frustration among segments of the population and avoid conflict. It is uncontroversial to claim that people gamble to escape from everyday life. Social frustration and escape theory can however also shed light on what factors that push the gambler away from ordinary life and pull him or her towards gambling. From the perspective of social rewards gambling can be regarded as a social contest, but also as something that relates to togetherness and conviviality.

Subculture studies perceive gambling environments as subcultures with specific and complex cultural codes. It is concluded that very high gambling involvement, resulting in huge monetary losses and personal problems, can be explained by social factors rather than individual pathology. Within geographical analyses the relations between the availability of gambling and socio-economic variables in geographical space are investigated. Research from New Zealand and US has shown that gambling opportunities are more common in deprived areas and that people living in a neighbourhood close to a gambling venue had a significantly higher risk of having gambling problems.

The section on economic approaches on gambling research deals with a wide range of different perspectives, beginning with a mathematical paradox related to coin tossing in 1728, ending with modern economic theories on betting markets with parallels to financial markets. The question of why rational people chose to gamble remained unsolved in economics for more than 200 years. In 1948 Milton Friedman and Leonard Savage came up with a widely accepted solution, relying

on the assumption that the marginal utility of wealth does not diminish uniformly. Gambling can then be explained as rational in a socio-economic setting where the winning of a substantial sum offer the winner a qualitative social advancement, for instance from working class to middle class.

A more contemporary approach is the process utility of gambling where it is recognized that gambling has a utility value in itself. This approach has been used in studies of lottery tickets sales, betting on horse races and baseball games and it also underlies virtually all modern studies of gambling as consumer- and leisure choice. In studies on gambling as consumer choice, an issue often investigated is price elasticity of demand. Some studies suggest that the consumption of lotteries and gambling on slot machines in mature markets follow a consumption pattern similar to that of other consumer products. Unlike consumer studies, there is often a focus on health aspects of behaviour in leisure studies. The motives revealed in these studies are: having fun, meeting other people, seeing new places (casinos), excitement, the chance of winning, the intellectual stimulation of betting games and having a break with the routine of daily life.

The section on cultural approaches on gambling research also deals with a wide range of different perspectives. The anthropological and ethnological literature on play, focus on aspects such as stimulation of the intellectual or physical development, learning of social skills, strengthening of group cohesion, promoting well-being and health through excitement and entertainment. It is concluded that modern forms of game studies are likely to become of increasing relevance to problem gambling studies if hybrid forms of gambling and video/computer games become popular.

In many traditional and non-Western cultures, gambling, religion and magical practices merge. Magical thinking is also commonly regarded to be associated with gambling problems in modern Western societies. Opinion is however, divided regarding a contemporary relation between gambling, religion and existential matters. A recent Swedish study found that by providing a discursive realm for existential and moral issues, narratives of jackpot wins to some extent fill a void left by the decline of traditional religion and folklore. A quantitative cross-cultural analysis of gambling shows that the presence of money and the presence of socioeconomic inequality co-vary with the presence and intensity of gambling. Studies on ethnic minorities often focus on involvement in gambling among problem gamblers while studies on the elderly also explore positive consequences of gambling.

Towards the end of the report some comprehensive models are presented, dividing these into motivational models and involvement models. Some models aim at explaining gambling behaviour from an individual perspective and some from a societal perspective. The research reviewed shows that gambling is a multidimensional phenomenon, which can be studied from many perspectives. A straightforward approach for using the knowledge gained by social, economic and cultural studies in problem gambling research is to view motivational and involvement factors as potential risk factors for problem gambling. The author also notes that a public health approach to conceptualize and study problem gambling has the potential to bridge the gap between the medical and socio-cultural paradigms.

Introduction

Objective

This report reviews the academic literature on social, economic and cultural research on gambling. The objective is to sum up what the literature says about the motives people have for gambling and the factors that influence their degree of involvement in gambling. Suggestions are made as to the usefulness of this knowledge for studies on problem gambling, which often rely on medical concepts of excessive gambling as pathology. This review – citing 434 works – may thus be helpful to scholars, health practitioners and policy makers who deal with problem gambling issues, and of some interest also to those with a more general desire to learn more about why people gamble.

Background

This review of the literature was commissioned and financed by the Swedish National Institute of Public Health (SNIPH). SNIPH is a state authority that works toward implementing the overall aim of Swedish public health policy: to create social conditions that will ensure good health on equal terms, for the entire population. The Problem Gambling Unit at SNIPH develops knowledge-based preventive and interventive measures against problem gambling and its harmful consequences. As a part of that effort, the unit has financed most of the research into problem gambling that has been conducted in Sweden, such as the first national prevalence study conducted in 1998–1999 [1].

In 2007, SNIPH initiated a series of studies, the Swedish Longitudinal Gambling Study (SWELOGS), that take a public health perspective on gaming and problem gambling in Sweden. The overarching purpose is twofold: to measure the extent of problem gambling in the population at large, as well as in specific segments, and to identify determinants that can be used to develop effective methods of prevention. As the name of the study suggests, the design is longitudinal, with a series of measurements of problem gambling conducted at intervals. The first of the national prevalence studies will be complemented by in-depth follow-up personal interviews with those identified as problem gamblers, and a control group. The aim of the follow-up study is to more fully understand the biological, psychological and socio-cultural risk factors for developing gambling problems.

In preparation for this extensive project, SNIPH has carried out or commissioned reviews of the literature on gambling in a number of academic fields. The intent is to get a picture of the current state of knowledge, method and theory. The areas

of review include youth gambling [2], biological factors in problem gambling [3], gambling and criminality [4], and factors to include in a comprehensive bio-psycho-social model [5].

This report presents a review of the literature on gambling in the social, economic and cultural sciences, with a focus on people's motives for participating in gambling and the factors that influence their degree of involvement. SWELOGS aims to be second-generation problem gambling prevalence research. The intent is not only to measure the extent of gambling problems cross-sectionally and longitudinally, but also to identify risk factors for problem gambling. It is assumed that risk factors are not only individual, but to be found also in the social, economic and cultural contexts of gambling.

Procedure

This review is based on the author's personal collection of journal articles, reports and books on gambling and related issues, which has been amassed over a period of about ten years of research into the field of gambling. The collection currently contains over 2500 titles, all of which are recorded in an electronic database (Thomson EndNote), containing not only bibliographic information but also keywords and notes on the content. The collection is fairly complete with regard to internationally available literature on the social and cultural aspects of gambling. The collection is extensive also with respect to economic literature on horse betting, which is a personal interest of the author. Most of the works in the collection are in English, but it also contains items in the other languages that the author is able to read: the Scandinavian languages, Italian and German. During the writing of this review, the collection was complemented with about fifty titles to fill gaps with regard to a few subject areas. These academic works were found in the reference lists of key articles, by searching the internet, and by accessing web-based databases of academic literature.

In order to take a fresh view on the literature and how it can be represented, earlier overviews of gambling studies within the social and cultural domain [6^{Ch. 1}, 7–10] were not consulted until a later stage of the process of writing and content structuring. This occasioned a few minor adjustments of the text. The text has benefited from the comments of members of the SWELOGS research team: Rachel Volberg, Sten Rönnerberg and Marie Risbeck. I am grateful for their input.

Delimitations

Delimitations have been made regarding what research to include in the review. Gambling is a multifaceted activity, the degree of involvement being shaped by biological, psychological and social factors within an economical, societal and cultural framework. Thus, many scholarly works on gambling include discussions on psychological, social and cultural issues, and the distinctions between individual psychology, social psychology and sociology are far from clear-cut.

All predominantly biological, psychiatric and psychological research on gambling, including problem gambling prevalence studies, has been excluded from the review. There are a number of overviews of that literature [11–27].

Economic works on the motivations for gambling have been included but the relatively vast literature, explicitly on gambling or relevant to the decision-making of gamblers, regarding risk perception and cognitive heuristics, has been excluded. Thus, regret theory [28], the risky shift [29], base-rate fallacy [30], subjective probability [31], availability bias [32], counterfactual thinking [33] and prospect theory [34] are among the concepts and theories that will not be discussed. The reason for this is that the psychological component is usually predominant; commonly, these theories are tested in psychological experiments. For the same reason, most of the gambling research based on social learning theory [35] and similar approaches [36, 37] is not included either.

Within the economic, social and cultural sciences, studies in the following research areas were not included, as they say little or nothing about people’s motives for participating in gambling or the factors that influence their degree of involvement.

- The socioeconomic impact of gambling, i.e. measurements of social costs and benefits to society at large [38–42].
- Impact of the siting of gambling venues and casinos on the local economy and the use of urban space, see e.g. the study by Nichols [43].
- Changes in work commitment, attitudes and life satisfaction among jackpot winners: Binde [44] presents a comprehensive list of works.
- Studies and discussions in political and policy sciences, including public affairs and administration, on gambling in society [45, 46].
- Studies on gambling law and regulation (see *Gaming Law Review*).
- Studies and discussions on responsible gambling [47–50].
- Economic studies on revenue maximizing design of lotteries and other games [51–53].
- Gambling taxation issues [54, 55, 56^{Ch. 19 and Sect. M}, 57].

The review covers research and theory of current relevance. Few works older than fifty years are cited. Apart from ethnographic and mathematical studies, there is little empirical research on gambling older than that.

This is not an exhaustive review. Not all works on the various subjects discussed are referenced. A selection is most often made with the effect that key works and representative examples are cited. In some cases, however, the works on a certain issue are so varied with respect to content that all known works are cited.

The intention is not necessarily to provide a “balanced” description – in terms of publication volume and/or impact – of economical, social and cultural research on gambling. Research will be discussed in greater detail if it is especially relevant to the objective of this report, or if doing so is required to make it more comprehensible to readers with little or no prior knowledge.

Key terms and concepts

A number of key terms and concepts used in the review are clarified here:

Problem Gambling Studies Research that from a public health perspective is aimed at increasing knowledge about the prevalence, character and causal factors of excessive gambling among the population at large or specific populations.

Social, economic and cultural research The research on gambling motivation and involvement reviewed in this report, delimited as described above.

Motivation “Motivation” is a widely used concept in studies of human behavior, including gambling behavior, and its more precise meaning therefore varies [58]. In this review, motivation will be used in a general sense as the reason for a person to engage in a particular activity or behave in a specific way.

Involvement The term “involvement” refers to the intensity of engagement in gambling activities. Involvement includes factors such as the frequency of gambling, time and money spent on gambling, the number of gambling forms engaged in, and more generally the level of engagement in gambling activities.

The distinction between motivation and involvement is not clear-cut. For a person to engage in a gambling activity there ought to be some kind of motive. If motivation is strong, involvement will be high. However, in the literature reviewed, there is often an implicit or explicit distinction between *motives* as being factors that account for why persons engage in various forms of gambling at all and the degree of *involvement* as resulting from processes that might be quite complex. This distinction seems to be relevant for the purpose of this review, since people with and without gambling problems may have similar motives for gambling but greatly differing degrees of involvement in gambling. These matters will be further discussed in the concluding section.

Outline

Following this *Introduction*, the review consists of four overview sections: *Sociological Approaches*, *Economic Approaches*, *Cultural Approaches* and *Comprehensive Models of Gambling Behavior*. These sections are further divided into subsections on specific types of research. At the end of each such subsection, there is a brief discussion of the relevance of the research reviewed to problem gambling studies. The focus here is on the motives for participating in gambling and the factors that influence the degree of involvement in gambling, i.e. motives and factors that may be related to the risk that a person develops gambling problems. In the *Concluding Remarks*, the relevance for problem gambling studies of the research reviewed is summed up and discussed. Finally, there is the reference list of the 434 works cited.

Sociological approaches

SOCIOLOGY STUDIES THE organization of society and the behavior of individuals in social interaction. There are two main varieties: macro and micro sociology. The first concerns social structure and the function of society at large; the second concerns the interaction between individuals in ongoing social life. The two types of sociology are not easily integrated. Rather, they emerge as two quite different sciences. The macro approach is akin to political science and economics, and quantitative methods are often used; the micro approach has affinities with ethnology and anthropology, often employing qualitative methods.

Common to the macro and the micro sociological approaches to gambling is that both offer a complement to the medical model of excessive gambling. Reasons why some individuals play way too much are found in the social contexts of gambling rather than in the psyches of individuals.

Structural functionalism

Structural functionalism is a sociological macro theory based on the assumption that society is made up of components that have distinctive functions. When essential components of society conflict, society creates mechanisms to handle the conflict and integrate the overall system. Society is like a big self-regulating machine or organism that, over time, maintains equilibrium.

Two major sociological studies of gambling are based on structural functional theory: Edward Devereux's *Gambling and the Social Structure: A Sociological Study of Lotteries and Horseracing in Contemporary America* [59] and Necama Tec's *Gambling in Sweden* [60].

Devereux's monumental book (1084 pages in two volumes) on gambling in the USA contains a multitude of valuable observations and interesting thoughts, but here we will only be concerned with its structural-functionalistic core argument. Devereux's work rests on a classical sociological foundation, stemming mainly from Émile Durkheim and Max Weber, as their theories were developed in the USA by Talcott Parsons. At the time of Devereux's study, much of the gambling in the USA was illegal and the prevalent attitude toward gambling was quite negative and moralizing. It was common to view gambling as social deviance, an activity that was part and parcel of the life-world of criminal and depraved individuals [60, 61]. This conception is outdated nowadays, and expressed only occasionally in academic contexts [62], since gambling has become a leisure activity practiced by a large part of the population. Such arguments will therefore not be discussed in this knowledge review.

Devereux questioned the view of gambling as deviance and social pathology, arguing that gambling has a positive societal function by being a safety valve for tensions and frustrations felt by individuals. According to Devereux, such feelings are necessarily created by a hierarchal capitalist system where the individual is subordinated to the demands of the industrial mode of production and where not everyone can be successful, despite the moral value that all individuals should try hard to be so. Gambling can help to reduce these tensions and frustrations. By entering the lottery, individuals can dream of winning a fortune and thereby being able to acquire all the attributes of success. People may also bet on horses and thereby experience the satisfaction of controlling and managing resources, a feeling that they are denied in their daily lives as subordinate office or factory employees. Had it not been for gambling, such tensions would be dangerous to society, producing “disruptive speculative urges and ethically deviant economic motivations” [59p. 798]. This argument is typical of radical structural functionalism, in which all social institutions, however futile they may appear, are understood to have positive societal functions.

Tec’s [60] study of gambling in Sweden focuses on a form of legal gambling popular in Sweden in the 1960s: football pools (*Stryktipset*). She observes that 75 percent of Swedish males participate in this game, and thus the conception of gambling as social deviance is in this case clearly inappropriate. Tec analyzes participation in gambling across various social strata and concludes that it reduces social discontent:

By keeping alive hopes for social betterment, gambling alleviates some of the frustration derived from the obstacles which segments of the population encounter in seeking to fulfil their mobility aspirations. (page 113)

This alleviation of frustration has, according to Tec, beneficial effects on Swedish society:

To the extent that socially-induced frustrations can be regarded as potential sources of deviant or revolutionary behaviour in that they might find expressions as outright attacks against the existing social order, relief of these frustrations is beneficial to the continuity of the social order. Thus, instead of turning against the original source of their deprivations and unfulfilled aspirations, bettors are relieved through gambling of some of the frustrations and, hence, are less likely to attack the existing class structure. (pages 113–114)

Thus, without its *Stryktipset* pools, Sweden of the 1960s would have faced the risk of a revolutionary attack on class society, spearheaded by frustrated segments of the working class. As in Devereux’s study, gambling has the function of a societal “safety valve” (page 117).

Devereux and Tec thus perceive gambling to be positive because its safety valve function saves society from the dangerous forces generated by people’s frustration over their social existence. In the public debate, however, gambling is sometimes criticized, by people who lean to the political left, precisely for having such a safety-

valve function [63, 64]. According to this line of reasoning, the maintenance of the social order always serves those in power, i.e. the capitalist class, and gambling thus protects their interests by serving as “opium of the people”, to quote Karl Marx’s characterization of the impact of religion on the working class. However, there are few academic studies on gambling that present such an argument [65].

RELEVANCE TO PROBLEM GAMBLING STUDIES

The structural functionalistic perspective on gambling relies on a somewhat outdated theory of society as equilibrium maintaining, a theory that cannot adequately account for social change and conflict. The assumptions regarding the wider societal functions of gambling appear questionable. The theory does indeed identify plausible motivations – stemming from social frustration – for people to participate in gambling, and the degree of involvement may be explained by the strength of frustration. However, these motivations for gambling can be studied without carrying the heavy and cumbersome theoretical backpack of structural functionalism.

Social frustration and escape theories

Apart from the works of Devereux and Tec, there appears to be no other major study that takes a radical structural functionalistic view on gambling. More common in sociological and cultural studies is the view that gambling does relieve tensions and frustrations felt by individuals because of their position in society, but that such relief is not the principal explanation as to why gambling is practiced in a certain society. People gamble for a variety of reasons, and for some social frustration is a motive [66–71]. Gambling in society may simply be explained as a leisure-time activity that can be turned into profitable business for private companies or a source of revenue for states.

A number of studies maintain more generally that escape from routine life in modern society is a motive for gambling. People seek escape not only from frustrations induced by their position in social structures, but because of anomie and alienation [6pp. 68-75] and from all kinds of things in their life that they experience as boring or troublesome [72–76]. This argument blends into the common view among psychologists, which will not be discussed here, that the problem gambler seeks either relaxation or thrill, and uses gambling as self-medication for abnormal hypo- or hyper-tensive affective states [77, 78].

“Flow theory” occupies a territory in between these sociological and psychological views, as it focuses on the captivating experience of playing, but in relation to the leisure gambler rather than the problem gambler. Flow theory combines a sociological, psychological and cultural perspective and has been formulated over a couple of

decades by the American psychologist Mihaly Csikszentmihalyi [79]. Its application on games of chance is expounded in an article in the journal *American Anthropologist* [80]. “Flow” is defined as a pleasurable state of optimal experience generated by certain activities: the actor is completely emerged in the activity, feels joy and fulfillment, and forgets about temporal and mundane matters. Thus, the problem gambler’s state of dissociation [77] corresponds to the leisure gambler’s experience of flow. Games and sports of many kinds are practiced essentially because they generate flow experiences. For persons to experience flow the activity should be neither too complicated nor too simple; the “flow channel” is quite narrow in that respect. In their ordinary lives, people are most often outside the flow channel. There are either too many options to choose from – that is, things are complicated and cause worry – or there are few options of rewarding things to do, which leads to boredom. Therefore, people create and seek out activities with an optimal balance between possibilities and choices, where they can experience flow.

As to games of chance, Csikszentmihalyi and a colleague write [80]:

... like all effective play forms, games of chance successfully delimit, by means of both physical implements and rules, a slice of reality with which the player can cope in a predictable way, thereby losing himself in a pleasurable state of activity and consciousness, free of either worry or boredom. It is inherent in the basic structure of the games of chance that they drastically delimit possibilities. ... By being able to foresee the possibilities of the game, the player achieves a measure of control over the environment, a balanced state between chaotic worry and stultifying boredom – a tenuous area within which he experiences play. (p. 49)

In its sociological aspect, flow theory views play as a realm of action separated from everyday social reality. The player’s social identity becomes irrelevant, which may be a relief if that identity is not felt to be rewarding. However, having stated this, flow theory does not elaborate much upon the eventual social rewards of playing, but focuses on the individual’s involvement in the game and the resulting experience of flow. Naturally, flow theory is limited to forms of gambling that are fairly continuous and thereby have a potential to generate flow experience.

All variants of theories involving frustration and escape as motives for gambling assume that there are two separate spheres of activities: the everyday world and the world of gambling. The frustrations felt in the ordinary life-world *push* the gambler towards the world of gambling: the gambler is escaping. The theories also state that the gambling world exercises a *pull* on gamblers, by offering rewarding and exciting experiences. These experiences are viewed as especially suited to relieve the frustrations. Below we will discuss approaches (sociological micro studies and cultural studies) that more broadly explore the “pull” features of gambling and do not necessarily relate these to frustrations and other negative emotions.

RELEVANCE TO PROBLEM GAMBLING STUDIES

The observation that, to some extent, people gamble to escape from everyday life, which may include frustrations of varying kinds, is uncontroversial. This can be expected as gambling is for the most part a leisure activity in which people engage voluntarily. It is generally accepted in psychology that some forms of problem gambling have to do with an intensely felt need for escape. Qualitative and other studies that tell about the particulars of escape and the corresponding emotional and sensory rewards of gambling are of value for problem gambling studies. Motives for engaging in specific forms of gambling can be revealed and the strength of the forces that push the gambler away from ordinary life and pull him or her towards gambling ought to have an influence on the degree of involvement in gambling.

The social rewards of gambling

Numerous writers have discussed the social rewards that individuals receive from gambling. Many of these works could be characterized as symbolic interactionism, which is a major vein of microsociology that stems from the thoughts of the American philosopher George Herbert Mead, on the social origin of mind and self, as interpreted by the sociologist Herbert Blumer [81]. Being a reaction against behaviorism, symbolic interactionism stresses that human actions are based on the interpretation of events, not simply responses to stimuli. Interpretation give meaning to events and the meanings are constantly modified in social interaction. Symbolic interactionism is thus a study of culture and social meaning at the micro level. As such, it blends into studies of cultural meanings and patterns at larger scales, i.e. ethnology, anthropology, and cultural studies.

Perhaps the most widely known theory on the social rewards of gambling was formulated by the American sociologist Erving Goffman, who worked for a time as a croupier and dealer in Nevada casinos. Although Goffman himself did not describe his thinking as symbolic interactionism, it is usually labeled as that. Goffman focuses on small-scale social interaction between gamblers and the social rewards that individuals gain from gambling.

Goffman conceptualized social life in general as a game [82–84]. His views on gambling are most explicit in the essay *Where the Action Is* [85], in which he defines action as activities that are “consequential, problematic and undertaken for what is felt to be their own sake” (p. 136). Examples of such activities are competitive sports, participating in political debates, and nightclubbing, gambling being the “prototype of action” (p. 138). Action is always public and “fateful” – it is not known beforehand how things will turn out. Action thus puts an individual under pressure and reveals his or her *character*. A strong character has a number of posi-

tive properties, such as courage, gameness, integrity, gallantry, composure, presence of mind, dignity, and stage confidence. Strong character is by definition what all people desire, although what exactly is meant by strong character varies between social contexts and social groups.

Character is a paradoxical phenomenon [85^p-180]. On the one hand, it is quite a stable trait of a person: it is a person's characteristic. On the other hand, character may easily change. Character can be created or destroyed rapidly by the behavior of a person in crucial social situations. Thus, by seeking action persons can endeavor to create or recreate the image of their character as strong in some sense, though they may also fail and sully the impression that they make in social life: "character is gambled" (p. 179). Goffman sees people's participation in action as a "character contest", which is a "special kind of moral game" (p. 181). Thus: "excitement and character display, the byproducts of practical gambles, of serious fateful scenes, becomes in the case of action the tacit purpose of the whole show" (p. 181).

In short, Goffman views gambling to be motivated by the desire of individuals to make a favorable impression on others – by showing skill in playing as well as composure when winning and losing – and thereby enhance personal prestige. This view is present in numerous other sociological and cultural analyses of gambling [71, 86–91]. According to this view, people ought to be less motivated to gamble if they have to do it alone; they prefer to have spectators, co-players and/or opponents. The "character contest" in gambling cannot take place unless participants interpret the actions of play as having meanings relating to character and social prestige. These meanings are at the same time created and reaffirmed by the social interaction of gambling; the actions can neither carry these meanings intrinsically, nor can the meanings be fully formed anywhere but in the context of gambling. Almost all of these studies concern male-dominated gambling environments. Issues of prestige and ostentatious demonstration of character seem not to be of much importance in gambling settings dominated by females, such as bingo parlors and low stakes slot machine areas in casinos.

Although Goffman did not explicitly develop the theme, the character contest in gambling can be escalated. Several ethnographic and historical studies show that gambling between individuals may take on the character of a duel, and gambling between groups of people in pre-modern societies may have substituted for feud [92]. Such extreme gambling encounters typically end only when one of the parties has lost all of their money and/or possessions.

Goffman focused on gambling as a social contest, which implies a measure of confrontation, antagonism, and even open aggression. Many studies of gambling, however, emphasize the social rewards of gambling that have to do with togetherness and conviviality. Thus, people gamble in part because it is a way to get together with others [71, 93–100]. Through the social interaction that takes place during gambling, common values are created and reaffirmed; gambling is given meanings that allow it to function as a social and group-building activity.

The social rewards of gambling may thus be of two types, one building on ostentation and contest and the other on communion. Some types of games by their structure amplify the contest between players, such as poker. Other game types promote communion, such as bingo and on-track horse betting.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Social rewards are a prominent motive for participating in gambling. Some people would not be involved in gambling were it not for the social rewards and the resulting reinforcement of gambling behavior. Factors pertaining to the social dimension to some extent explain varying levels of gambling involvement, both between socio-cultural groups and between individuals. Qualitative studies that reveal such factors are highly relevant to problem gambling studies.

Subculture studies

The power of gambling to create social belonging and give social rewards is at the core of studies that conceive of gambling environments as subcultures or bounded cultural realms. Regular gamblers not only get together with other people and thus satisfy their need for social contacts, but they also participate in an activity subject to specific and complex cultural codes. When entering the gambling space, such as a casino or a racetrack, individuals leave the ordinary world and their everyday identities and come together with others in a different “world” where they can assume another identity [93, 101–104]. In his book *The Racing Game*, Marvin B. Scott sums up his observations on the subcultural world of racetrack bettors [105]:

... the race track constitutes a little cosmos on its own. ... Social class and other background characteristics of the players are excluded as relevant in this area. ... Not only are external identities excluded, but by permitting the player to exercise new skills and rationalities, horse racing generates *new* identities. At the track, Sammy the painter becomes Sammy the handicapper. ... Because the individual at the track is engrossed in an action in the presence of others similarly engrossed, the *reality* of his “field of consciousness” is confirmed and thrust upon him with clearness and distinctness. In other words, the reality experienced is an all-embracing reality. (p. 113–4, italics in original)

To some individuals, the gambling world – with its “action” (in the sense of Goffman’s definition), norms, and social interaction – may appear preferable to the ordinary world, motivating them to spend a lot of time there and consequently also a lot of money. From a medical perspective on gambling involvement, such persons are likely to be considered as “pathological gamblers”, but from a sociological perspective they are merely regulars at the gaming venue. John D. Rosecrance described and analyzed such highly involved bettors in his book *The Degenerates of Lake Tahoe*:

A Study of Persistence in the Social World of Horse Race Gambling [106]. The title of the book refers to the bettors calling themselves “degenerates”: even on Christmas Eve they gathered at the Harrah’s Race Book in South Lake Tahoe, Nevada, to bet on horses. Rosecrance argues that a social identity of belonging to the group of bettors is one of the main reasons why these gamblers persist in gambling, despite losing a lot of money in the long run [104, 106].

While the social rewards of gambling thus exercise a pull on certain individuals, the motivation to become deeply involved in a gambling subculture can be strengthened by the gambler’s experience of ordinary life in mainstream society as unrewarding or outright frustrating. This process is the focus of Grant Ocean’s study of regular gamblers in an American casino [107, 108]. The casino constitutes a subculture with distinctive values, beliefs and informal norms [108]. It is a “just world”, where social distinctions, ethnic belonging and physical handicaps are irrelevant. Key values among regular gamblers are “beating the system” and “cooperation”. Gamblers perceive themselves as an egalitarian group with a common interest against the casino. Over time, individuals develop a distinct identity in the social world of the casino, which boosts self-esteem and constitutes a positive reinforcement for frequent gambling. For the regular gamblers, the casino subculture is highly rewarding and they spend a lot of time and money in order to be part of it. At the same time, many of the regulars feel discontent with the outside, ordinary world, where they hold subordinate social positions, have low status, and have few friends and feel little social belonging. Furthermore, as they become deeply engaged in casino gambling, they also receive the stigma of being heavy gamblers. In mainstream American society, being a heavy gambler suggests having some type of mental or personal problem. This makes it even harder for individuals to disengage from the subculture of casino gambling and reintegrate in mainstream society.

Thus, for socially marginalized persons, casino gambling can become a refuge where they find a more rewarding life than in society at large. Ocean sums up the social forces that create the push away from mainstream society and the pull towards the subculture of regular casino gambling: “given the choice, humans tend to gravitate to social situations which place them in a higher status” [107^{p. 328}]. If the person gives up the attachment to mainstream society entirely and adopts an identity as a gambler, the gambling lifestyle might lead to a need to procure money through hustling and criminal activities [109].

In the subcultures of gambling, individuals may make a living from playing the games (hustling or not) or believe that in the future they will be able to do so. Gambling then tends to be viewed not as leisure, but rather as work [93, 102, 103, 105, 110–113]. In recent times, the idea of becoming a poker professional appears to have become much more common than before among young people (mostly men) in Sweden and elsewhere. This is occasioned by the current popularity of poker – in casinos, at tournaments and on the internet – and mass media exposure of individuals who have made a fortune playing poker. Being a poker pro promises a good income as well as exciting experiences [114]. The intense gambling by individuals

believing themselves to be, or aspiring to become, professional gamblers poses some interesting questions of definition. Are such individuals addicted to gambling or just hard-working? Can their eventual monetary losses be viewed as investments to further their experience and skill?

The issue of monetary losses is invariably discussed in the studies on gambling subcultures. Since the perspective is sociological, large losses are not seen as the consequence of pathological gambling behavior. Typically, losses are seen as the consequence of inadequate money management and defective strategies of play [102, 115–117]. Rather than being subject to psychological treatment, the gambler who loses much money should thus be educated in optimal playing and betting strategies [108]. Several money management defects have been identified. “Going on tilt” means that, because of some frustrating turn of events, the gambler loses control and departs from sensible playing strategies [118]. “Bad beat” is a similar concept, referring to the gambler suffering a series of unexplainable losses, which questions his or her ability to play skillfully and triggers reckless and uncontrolled gambling [117, 119].

RELEVANCE TO PROBLEM GAMBLING STUDIES

The subculture studies highlight the importance of the social dimension of gambling for explaining varying levels of involvement. Very high involvement, resulting in huge monetary losses and a host of personal problems, can be convincingly explained by social factors, rather than individual pathology. If the personality traits of heavy gamblers are to be revealed in problem gambling studies, it is thus important to distinguish the subculture gambler from the true pathological gambler whose problems are essentially psychological. Bounded gambling settings with specific subcultures also appeal to casual gamblers, who may experience them as interesting and exciting. Spending time in such a setting, being a kind of tourist there, may be a motive for participating in a specific form of gambling.

Geographical analyses

Sociological studies of gambling are often concerned with the social and demographic characteristics of gamblers. If such characteristics are mapped in geographical space, patterns of varying involvement in gambling, and perhaps also varying modes of participation, emerge. One issue that can be investigated is how the availability of gambling relates to such patterns.

There are at least three reasons why relations between the availability of gambling and socio-economic variables in geographical space are to be expected. Firstly, gambling is a multifaceted activity and the consumers of various forms of gambling have specific demographic and socioeconomic profiles. For instance, bingo play-

ers traditionally tend to be older women from the working class, while today's poker players tend to be young, well-educated men. Those who frequently visit betting shops and those who play slot machines also have characteristic profiles. Since the population of a country is not randomly distributed over its territory, but tend to gather according to socioeconomic and demographic characteristics, it can be expected that gambling entrepreneurs, for reasons of profitability, locate gambling premises in areas where there is a large potential customer base and avoid areas where there are fewer potential customers.

Secondly, prevalence studies of problem gambling conducted in Western countries consistently show that problem gamblers have certain characteristics compared to others. For instance, they tend to be younger, more often male than female, have lower than average education, are unmarried, and to a greater extent belong to ethnic minorities. Since gambling obviously does not lead to a person acquiring these characteristics (excepting perhaps being unmarried as a result of gambling-related divorce), it must be that persons with such characteristics constitute a group for whom the risk of becoming a problem gambler is higher than average. A person with serious gambling problems spends a large proportion of his or her available income on gambling; he or she may even spend more than the available income, acquiring money through loans and criminal activities. This means that a disproportionately large part of the revenue of gambling operators comes from problem gamblers. Consequently, for reasons of profitability, gambling venues are likely to be more common in areas with a significantly higher than average number of problem gamblers.

Thirdly, for whatever reasons, gambling providers may choose or be restricted to concentrating their marketing efforts and venues to specific geographical areas. As gambling opportunities increase and commercial attempts to stimulate gambling are put into action, increased gambling is to expect. It is likely that increased problem gambling also follows, at least in an early phase and if the games have a relatively high risk for generating such problems.

A number of studies have mapped gambling opportunities and compared them to socioeconomic variables and patterns of gambling. A New Zealand study found that gambling opportunities were more common in deprived areas [120, 121]. However, an Australian study found only a limited, weak and indirect relationship between high expenditures on slot machines and areas of social deprivation [122]. The latter study concludes that the density of slot machines is a too simplistic a measure of gambling availability, and states that "a decrease in the intensity of EGM expenditure cannot lead to an assumption that vulnerable sectors of society are more protected from gambling-related harm" (p. 25). The authors of the report suggest that future studies should take into account issues such as venue management, marketing practices, and the degree of implementation of responsible gambling practices.

A recent study from New Zealand [123] showed that people living in a neighborhood close to a gambling venue had a significantly higher risk of having gambling problems, compared to people in neighborhoods relatively far away from gam-

bling venues. Australian data suggests that gambling spending and participation frequency increases as the number of slot machines in an area increases [124].

In the USA, it has been found that the prevalence of pathological gambling was two times higher among respondents living within 50 miles of a major gambling venue [125^{Ch. 5}]. A similar finding is that living close to casinos predicts gambling problems in adult males [126]. Using census data, another American study showed a positive relation between neighborhood disadvantage and frequency of gambling and problem/pathological gambling [127]. This relation was interpreted to mean that “the ecology of disadvantaged neighborhoods promotes gambling pathology, and that availability of gambling opportunities promotes gambling participation and pathology” (p. 405). It was pointed out, however, that “individual traits have a stronger relationship to gambling pathology than geographic factors” (p. 422).

In California, no relation was found between distance to gambling venues and rates of problem gambling, probably because of the high density and relatively even distribution in geographical space of such venues [128]. A study conducted in Louisiana showed a slight but significant correlation at parish level between the per-capita spending on video-poker machines and the number of Gambler Anonymous meetings [129]. However, no correlation was found between the number of such meetings and the number of machines or the number of machine establishments per capita. A Canadian study found that the prevalence of problem gambling was associated with numerous demographic factors, such as substance abuse and physical health status. Proximity to gambling venues, however, showed only a weak association [130].

While the studies mentioned thus far have concerned relatively small geographical units, there are investigations on a larger scale. One such study [131], which compared US states, observed that the rate of problem gambling was significantly higher in states where legal gambling had been available for more than 20 years, compared to states where it had been available for less than 10 years. It was concluded that this supports the contention that increased availability of gambling results in an increase of gambling-related problems.

A second large-scale study [132] concerned both US states and counties and used a Regional Exposure Model (REM), in which gambling is viewed as a public health toxin [133] that causes harm to some people if exposure is high enough. The REM model includes variables of dose, potency and duration of exposure to gambling, which are used to compute a Regional Index of Gambling Exposure (RIGE). Comparing RIGE values to problem gambling prevalence data at the county level, a certain measure of positive correlation was found. The authors intend to complement the REM model with a Personal Exposure Model (PEM), including exposure to gambling on the individual level, e.g. parental gambling, household gambling, and being employed in the gaming industry.

In sum, geographical mapping and analysis promises to add valuable knowledge about the connection between social factors, the availability of gambling and the prevalence of problem gambling. However, the link between availability and prob-

lem gambling is not uncomplicated, which is shown by the seemingly contradictory results of some studies mentioned. For instance, as the REM model suggests [132], when viewing gambling as a public health toxin, not only is dose (number and size of gambling establishments) important, but also potency (types of gambling) and duration (time since established). Furthermore, a positive correlation between gambling opportunities and a high frequency of problem gamblers in an area says nothing about cause and effect. Opportunity may cause gambling problems, but it may also be, as suggested above, that populations with certain demographic profiles, which tend to cluster in socio-geographical space, have relatively high rates of problem gambling. Gambling opportunities tend to be more plentiful in the areas with such populations, since gaming operators realize that the demand for gambling is higher there than elsewhere.

Longitudinal studies are needed to clarify issues about cause and effect. Such studies may also provide insight into the effects that exposure and adaptation to gambling opportunities have on the population in a certain geographical area [132]. Increased exposure is likely to initially increase the incidence of problem gambling, but over time adaptation processes may reduce the incidence and prevalence to previous levels. For instance, if a new form of game with a high risk of problem gambling is introduced, some people who were not problem gamblers earlier are likely to become so. After a time, however, at least some of these people will realize the dangers of the game and develop methods to cope with them. Furthermore, responsible gaming measures implemented by gaming providers and preventive and treatment efforts by public agencies may also reduce the problems connected with the game in question. According to Shaffer and colleagues [132] it is likely that “exposure and social adaptation models represent twin pillars in explaining dynamic epidemiological gambling-related trends” (p. 46).

Prevalence studies conducted in communities where gambling opportunities have increased significantly, e.g. through the establishment of a large casino, may use a longitudinal “before and after” design [134]. Such studies may thereby reveal relationships of cause and effect with respect to gambling availability and problem gambling: the sudden increase in availability constitutes a natural experiment on the determinants of problem gambling. The weakness of such studies, however, is that they are limited to one or a few cases, the generalizability of which is unclear. Geographical studies based on a multitude of locations promise results with greater applicability.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Studies of the social geography of gambling are an integral part of the public health perspective. Although such studies say little about the motives for gambling, they promise to add valuable knowledge about the connection between the availability of gambling, social factors, levels of gambling involvement, and the prevalence of problem gambling. Rather than focusing on the psychological constitution and possible pathological traits of individuals – factors that are difficult to influence on a collective scale in prevention – the focus is on the social and demographic risks and protective factors, as these are distributed in socio-geographical space.

Economic approaches

BY DEFINITION, GAMBLING is about money or other things of value. If money is not involved, activities like card and dice games are regarded as play or pastimes. Economics is, according to Lionel Robbins' [135] often-quoted definition, "the science which studies human behavior as a relationship between ends and scarce means which have alternative uses" (p. 16). A basic assumption in mainstream economics is that the choices of individuals, about how to allocate finite assets, are rational and made out of self-interest.

The early economists

To early scholars in economics, gambling was an enigmatic behavior. To highlight some of the problems of analyzing gambling, in 1728 the mathematician Nicholas Bernoulli formulated the St. Petersburg Paradox [136, 137]. Suppose that a person is offered the opportunity to bet money on a coin tossing game, where the objective is to toss a coin repeatedly until heads comes up. If heads comes up the first time, the person receives one dollar (or some other unit of currency), if it comes up the second time the reward is two dollars, if it comes up the third time the reward is four dollars, and so on: the amount won is doubled for each additional toss until heads comes up. Mathematically, this may appear as a very attractive game. Since the number of tosses until heads comes up in theory can be infinite, the average sum to win on the game is also infinitely great (an average is infinitely great if it includes an infinitely great single value). A rational person can thus, in theory, be expected to pay very huge sums for having the opportunity to enter the game. In reality, however, people do not pay much for betting on the St. Petersburg game, which constitutes the paradox. Few people are willing to bet more than 20 dollars [137]; a computer simulation of one million St. Petersburg games showed the average monetary value of the bet to be only 9.82 dollars [138].

A solution to the St. Petersburg Paradox was presented independently by two scholars: Gabriel Cramer in 1728 and Daniel Bernoulli (a cousin of Nicholas Bernoulli) in 1738 [139]. They proposed that the expected utility of wealth diminishes according to a logarithmic function. If such a function is applied to the St. Petersburg Paradox, it appears to be solved: the infinite amounts of wealth that can be won have a limited expected utility. The assumption upon which their solution rests became one of the supporting pillars of classical economics: expected utility theory. According to that theory, people do not strive to maximize expected *value* but expected *utility*, and the expected utility of money and other assets diminish as the amount already owned increases. That is, 500 dollars has a greater expected

utility for a person who owns only 1000 dollars than it has for a person who owns 1,000,000 dollars. For the former person, 500 dollars is a substantial increase in wealth, for the latter it is a drop in the ocean.

This is illustrated by the solid line in Figure 1: the Bernoulli logarithmic function (also called the *von Neuman-Morgenstern utility function*). Although w_1 and w_2 are additions of equal sums of monetary (or other) value to an individual's wealth, w_2 causes a lesser increase (b) in utility than w_1 (a). As noted by Bernoulli, this has further implications for gambling than the rather contrived bet of the St. Petersburg Paradox. Let us assume that a person, who has a wealth of 10,000 dollars, is offered the opportunity to bet 1000 dollars on a gamble in which he has an equal chance of losing or doubling his stake. According to Bernoulli's theory, the 1000 dollars he might win has less expected utility value than the 1000 dollars he might lose. Therefore, "everyone who bets any part of his fortune, however small, on a mathematically fair game of chance acts irrationally" [139^{p.29}]. Of course, if the odds are against the gambler, it is even more irrational to stake money. Thus, while Gabriel Cramer and Daniel Bernoulli apparently solved the St. Petersburg Paradox, there remained enigmas in gambling behavior for economists who adhered to the notion of "economic man" as rational and utility-maximizing.

RELEVANCE TO PROBLEM GAMBLING STUDIES

The theories of the early economists on gambling have little relevance to gambling studies of today. The theories have been described here to provide a background for later developments in economic theory.

Classical expected utility theory

The question of why rational people chose to gamble remained unsolved in economics for more than 200 years. Various solutions were attempted, but proved to be inadequate. It was particularly difficult to account for the fact that often people both gamble *and* buy insurance, the first being a risk-seeking activity and the second suggesting an aversion to risk. It was not until 1948 that a widely accepted solution was presented by Milton Friedman and Leonard Savage [140]: the marginal utility of wealth does not diminish uniformly, see the dashed line in Figure 1 ("Friedman-Savage function").

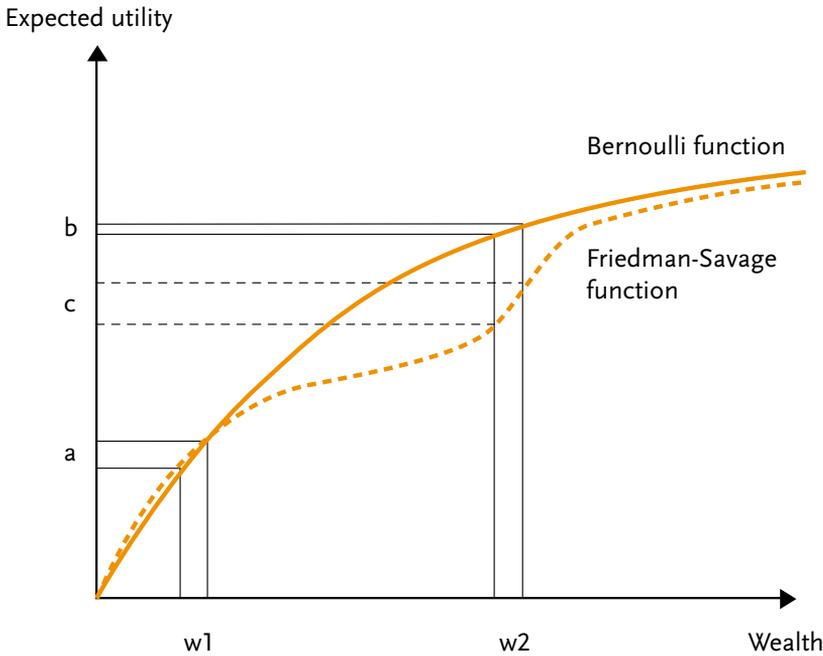


Figure 1. Expected utility of wealth functions.

The Friedman-Savage expected utility function curve is winding, formed by the considerations of individuals regarding economic risk and gain that are determined by their levels of wealth. As that level rises, marginal utility first decreases, then increases, and finally decreases again. Thus, an increase in wealth of a certain amount far away from the zero point (w_2) of the wealth axis may imply higher expected utility than an equivalent increase (w_1) closer to the zero point: $c \geq a$. The convex middle segment of the curve represents the choices, of how to allocate scarce resources, of the upper stratum of individuals belonging to a social group, for whom an increase in wealth will move them up to a higher social group. Such social aspirations make the marginal utility of wealth increase rather than decrease. That is, if an increase in wealth of, for instance, 50,000 dollars will allow a working class man or woman to fulfill social aspirations of becoming middle class, he or she is inclined to take the risk to invest in ventures that may pay 50,000 dollars but that have an expected average return of less than 100 percent. Money lost on lottery tickets and other forms of gambling does not qualitatively lower a person's social status – if he or she belongs to the upper stratum of a social group and the amounts lost are not extreme – while the chance of winning substantial sums offers an opportunity for a qualitative social advancement. Hence, gambling is rational in such socio-economic circumstances.

This is how the Friedman-Savage hypothesis was originally formulated, and a number of studies of gambling claim to have found empirical support for it [6pp. 91-95,

105, 60, 141–145]. The Friedman and Savage hypothesis has undergone theoretical modification with various tweaks and wiggles in the utility function and the introduction of other factors in making choices under uncertainty that influence the shape of the function [136, 137, 146]. The hypothesis has also been applied more broadly to gambling, with a focus on lifestyle improvement rather than qualitative change in socio-economic status. Gambling is rational if it offers the possibility of such improvement from any level in the income distribution, especially if people perceive that there are few realistic possibilities to achieve it, i.e. through working hard or finding a better paid job. This “weak” version of the hypothesis is said to have been embraced by Friedman himself in the 1970s (F. Pryor, personal communication).

Alternatives to the Friedman-Savage theory have been proposed, which retain the basic assumptions of rational actors and that the individual’s motivation for gambling is solely monetary gain, but assume utility functions that are quite different. The most influential of these approaches is prospect theory [34], which maintains that the utility function is shaped not primarily in relation to *absolute* wealth levels but by *relative* changes in wealth [147]. Prospect theory holds that, in risk taking decisions, individuals first order possible outcomes according to various heuristics and then, in a second phase, evaluate outcome probability in terms of relative gains and losses (rather than absolute wealth). On the basis of this calculation, they make a rational choice by choosing the option with the highest utility. Prospect theory predicts that individuals are willing to partake in gambling for small probabilities, such as lotteries with a small chance of a huge jackpot win. Similarly to other economic approaches that assume rational behavior and that the gambler’s motivation only concerns the chance to win money, however, prospect theory generally fails to account for people participating in a variety of games with different payout schemes, probabilities of winning, and sizes of top prizes [146]. In order to account for this, a process utility of gambling must be introduced (see below).

RELEVANCE TO PROBLEM GAMBLING STUDIES

The Friedman-Savage theory of expected utility, as well as prospect theory, accounts for the motivation some people have for participating in lotteries and other forms of gambling with low stakes and the chance of winning huge sums of money. The motive is the hope of gaining money that will enable social advancement or lifestyle improvement in general. Apparently, the theories can to some extent predict different levels of involvement in this type of gambling across socio-economic groups. As to other forms of gambling, the theory is of little relevance. On gaming markets with a diversity of products – including slot machines, sports- and horse betting and casinos – lotteries are seldom closely associated with excessive gambling and then classical expected utility theory does not contribute much to problem gambling studies.

Gambling as a form of saving

One of the elaborations of standard utility theory was the introduction of the concept of *indivisibility of expenditure* [148]. Standard economic theory assumes that marginal utility continually diminishes and in some segments possibly increases, i.e. the utility curve is smooth and not jagged. This assumption rests on the premise that the purchases that the consumer can make are infinitely divisible. This is clearly not the case, since you cannot buy, for instance, a tenth of a TV set or a vacation trip. There are indeed economic arrangements such as credit, hire-purchase, and purchase by installments that allow individuals to pay a tenth, receive the goods, and pay the rest later. However, not all consumers are granted such services and not all goods are sold on under such conditions. Hence, the consumer is sometimes in need of a sum of extra money that would allow him or her to buy a big-ticket item (relative to his or her budget), and that extra money therefore has a comparatively high utility. Gambling by entering lotteries offers people a chance to get that extra money and thus emerges, under certain circumstances, as rational and utility maximizing economic behavior [148].

In this perspective, gambling has an economic function quite similar to saving, where many small “deposits” will allow a single huge “withdrawal” of money. A study of gambling among urban poor Americans in the 1970s showed that buying lottery tickets indeed may constitute a form of saving [149], albeit with a high negative interest rate (equivalent to the gross profit percentage of the lottery operator). Small available sums of money were regularly invested in lottery tickets. Saving of such small sums of money in a bank was not a realistic option, and saving them in the home was difficult since there was a constant need for money to be used for cheap, everyday commodities. Once in a while, a price was won on the lottery, for instance, an amount 100 times the cost of the ticket. This allowed the lottery player to buy quite costly things that could otherwise not be afforded. Similar observations of lottery gambling being a form of saving among disadvantaged people have been made, e.g. in Great Britain [64] and in Italy [150^{pp. 112-120}].

Gambling as a form of saving is similar to lottery-linked deposit accounts [151], which do not pay interest in the conventional way but distribute money to savers through lottery draws using the account numbers. Such gambling also resembles rotating savings and credit associations, prevalent in third-world countries. In these associations, the members regularly contribute small sums to a collective fund. There are many different ways to distribute the accumulated sums of savings among the members, one being through lottery [152]. Some archaic forms of savings associations have been documented, such as the *kyei*, the money-lending clubs of pre-revolutionary China. In these clubs, the money accumulated through membership fees was distributed each month to a few members selected in a draw conducted with tiny wooden balls marked with the names and numbers of the members [153^{p. 147}].

RELEVANCE TO PROBLEM GAMBLING STUDIES

The observation that some modes of gambling have an economic function similar to saving prompts us to reflect on possible positive aspects of gambling and to keep these in mind when judging gambling's role in society. It is largely unknown to what extent people in contemporary Western societies gamble because it is an alternative to saving, making it possible for them to buy, once in a while, relatively expensive goods, that their household budget does not allow for. Qualitative studies could indicate if there is such an economic function of some modes of gambling. Survey studies, including relevant questions on income and spending patterns, could show whether this possible function has any notable influence on gambling involvement and problem gambling.

The process utility of gambling

Currently, the “strong” and original version of the Friedman-Savage hypothesis or the various theoretical developments of expected utility theory are seldom applied to gambling, a rare example being a paper by Nyman [154]. The reason for this ought to be that gambling as an economic activity cannot be explained to any greater extent solely by the socio-economic motivation originally assumed by Friedman and Savage. The “weak” and broader version of the hypothesis still has an intuitive appeal, since it explains gambling as motivated by a wish for lifestyle improvement in general. However, even this is seen by many economists as too limited an explanation for people's propensity to gamble.

Today, most economists with an interest in gambling acknowledge what their earlier colleagues – for reasons of theoretical purity and orthodoxy – refrained from including in their theories: that gambling has a utility value in itself [155–158]. People gamble not only because they hope they can make money from it, but also – and perhaps primarily – because the activity of gambling in itself is fun, exciting, stimulating and interesting, and brings with it many other things that people appreciate. In order to enjoy these things, people are prepared to pay, and they do so accepting that in the long run participation in commercial gambling will almost certainly lead to economic losses. The orthodox economic theory of gambling focused on the expected *consequences*, in monetary terms, of participating in gambling; modern economists prefer to focus on the *process utility* of gambling [156].

A theoretical economic model has shown that even a tiny utility of gambling, appended to an expected utility model, adequately explains why people engage in various forms of gambling [146]. Furthermore, acknowledging the process utility of gambling makes it easier to understand the economic aspect of gambling behavior, such as the determinants of lottery ticket sales [53] and patterns of betting on horse races [159] or baseball games [160]. The assumption of process utility underlies

virtually all modern studies of gambling as consumer- and leisure choice. An inherent problem in studying process utility, however, is that the rewards of gambling are multiple and vary between different games, which makes it difficult to define a specific process utility variable [154].

RELEVANCE TO PROBLEM GAMBLING STUDIES

To non-economists, it is self-evident that people gamble for a variety of reasons, not only with the intention to gain money. Acknowledging the process utility of gambling allows for economic studies that are less metaphysical in character than those relying on classic expected utility theory and explain more of actual gambling behavior. Process utility is derived from features of gambling that people enjoy and are prepared to pay for. Such features are thus motives for participating in gambling. As long as economic research identifies such motives, it is of potential value for problem gambling studies. If the price paid for certain features of gambling is calculated, it indicates directly the strength of motivation and indirectly the involvement in gambling. Some promising research of this type will be discussed in the section on economic studies of betting behavior (see Betting Markets below).

Gambling as consumer choice

Consumer theory is a branch of modern economics. It concerns the preferences and choices of individuals as they spend finite assets under budget constraints. Among the variables, considered in consumer studies, are the price of products, the demand, promotional activities, consumer wealth and income, and preference for labor versus leisure. The basic axiom is derived from ordinal utility theory: individual consumers rank goods and services by order of preference. Hence, given budget constraints, individuals cannot buy everything that they want, but must make choices.

Much of consumer theory has been occupied with identifying factors that shape the preferences of consumers, making use of a number of different concepts and approaches derived from more general economic, psychological, sociological and cultural theories [161]. Consumer theory blends with leisure studies, which will be discussed below. Most of what has been written about the consumption of gambling products concerns lotteries and horse betting, and an issue often investigated is price elasticity of demand.

Suppose that heroin was legalized and sold freely along with other consumer goods at a price allowing daily purchases, for instance one dose of heroin for about the same price as a kilogram of cheese. The purchase pattern of heroin would likely differ from that of other consumer goods. Most people would never buy or use heroin. Some would and since they run a high risk of becoming addicted, most of them would likely become daily buyers. Once introduced on the market, changes in

price of heroin would probably mean little for consumption patterns. Those who had not bought heroin earlier would not likely start buying if the price was reduced by, for instance, 20 percent. Also, those already addicted to heroin would be largely insensitive to price changes. Even if the price was raised 200 percent, they would buy about the same amount of heroin; they would not buy less heroin and spend their money on beer, cigarettes or something else instead. In short, the consumption of a highly addictive substance like heroin would not show the price elasticity of demand typical of consumer goods in general, i.e. where, if the price goes up, consumption goes down, and vice versa.

Consumption patterns thus tell us something about the addictiveness of goods. Since gambling is considered to make some people addicted, it is therefore of interest to see what economists have found regarding the consumption patterns of gambling products. Such economic investigations are relatively few in number and most concern lotteries, a form of gambling that is generally regarded to have a low potential for creating problem gambling or attracting those who already are addicted.

The principal issue under investigation in these studies is the price elasticity of demand. If price elasticity exists, lowering of the price of a gambling product will lead to increased consumption, while an increase in price will cause consumption to fall. The more elastic the demand is, the greater the increase in consumption if the price is lowered, and vice versa if the price is raised. If a lottery product is made more attractive by some modification, such as a larger jackpot or an instant-win auxiliary draw, this is equivalent to a price cut since the consumer gets more gambling for the same purchase price; hence, consumption should rise. Income elasticity may also be discussed, i.e. the impact on consumption of gambling products caused by increases or decreases to average wages. Cross-price elasticities are measures of the demand for products in relations of substitution and complementarity. In a relation of substitution, a rise in price for one product, which causes a decrease in consumption, leads to an increase in the consumption of substitute products; in a relation of complementarity, a rise in the price of one product, and thereby a decrease in consumption, leads to a decrease in the consumption of complementary products as well. Lowered prices cause the inverse effects. Since gambling markets are often strictly regulated – through state monopolies and fixed payout rates – cross-price elasticities may be small and difficult to measure [162].

Most studies find significant price elasticity in lotteries and some other forms of gambling, often comparable to that of other consumer goods. A review of the literature is found in the Australian Productivity Commission report [56^{Ch. 5}], and a good deal of the American literature is summed up by Thalheimer [163]. Among the findings might be mentioned that the size of the jackpot is a good predictor of lottery sales: the bigger the jackpot, the larger the sales [51]. A large roll-over jackpot increases not only the pure economic utility of entering the lottery, but also the process utility value of entering the lottery: the consumer gets more pleasure, excitement and entertainment out of buying a lottery ticket when the jackpot is higher. This is

equivalent to lowering the price of the lottery experience, and lower price results in increased consumption.

Lottery operators may increase the price with the intention of making more money, but this may be offset by lower sales. The British National Lottery appears to have a near optimal balance between, on the one hand, ticket price and, on the other, jackpot size and frequency [164]. Cross-elasticity has been found between lotteries and horse racing in the USA, where the introduction of lotteries in some cases has led to a decline in wagering on horse racing [54, 163]. Advertising can be expected to increase lottery sales and its extent can be used to measure sales elasticity. An American study found advertising-related sales elasticity of lotteries to be comparable to that of other consumer goods [165]. Another study, however, found that lotto advertising on the radio and in newspapers had little effect on sales, while jackpot size and TV publicity regarding jackpot winners had a relatively big effect [166].

Some studies have found that the consumption of gambling products (lotteries and slot machines) on mature markets follows a stochastic Negative Binomial Distribution (NBD) pattern [167–169]. A large proportion of sales are accounted for by a minority of the buyers – a phenomenon that in business is often referred to as the “80–20” rule (where 80 percent of the products sold are bought by 20 percent of the customers). The frequency of past purchases appears in these studies to be a good predictor of the frequency of future purchases, which is interpreted to indicate that much buying is habitual. Since the NBD pattern has been verified for many different kinds of frequently-bought consumer products, the conclusion is that the consumption pattern of gambling products does not indicate a significant element of addiction or pathology.

Although some findings in this body of literature appear to be a bit conflicting, the bulk of it suggests that consumption patterns for lotteries and some other forms of gambling are similar to those of other consumer products. The addictive-like consumption of gambling products by a tiny fraction of the population does not appear to be visible in these kinds of economic studies. The great majority of consumers of gambling products react as expected, according to economic models for rational and utility-maximizing product choice, to variations in price and entertainment value. There are, however, a few economic studies based on the theory of rational addiction that have come to other conclusions. These will be discussed below. Finally, it should be noted that a consumer perspective on gambling has implications for gambling policy and the responsible provision of gambling – as consumer rights, choice and protection come into focus [170, 171] – but this will not be discussed here.

RELEVANCE TO PROBLEM GAMBLING STUDIES

The studies reviewed in this section underscore that, for most people, entering lotteries and betting on horses is unproblematic and ordinary consumption of entertainment products. The studies have limited relevance for research into varying levels of gambling involvement and issues of problem gambling. They may indicate what features of lotteries and other gambling products are especially important to consumers, but not necessarily say much about what these features mean to consumers. For instance, studies of lotteries typically show that increasing the size of the jackpot increases sales. However, the studies do not say much about what a sizeable jackpot – which is certainly rich in cultural and social significances – means to presumptive lottery ticket buyers.

The theory of rational addiction

The theory of rational addiction – formulated by economists Gary Becker and colleagues [172–174] – extends standard economic theory to the consumption of addictive goods. The theory is widely accepted among economists and has been elaborated as well as modified [175], but some scholars in the economic sciences are skeptical [176]. It has been applied to a variety of addictive behaviors, among them gambling [177–179]. The theory has had little impact on addiction research as a whole, however, presumably because it is somewhat counter-intuitive and expressed in formulas that are incomprehensible to most people outside the field of economics.

The theory of rational addiction holds that addiction is a specific mode of consuming goods that has two distinctive features: reinforcement and tolerance. The theory regards these features of addiction as established facts and does not enquire into why it is so. Reinforcement is at work when greater past consumption of an addictive good increases the desire for present consumption. Tolerance is when great past consumption lowers the utility derived from consuming a given amount of the good. Together, these two features create an addictive process in which there is an increasing desire for constantly greater amounts of the addictive good. This process creates a stock of “addictive capital”, i.e. a condition of the individual of being more or less addicted. The theory accepts that people may be addicted not only to substances, such as alcohol and nicotine, but also to behaviors.

The stock of addictive capital has consequences for the utility of using the addictive good. In the short run, a strong addiction increases the utility. For instance, alcohol abuse creates hangovers that the alcoholic typically treats by consuming more alcohol. We can imagine an alcoholic who is prepared to pay a very high price for a bottle of wine when suffering from a serious hangover, compared to the price that a non-alcoholic is willing to pay. As to gambling, we may imagine a problem

gambler who is deep in debt and bets on long-shot horses in the hope of winning back what has been lost, a behavior known as “chasing”.

Some addicts strongly prefer immediate over delayed gratification and they greatly discount the negative long-term consequences of being addicted. Thus, they are much more concerned with present utility than they are with future disutility. The theory of rational addiction views the behavior of such persons as “myopic addiction”, which is distinct from rational addiction. The myopic features of addiction are well known to psychologists and part of most theories on addictive behavior, including those on gambling [180–184]. Prior to the theory of rational addiction, myopic addiction was also the usual explanation in economics for addictive patterns of consumption. It was assumed that addicts not fully realize the negative future consequences (disutility) of their present consumption of addictive substances.

The reasoning of the theory of rational addiction described thus far is not very controversial. It becomes so, however, in the following assumptions and logical steps. The theory assumes that there are addicts who, unlike myopic addicts, make fully rational choices on the basis of perfect information. These are the “rational addicts”. Thus, the utility-maximizing rational choice paradigm is claimed to be valid also for the consumption mode of heavy addicts.

Individuals are in general assumed to be rational, forward-looking and fully informed. They are aware of the risk of the possible future disutility of being addicted and using the addictive good, such as ruining their health, being fired from work, and having a broken marriage. If they become and remain addicted, they rationally judge short-term utility to be high enough to compensate for long-term disutility. The rational addict knows perfectly well the consequences of addiction, including the future negative effects, which are discounted at a certain rate. The larger the rate of discounting is, the stronger the addiction. The addict continues to use the addictive good despite its present and future negative consequences, because discontinuing the use is in the rational calculus even worse. Traumatic life events, such as divorce or losing one’s job, increase the utility of the addictive good and may therefore put a person on the path towards addiction.

Both myopic and rational addicts are assumed to be sensitive to the price of the addictive good. However, they are sensitive in different ways, making it possible to conclude, through empirical econometric studies, whether addiction to a certain good is myopic or rational. In economic terms: the two different forms of addiction result in different short-run and long-run price elasticities. The myopic addict is sensitive to price changes in the present and the near future; the degree of price sensitivity depends on the addictiveness of different types of goods. What happens in the remote future is irrelevant to his or her shortsighted decisions. The rational addict, to the contrary, is more sensitive to price changes in the remote future than at present or in the near future. Assume, for instance, that it is known that the price of cigarettes will be lowered in one year from the present. The rational tobacco addict will react by increasing his or her addictive capital immediately, i.e. smoking more. The rationality is that he or she wishes to become more addicted during the year before the price cut

in order to maximize utility from smoking lots of cigarettes as soon as the price has been lowered. Conversely, a rise in price in the remote future will prompt the rational addict to decrease his or her stock of addictive capital right away.

Myopic and rational addictions have different policy implications. Myopic addicts act on the basis of imperfect information and utility calculus and would therefore benefit from being educated about the adverse future consequences of being addicted. Rational addicts are assumed to have full knowledge of what is at present known about potential negative consequences. Educating them about the dangers of addiction and the various ways to stop abusing is thus useless unless brand new information is presented, for instance, from addiction or treatment research. Efforts to make rational addicts quit are misguided, since they themselves have chosen to be addicts and would suffer even more if they stopped using the addictive good. Policy measures should therefore be concentrated on correcting negative externalities, such as preventing drunken drivers from harming others by causing road accidents.

The three economic studies on gambling mentioned above [177–179], all claim to present evidence suggesting that gambling – entering lotteries and horse betting – is addictive and that addiction is rational. They draw this conclusion from econometric analyses that, among other things, appear to show that gamblers react to expected price changes in the remote future, which is the kind of price elasticity characteristic of rational addiction. However, since the theory of rational addiction as originally formulated and used in these studies has been subject to devastating critique, by Elster [185] for example, these results should be viewed with great caution. One study, for instance, tested the approach on the consumption of a variety of consumer goods and arrived at the incredible conclusion (unless the cumbersome notion of beneficial addiction is accepted) that milk is more addictive than cigarettes [176]. This test thus suggests that the theory of rational addiction is flawed. That is also the opinion of numerous scholars in the fields of addiction and gambling studies [56], including the present author.

RELEVANCE TO PROBLEM GAMBLING STUDIES

There is reason to assume that the theory of rational addiction is fundamentally flawed. It is thus questionable that the theory is of any relevance to problem gambling studies.

The leisure gambler

Leisure studies incorporate perspectives from economics, sociology, psychology, and human geography. The focus of this multidisciplinary field of research is on people's leisure choices and behavior. Since people do quite a lot of different things in their free time, the activities studied are varied, such as sports, tourism, nature

trekking, and various forms of gambling. These activities are in theory and often in practice substitutable, bringing coherence to leisure studies: people have leisure time and choose between various available activities. Leisure studies can thus be described as the study of how people allocate limited time and money on structured activities that are not mandatory but engaged in out of free will. These studies differ from consumer studies in a broader sense, since the health effects of the activities are often taken into account, as are the consequences for society as a whole of people engaging in various leisure activities. Furthermore, while most consumer studies are quantitative, leisure studies often use qualitative methods.

Since gambling is approached analytically as a leisure activity, some motivations that people may have for gambling – professional gambling and pathological urges – do not fall within the focus of interest. In leisure studies of gambling, it is often pointed out that the leisure approach tells more about how and why people gamble in general, than studies focused on problem gambling.

Leisure studies of gambling usually stress that individuals have multiple motivations for spending time and money on gambling, that different forms of gambling have different motivation profiles, and that certain groups of people are more attracted to some forms of gambling than other forms [96, 98, 186–201]. The motives revealed in the studies are – and naturally enough, since gambling is voluntarily chosen by people from various other leisure activities perceived as enjoyable and rewarding – that gambling offers positive experiences: having fun, meeting other people, seeing new places (casinos), excitement, the chance of winning, the intellectual stimulation of betting games, and having a break with the routine of daily life. The list presented in a study of recreational casino gambling in the USA [191] may be taken as an example of the motivations for gambling found:

1. Gambling as learning and evaluating
2. Gambling as a “rush”
3. Gambling as self-definition
4. Gambling as risk-taking
5. Gambling as cognitive self-classification
6. Gambling as emotional self-classification
7. Gambling as competing
8. Gambling as communing

The leisure perspective rests on the assumption, outlined above, that gambling has in an economic sense a process utility. People do not normally believe that they will, in the long run, earn money by gambling. They know that they are likely to lose, but gamble nevertheless because they are willing to pay a price for the enjoyment and experiences they get. While the “pure” economic approach explores the utility values and functions of gambling participation more abstractly, leisure studies focus on the motives for gambling and the choice to gamble rather than participate in other leisure activities. This perspective is present also in a number of cultural studies, to

be discussed below, where commercial gambling is seen as part of contemporary post-industrial society, with an emphasis on the consumption of experiences, imagination and symbolic objects [66, 202, 203].

RELEVANCE TO PROBLEM GAMBLING STUDIES

Studies of gambling as a leisure activity are much needed as a complement to problem-oriented research into excessive gambling. Such studies reveal the varying motives that people have for participating in gambling. Some of these motives may be factors that, in certain circumstances, contribute to problem gambling. In contemporary gambling studies, the formerly sharp distinction between “normal” gambling and “pathological” gambling appears to be dissolving; many researchers acknowledge that individuals who at one time have serious gambling problems at other times gamble in a controlled manner or not at all. It therefore seems valuable to pursue research on the characteristics of both controlled and uncontrolled gambling, the former being a leisure activity.

Gambling as economic exchange

The economic functions of gambling are necessarily limited by the fact that nothing material is produced. The only product, in an economic sense, is the experience of gaming, which in industrial societies may be sold on a mass scale, generating enormous profits and sustaining entire communities, such as Las Vegas.

In non-commercial games the experience of gambling is offered for free, and money or valuables are circulated among the gamblers. If money is circulated, in a fair game of chance, the wins and losses of individual gamblers will even out in the long run. If valuables are circulated, however, gambling may fulfill important redistributive economic functions. In some societies, mainly small-scale third world societies, these functions sustain gambling as a social institution and are a principal motivation for gamblers to partake in games. For literature overviews and discussions, see Binde [92] and Wagner [204].

An example of gambling with just such a redistributive function was reported from the Hadza in Tanzania in the early 1980s by the British anthropologist James Woodburn [205]. The Hadza are hunter-gatherers who live in small groups on the dry savannah southeast of Lake Victoria. A principal ethical value among them, which is of great adaptive value for survival in the harsh environment, is sharing: the one who at the moment has plenty of food or other valuable assets is expected to share with others in the group. In practice, this ideal may conflict with the wish of individuals to keep what they have. Hadza men gamble a lot on a kind of dice game – *lukuchuko* – played with disks made of bark; it is a game of chance. At stake are relatively valuable objects that cannot be manufactured locally but are imported into the area, such as metal-headed hunting arrows, knives, axes, and beads. The

lukuchuko game is rapid and hundreds of rounds may be played each day. Each man bets objects that he can dispense with and keeps objects that he has won and has use for. If someone is very lucky and wins a lot, he is urged by the others to continue gambling until he starts to lose. Thus, gambling levels out resources between the men, without the strain on social relations that would follow if the ideal of sharing were invoked, e.g. by one person simply demanding something from another. Woodburn notes that: “It is paradoxical that a game based on a desire to win and, in a sense, to accumulate should operate so directly against the possibility of systematic accumulation (p. 443–4)”.

The present author has elsewhere [92] discussed the further implications of gambling viewed as a form of exchange. Drawing on economic and anthropological theories of exchange [206–208], Binde [92] proposes a scheme for analyzing and comparing gambling and attitudes to gambling in different cultures. The scheme relies on the identification of a few elementary traits of societal exchange systems – generalized versus balanced reciprocity, and voluntary versus involuntary transfers. Accordingly, redistributive functions of gambling are principally found in non-Western societies where there is an ethos of sharing. In modern Western societies, the dominant mode of exchange is the commercial market. Hence, gambling becomes a product that is sold and consumed, and the accompanying ethos is that of freedom of choice. Gambling is thereby conceptualized as the voluntary consumption of leisure and entertainment services, while heavy gambling is regarded as indicating loss of rational choice, i.e. compulsive behavior or addiction.

RELEVANCE TO PROBLEM GAMBLING STUDIES

While the function of gambling to redistribute valuable goods is at work primarily in small-scale pre-modern societies, it is of more general interest to contrast the economics of non-commercial gambling with the economics of commercial gaming. In a non-commercially operated fair game of chance, losses and wins even out in the long run. Even the most compulsive gambler would lose nothing more than time in such a game. This means that there is no accelerating chase of losses, as chasing cannot apply to time lost, only to money lost. Since chasing losses is a main component of problem gambling – some see it as the very essence of the problem – it may be that gambling in such circumstances would seldom become excessive and uncontrolled. Thus, the phenomenon of problem gambling may exist primarily in commercial gambling and in non-commercial gambling that is unfairly run or where there is a skill element making some players more successful in the long run than others. Whether this is true or not could be empirically tested in problem gambling prevalence surveys where different varieties of commercial and non-commercial gambling are distinguished. Whether the motives and involvement in games vary between commercially and non-commercially arranged games is a related empirical question.

Gambling and the macro-economy

There are apparently no specific theories on how gambling in society is influenced by macro-economic factors and trends, and there is little research on the subject. In the public debate, it is sometimes claimed that recession and high unemployment rates stimulate gambling. This claim rests on an assumption that in such bad times, people tend to put their faith in gambling and hitting the jackpot. It could, however, be argued that when people have less money to spend, they cut back on expenses for entertainment, such as gambling. According to this view, people would gamble more in times of prosperity, when they have more money to spend on entertainment. The “recession” theory has some academic adherents [209, 210], but there does not seem to be any solid evidence to support it. The “prosperity” theory, on the other hand, appears to be supported by a few studies [211, 212]. However, other scholars have come to the conclusion that the state of the market has little influence on the consumption of gambling [213]. On the stock market, the common view is that the revenues of gambling companies (except those running resort casino business) are relatively independent of business cycles and the macro-economy.

Some other thoughts have been formulated on the extent of gambling and macro-economic conditions. From a political science perspective, an interest group model of gambling regulation has been proposed [214]. The model is an application of Gary Becker’s theory of competition among pressure groups for political influence [215]. Economic and political variables relating to gambling, such as the state’s income from gambling taxes and the cost of regulating gambling, are included in a model that assumes two opposing political standpoints: one demanding strict regulation and the other favoring a liberal gambling market. The values of the variables predict the political support that the opposing standpoints are likely to get. For instance, if the cost of gambling regulation is very high, support for regulation is likely to be weak, and if, through strict regulation, the state can make a lot of money from gambling taxes, support is likely to be strong. When applied to the modern history of gambling regulation in the USA, the model fits well [214].

RELEVANCE TO PROBLEM GAMBLING STUDIES

There is little research on macro-economic impact on the extent to which a population is involved in gambling. This is unfortunate. Politicians, regulators and legislators wish to know the facts about the determinants of gambling participation and how these relate to problem gambling prevalence. It is unclear how gambling participation, under various macro-economic conditions and models of gaming regulation, might best be studied – whether economics, history, political science, or some other discipline would be the most successful.

Betting markets

Economists have put much effort into research on the effectiveness of financial markets, mainly the stock market. If a stock market is effective, all current and relevant information on a given stock is reflected in its price, which is set by the balance between supply and demand. No actor on the market knows anything relevant about the stock that others do not know and all can in principle perform the same analyses of the market. Anything beyond logical conclusions drawn from such analyses are as good as a guess. Thus, if the market is fully effective, the application of analyses of particular stocks will not, in the long run, produce a greater profit than investments in the market at large. If the market is ineffective, however, profits can be made by investing in stocks selected on the basis of better knowledge than other actors possess or by superior analytical ability. Among economists, there has long been debate about to what extent the stock market is effective [216].

Many tests of the efficient market hypothesis have been performed. There are, however, some inherent methodological problems, which concern, among other things, the complexity of stock markets with different sectors and when to set a final price of a stock (selling price), to be compared to the initial price (buying price) and thereby used to calculate the profit of an investment. Economists have therefore looked at markets other than the stock market to test the efficient market hypothesis and related assumptions, including the market for horse race bets, i.e. horse betting.

Although the markets for stocks and horse betting differ as to the expected long-term return [217], there are some close similarities and, for researchers, horse betting has the advantage of being less complex. Investing in stocks corresponds to betting on horses and the return on the bets corresponds to the return gained when selling stocks that have been invested in. The return of horse bets can be calculated for a variety of factors, such as high/low odds horses, the timing of the bet relative to the start of the race, the available amount of information about the horses, and the horses' starting position. Although there has been some interest in betting on horses at bookmakers, to test hypotheses about the influence of insider knowledge [218–220] for instance, most economic studies on horse betting have concerned pari-mutuel (totalizator) betting. The literature on the economics of horse betting is quite substantial [221, 222].

The many economic analyses of pari-mutuel betting markets all come to the same conclusion: these markets are quite effective. There are some imperfections, resulting from biases in betting behavior, but these can only in some rare cases be utilized to make a consistent profit from following a specific betting strategy. Thus, the knowledge and analytical power of the collective of bettors, as it is accumulated by the totalizator and displayed as odds, is almost always superior to that of any individual player [223].

The horse betting collective at major race- and trotting tracks has thus, in an economic sense, good information and acts rationally overall. This does not mean,

however, that individuals within the collective are equally well informed and act equally rationally. It is with regard to this issue that the economic studies of horse betting are of wider interest to studies of gambling behavior, both that of the leisure gambler and the problem gambler.

With respect to the return of their bets in the long run, the player collective is made up of three groups. There are ordinary leisure gamblers who select horses on the basis of a wide variety of ideas and principles. This group earns a return of slightly less than the expected return, that is, amount bet minus track take. Then there is a group whose return is significantly less than that, because the players often follow betting strategies that perform poorly. Some of these strategies are known as being indicative of problem gambling, such as overestimating the chances to win and chasing losses (see below). The third group consists mainly of expert handicappers – handicapping being the art of picking horses on the basis of relevant information and analytical skill. Individuals in this group earn a greater than expected return on their bets because they consistently follow good betting strategies. Some of the favorable strategies employed by such experts are inverted mirror images of the failed strategies of the above-average losing players in the second group.

The most explored phenomenon in betting behavior is the favorite-longshot bias [222, 224–229]. The favorite-longshot bias has been observed at many racetracks and other betting markets, though not all, and research is currently focused on isolating the conditions under which it occurs. The bias is created when players tend to bet too much on long-shot horses with high odds. The reasons for making such bets may be: picking horses at random, wishful thinking that there is a good chance of winning, the thrill of having the chance to win a lot of money, or the expectation of personal pleasure and bragging rights from having picked a winner that few others believed had a chance. The favorite-longshot bias is usually more pronounced in the last races of the day [230–232], when an increasing number of players are running low on gambling funds and hoping for that one big hit that would make them break even or make a profit – they chase their losses. The end of the day is also when players are most influenced by the day's intake of alcohol. Consequently, the expert player bets more often on favorites and second favorites. On its own, such a strategy is seldom favorable enough to actually generate a profit, but it can significantly reduce losses. For instance, a Swedish study of trotting races included in the V75 Pick Seven game, found that the return from placing win bets on horses in the odds range of 5 to 6 (a typical second favorite odds) was 92 percent, thus 12 percent higher than the average expected return of 80 percent [233]. The longshot bias was very noticeable, as horses with odds of 30 and above yielded an average return of only 48 percent.

Other issues investigated include the advantage of betting as late as possible. A number of studies have shown that, on average, the final odds, when a race starts, better reflect the chances of the horses to win, as later evidenced by the results of the races, than the odds at any earlier point in time [223, 234]. The later a gambler waits to decide how to bet, the greater the amount and quality of relevant infor-

mation he or she has access to. Economists have also explored the performance of forecasting models including a multitude of factors relating to past performance and the current race [235]. The application of such models with the aid of computers has proved to be quite profitable in some large betting markets [236^{pp. 30-41}, 237].

The economic studies discussed in this section concern questions relating to the efficient market hypothesis and explore the extent and character of inefficiency and skewness in particular betting markets. Thereby, they also say something about the motives of different types of bettors. Since these bettor types are distinguished, at least in part, by the size, frequency and timing (relative to the start of races) of their bets, the studies also say something about involvement in gambling. There are few but promising attempts to study betting behavior with the express purpose of exploring player types and motivations for gambling. Some of these studies have analyzed betting slips in the UK [186–188, 194, 195, 238] and one investigated patterns of betting in Polish casinos [239]. As a complement to survey studies and qualitative investigations, such quantitative studies appear well worth pursuing. More generally, large-scale and detailed player tracking at internet gaming sites offer exciting new opportunities for gambling research [240, 241].

RELEVANCE TO PROBLEM GAMBLING STUDIES

Economic research on betting markets provides valuable insights into human decision-making under conditions of uncertainty and of the character of financial and other markets. Through the analysis of betting patterns, some of the thinking and motives that underlie gambling behavior can be revealed. A rough image of several types of gamblers emerges: one – the rational and calculating gambler; another – the gambler who plays for entertainment; and still another – the gambler who often acts ineffectively in a variety of ways. Quantitative studies investigating betting patterns offer unique opportunities to unobtrusively observe the actual behavior of gamblers on a mass scale. Player tracking is a promising method that can complement or to some extent replace quantitative survey studies that rely on self-report of gambling, especially if researchers are granted access to the electronic databases of gambling companies.

Cultural approaches

IN 1952, TWO AMERICAN anthropologists compiled a list of 164 different uses of the concept “culture” [242]. Today, that list could be made even longer since new ideas about culture have emerged, most notably in cognitive anthropology. A basic definition is that culture is socially transmitted knowledge that has accumulated over time and enables complex social coordination and highly varied social systems [243]. Culture is what confers shared meaning to objects, events and relations. Taking a cultural approach to gambling thus concerns the collective meanings, values and moralities that relate to gambling.

Play and gambling

The anthropological and ethnological literature on play is extensive [244]. The subject of play is covered also by pedagogy and, with regard to animals, by ethology. A basic assumption of the studies is that play has valuable functions for the individual or the group. Play stimulates the intellectual or physical development of human beings, aids the learning of social and cultural skills, strengthens group cohesion, gives excitement and entertainment, and therefore promotes health and well-being. These general functions will not be discussed here, the focus being on how gambling is viewed from a play perspective.

Undoubtedly, the most well-known treatise on play is *Homo Ludens: A Study of the Play Element in Culture* [245] by the Dutch historian Johan Huizinga. The fame of Huizinga’s treatise stems from its radical message: play is at the very foundation of culture and society, “civilization arises and unfolds in and as play” (p. i). Play is thus viewed in a very positive light and Huizinga explores it across the various phases of historical evolution and dimensions of society. Play is claimed to provide the creativity, energy and spiritual mood necessary for the development of culture and society. Naturally enough, a one-track approach such as this to the rise and progression of human civilization appears rather strained to the balanced reader. The book should preferably be taken not as an account of the origins of civilization, but as a source of inspiration as to the importance of play and imagination in human life.

As to gambling, *Homo Ludens* says very little. It is, in passing, claimed that gambling games are “unproductive” for the development of culture and that they are “sterile, adding nothing to life and the mind” (p. 48). Huizinga states that in play there is no material interest (p. 13) and laments the existence of “false play” (p. 205), which presumably indicates a conception of gambling as not being genuine play [246].

Another well-known treatise on play is the French intellectual Roger Caillois' *Man, Play, and Games* [68]. While Huizinga argues that human civilization is built on play, Caillois is more cautious. He argues that "the spirit of play is essential to culture" (p. 58), but adds that "games and toys are historically the residues of culture". As "survivals" of earlier cultural contexts, games acquire new functions and meanings in contemporary society. However, in the end, the relation between cause and effect may be hard to determine: "... the question of knowing which preceded the other, play or the serious, is a vain one" (p. 64).

Caillois is more analytically minded than Huizinga and accepts gambling as a form of play. He distinguishes four main categories of play: *agon* (competition), *alea* (chance), *simulation* (mimicry), and *vertigo* (ilinx). Examples of these categories would be, respectively: chess, roulette, theater, and bungee jumping. The four categories of play are further subdivided into eight by a dimension spanning between *paidia* and *ludus*, i.e. from spontaneity, joy and improvisation, to contrived complexity and cultural codification. Caillois does not assume, as Huizinga does, play to have some single and basic cultural function that accounts for its prevalence in the societies of the world. He discusses a great number of functions and aspects of the different categories of play, but only his main ideas with regard to gambling will be related here.

Gambling belongs to the category of *alea*, i.e. play based on chance. Caillois states that players may have superstitious ideas about chance games, introducing an element of determinism and control. This he views as a "perversion" and a "corruption" of *alea* (pp. 46–49). True *alea* presupposes, Caillois states, "the resignation of the will" and he observes that it is "therefore understandable that states of trance, possession, or hypnosis may develop" (p. 73).

With regard to gambling, perhaps the most interesting part of Caillois' treatise is the discussion on the contrast and complementarity between competition (*agon*) and chance (*alea*) (Ch. VIII). In hierarchal societies and organizations there is a need for principles for determining and for changing the position of individuals in the system. The two main principles are *merit*, which is gained in competition (*agon*) with others, and *chance*. The chance principle often amounts to heredity, since Caillois argues that "birth is comparable to a ticket in a universal and compulsory lottery which assigns everyone certain gifts and privileges" (p. 111). Furthermore, certain mechanisms based on chance principles may be devised to loosen up otherwise rigid social systems, thus allowing individuals to feel that they have a chance to advance socially. In a structural-functionalistic vein, Caillois argues that games of chance, for instance lotteries, constitute such mechanisms. They offer hope to the dispossessed since anyone can win and suddenly advance in the social hierarchy:

This illusory expectation encourages the lowly to be more tolerant of a mediocre status that they have no practical means of ever improving. Extraordinary luck – a miracle – would be needed. It is the function of *alea* to always hold out hope of such a miracle. That is why games of chance continue to prosper (p. 115).

In an appendix to *Man, Play, and Games*, Caillois discusses gambling in industrial and other societies where people have plenty of leisure. There, gambling often acquires a cultural significance that influences “art, ethics, economy and even life experience” (p. 146). This influence is not very positive. Games of chance “tend to replace work” and people get devoted to play, thereby becoming “nonchalant addicts” and “eternal children” (p. 147). Caillois thus seems to argue that the structural function of games of chance to provide hope to the dispossessed may be exaggerated and ruin the morals and ambitions necessary for a sound society.

Among other major contributions to Huizinga’s and Caillois’ “armchair” type of speculative play theory may be mentioned Eugen Fink’s *Spiel als Weltsymbol* [247] and related work [248], which, from a philosophical perspective, concludes that play provides a symbolic re-enactment of the world where man can experience existential freedom. The second chapter of Adolf Ellegard Jensen’s *Mythos und Kult bei Naturvölker: Religionswissenschaftliche Betrachtungen* [249] discusses play from much the same perspective as Huizinga. Carlo Montgardini’s *Saggio sul gioco* [250] is a hotchpotch typical of much of Italian scholarship in the arts and humanities, in which various speculations and theories are discussed at length with minimal doses of empirical substance. None of these works have much to say about gambling.

Some contemporary scholars express a notion of gambling as “adult play”, or as containing a salient play element, when underlining what they perceive to be positive and benevolent effects of gambling. These effects may be to boost self-esteem, serve existential needs and provide healthy stimulation [251, 252], offering an escape from the suspense, conflict, and uncertainty of real life [70], allowing the consumption of action and risk [202], experiencing “flow” [80], enjoying pleasant telic or paratelic states [253], or providing existential optimism [254]. In the design of casinos, the “play ground” concept is widely used [255].

In the past two decades, there has been a renewal of play studies within the social sciences and the humanities, occasioned by computer and video games becoming a major leisure activity. Contemporary game studies investigate the psychology of computer and video games, the social contexts of and motives for playing, and the cultural meanings expressed in game media and online gaming worlds [256–258]. Game studies are theoretically heterogeneous, incorporating elements for instance from early play theory, cybernetics, narratology, cultural studies, sociology, social learning theory and ethnology. Hitherto, game studies have not shown much interest in gambling games. Some psychologists have suggested that computer and video games may be addictive in the same way as gambling and psychoactive substances. This view, however, has been questioned [259]. Because of the emergence of hybrid forms of gaming and gambling, both online as well as on electronic machines, modern play studies may in the future pay more attention to gambling.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Generally speaking, early cultural theories of play do not contribute much of value to the study of gambling. Significantly, the two most influential thinkers – Huizinga and Caillois – tended to view gambling as a corrupt and inauthentic form of play. This is disappointing, since some forms of gambling have an undeniable element of play (in the broad sense of the word). Perhaps perspectives on play other than the cultural perspective may be more valuable for gambling studies. This remains to be explored since there appear to be few thoughts on this possibility. One of the few is the psychosocial “flow” theory of play discussed earlier [80]. Possible fields of exploration include cybernetic play theory [260] and the psychobiological theory of core emotional feelings in humans and animals, suggesting that one such feeling is “play” [261, 262]. Modern game studies are likely to become of increasing relevance to problem gambling studies if hybrid forms of gambling and video/computer games become popular.

Religious and existential aspects of gambling

In many traditional and non-Western cultures, gambling, religion and magical practices merge [68, 263–266]. Religious and magical ceremonies may include elements of gambling, and gambling may include religious and magical beliefs. The connection between gambling on the one hand and superstitious and magical beliefs on the other is also present in modern Western societies, where gamblers hold a multitude of such beliefs [105^{pp. 134-5}, 267–269, 270^{Ch. 5}]. Magical thinking – believing that the results of chance games are influenced by fate or specific luck factors, or possible to influence by means of magical procedures – is commonly regarded to be associated with gambling problems.

As to an eventual nexus in modern Western societies between gambling, religion and existential issues, opinions are divided. In popular discourse and the public debate, gambling is often depicted as an exceedingly secular and materialistic activity, sharply contrasting with religious sentiments and an interest in spiritual matters. The driving force behind gambling is believed to be hunger for money and for the material belongings and mundane prestige that money can buy. Alternatively, gambling is viewed as a shallow and trivial form of entertainment, practiced by uncultured and narrow-minded people. Such views are common among dogmatic Christians, the cultural elite, and among left- or right-wing sympathizers. As a consequence of such negative views among Christians – in particular Lutherans as opposed to Catholics – gambling participation usually correlates negatively with the intensity of engagement in formal religion and fundamentalist beliefs [60^{Ch. VI}, 271–277].

However, several scholars have maintained that gambling in Western societies is connected with existential issues and contains elements of a religious nature [263]. It has been argued, for instance, that gambling activates “a mystical state” [251^{p. 138}], induces a “conscious mood of mysticism” [278^{pp. 359-60}], “possesses a metaphysical and almost sacred meaning” [279^{p. 200}], “encapsulates the area of mystery” [6^{p. 26}], establishes “a numinous connection” [264^{p. 35}], provides an outlet for animistic beliefs [61, 280] and “excites the deepest of all interest in life – that in the transcendent, the dark obscure beyond” [281^{p. 406}].

In a paper entitled *Gambling and Religion: Histories of Concord and Conflict*, the present author [263] presents a theoretical model for how to understand these diverse relationships between gambling and religion in various societies and at various times in history:

It is argued that gambling and religion have certain elements in common: notions of the unknown, mystery, and fate, as well as imagery of suddenly receiving something of great value that changes life for the better. In many traditional cultures gambling has existed in concord with polytheistic and animistic religion; gambling and religion go well together precisely because of the elements they have in common. Monotheistic religions that claim authority in religious and transcendental matters, however, tend to denounce gambling and this disapproval has been fueled by a conception that gambling offers a wicked alternative to certain religious notions and experiences. The elements that gambling and religion share have thus become a source of conflict (p. 145).

Thus, in contemporary, secular Western societies, gambling is to some extent motivated by an interest in matters of an existential and religious nature. The present author has explored how such an interest structures the content of Swedish newspaper articles on jackpot winners [44]. In a study of a large sample of such articles (about 2000 items), four cultural topics were identified: wealth as a test of morals and character, the social impact of wealth, the just and good world, and luck and the occult. It was concluded that, by providing a discursive realm for existential and moral issues, narratives of jackpot wins to some extent fill a void left by the decline of traditional religion and folklore. This can be assumed to stimulate the interest in lotteries and other games of chance.

In the words of the American play theorist Brian Sutton-Smith [254], “games of chance and gambling are ... basically a kind of religious effort to deal with fate, a kind of existential optimism” (p. 72). Gambling has of course other aspects as well, but as the late Gordon Moody, Minister of the Methodist British Church and engaged in problem gambling issues, remarked [282]: “the roots of gambling do lie deep in our general human experience” (p. 50).

RELEVANCE TO PROBLEM GAMBLING STUDIES

Studies of religious and existential aspects of gambling reveal motives for gambling that are far from obvious and generally unrecognized. They also shed further light on motives and correlates of gambling involvement that are well known, such as “superstitious” beliefs, which may be risk factors for problem gambling. The disinclination to partake in gambling by adherents of certain religions, such as dogmatic Lutheranism and Islam, are – from a public health perspective – protective factors against problem gambling. Research into factors constituting risk and protection for problem gambling should therefore consider the standpoints of individuals in religious and existential matters.

Cross-cultural studies

In past and present cultures of the world, gambling has been absent or uncommon in some, moderately practiced in others, and prevalent and intense in others again. The present author [283] has mapped the occurrence of gambling in the pre-colonial world and discussed the possibility of identifying societal and cultural factors that promote or restrain gambling.

The mapping [283] shows that indigenous gambling in pre-colonial times tended to cluster in geographical space and form a few large areas: (a) North America, (b) Europe, (c) western-central Africa, and (d) China, mainland Southeast Asia and India. Areas where there was little or no gambling were: (e) South America, (f) southeastern Africa, (g) northern Asia, and (h) Melanesia, Australia, and New Zealand; this general picture is drawn also in earlier ethnographic work [284^{p. 553}].

When analyzing this pattern for factors that promote or restrain gambling, statistical analysis is preferable. This requires a database of world cultures, or a sample thereof, in which gambling, and also social and cultural traits that might covary with gambling, are encoded. Unfortunately, the major ethnographic cross-cultural databases used for statistical studies do not identify gambling as a discrete phenomenon. In the widely used Ethnographic Atlas, as well as its subsets, “games” is a variable, further subdivided into games of physical skill, strategy and chance – a typology introduced by Roberts, Arth and Bush [285]. However, “games of chance” does not necessarily include gambling, since such games can also be played without stakes. All results from cross-cultural studies using this typology must therefore be viewed with caution as to their generalizability with regard to gambling. The Human Relations Area Files (HRAF) does have an entry for gambling, but this body of information is text based and does not contain quantified variables.

There seem to be only two cross-cultural studies in which a sample of cultures has been coded with respect to gambling proper. The first was conducted by the American economist Frederic Pryor [144] and used a custom sample of 60 societies,

covering 58 of the 60 distinct cultural areas of the world as defined by anthropologist Peter Murdock in the World Ethnographic Sample [286]. Statistical regression analysis showed that four factors emerged as co-varying with the presence and intensity of gambling, explaining 68 percent of the observed variation:

- presence of domestic commercial money (positive)
- presence of socioeconomic inequality (positive)
- society nomadic or semi-nomadic and more than half of its food supply coming from animal husbandry (negative)
- location in North America (positive)

The present author has discussed these findings at length elsewhere [283], offering alternative or complementary explanations to those suggested by Pryor from his utility theory perspective. To assist the reader, a brief recapitulation of that discussion follows here. *Commercial money* makes it easier to gamble, especially in cultures with elaborate exchange systems where items carry social and cultural meanings that supersede their use value. Where there is *socioeconomic inequality*, those who are poor are aware of the affluence of the rich and dream of becoming affluent themselves, a dream that promotes gambling. *Nomadic peoples* can bring with them only a limited stock of items necessary for survival and many of them do not use money. To lose these items at gambling could mean disaster for a family and to win more of them would be of very limited utility, hence gambling tends to be uncommon. *Location in North America* refers in this cross-cultural sample to first nation peoples. With the exception of tribes in the arctic and sub-arctic area, gambling was usually prevalent and intense among the North American first nation peoples. Gambling had important inter-tribal functions that spread games and the practice of gambling over the continent and sustained it at a high level of intensity.

Pryor's [144] cross-cultural statistical study on gambling and those on "games of chance" have examined quite a few other social, cultural and psychological factors. The correlations (negative or positive) with gambling claimed to have been found in these studies are either related to the four factors mentioned above or questionable [283, 287, 288]. An ocular inspection of a map showing the geographical distribution across cultures of gambling in the pre-colonial world does not suggest any other obvious factors, apart from the four identified by Pryor and factors related to these, correlating with gambling [283].

The other cross-cultural statistical study that identifies gambling *per se* used a sample of 60 societies from the HRAF, of which 32 had an entry on gambling [289]. The study, which used also other bodies of source data, had the aim of testing the two predictions, derived from evolutionary theory, that gambling has to do with risk-seeking and that males and young adults are more prone to seek risk than are females and older adults. The predictions to be tested were thus that: (a) males gamble more, their gambling is riskier, and they more often have gambling problems, and (b) the same would hold for young adults compared to older adults. The study found support in the HRAF data for the first prediction but not for the second.

However, the apparent support for the first prediction should be viewed with caution, since there are plenty of other possible explanations, in addition to a greater proclivity to take risks, for males gambling more than females, e.g. that men have more money or goods to spend, more leisure time, are able to spend more time outside the walls of the home, and are in many cultures more motivated to use money or goods to gain or reaffirm social status. In the conclusion of the article, the author admits that attention must be paid to the social contexts of gambling and that there are forms of gambling that have little to do with risk taking.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Cross-cultural statistical studies may provide valuable insights into the large-scale patterns of gambling and non-gambling cultures across time and geographical space. Such studies tell about the functions of gambling in various types of societies and economies. They also tell about basic social and economic factors that promote or restrain gambling in society. As to the factors in contemporary Western societies that differentiate levels of involvement, and the variety of individual reasons for partaking in gambling, the studies are apparently of little relevance.

Ethnographic studies

The 19th and early 20th century ethnographic and folkloristic literature on gambling is extensive, especially with regard to North American first nation peoples, a representative example being the monumental work by Stewart Culin, *Games of the North American Indians* [290]. However, since that literature is largely descriptive and outdated with respect to theoretical assumptions, it will not be discussed here.

Comprehensive ethnographic studies of contemporary gambling, reported in monographs, are quite rare [95, 101, 102, 105, 106, 115, 291–295]. The number of articles in academic journals, book chapters or report series that present recent ethnographic research on gambling is more substantial, but nevertheless amounts to no more than about fifty. These texts concern gambling in Western societies [93, 118, 191, 296–308], as well as in non-Western cultures [87, 206, 309–324], and are heterogeneous as to theory, observations and conclusions. The studies describe one or more specific gambling settings at a particular point in time, tell about the behavior, motives and attitudes of gamblers, and account for the cultural, societal and organizational context. Some of the studies do not aspire to make statements that can be generalized to gambling in other settings and cultures; the analyses are particular, contextual and valid primarily for specific cases. Other studies have such aspirations, and the conclusions about gambling are then typically derived from more general sociological and anthropological theories about culture and social organization – such as symbolic interactionism, cultural symbolism, or exchange

theory. In these studies, the objective of the discussion on gambling is thus two-fold: to illustrate the applicability and usefulness of certain theories and to explain or illuminate particular gambling practices. Some of these ethnographic studies are discussed in other parts of this report.

The general lesson of ethnographic studies is that a comprehensive and “deep” understanding of particular gambling practices can be obtained only by the use of ethnographic methods, including participant observation, and by taking a “native” point of view, i.e. the view of the gamblers. The exhaustive description of a gambling setting, condensed to a model or set of rules, would allow an outsider to enter the setting and behave perfectly appropriately, in the eyes of the native actors [105⁶¹]. The model or set of rules may be further abstracted, but then loses its full power as a template for appropriate behavior. The ethnographic studies reveal motives for participating in gambling. As to symbolic and social structures, they provide a picture of the gambling setting and its practices, in which – ideally – the crucial components, interconnections, recurring themes and layers of significance can be discerned. Ethnographic studies have the potential to reveal situational rationalities [98], i.e. patterns of thinking shaped by peculiarities of the game, the setting, and social interaction, which determine how money is spent on gambling. Such rationalities – for instance, betting on long-shot horses, overestimating the skill element of gambling, and chasing losses – may appear sound to the gambler involved in gambling but not to an outside observer.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Ethnographic studies are of significant value for problem gambling research. Such studies reveal motives for gambling among various groups of people and with respect to different forms of gambling. They may give insight into processes and conditions that contribute to high involvement in gambling, which may make it possible to identify risk factors for problem gambling. Ethnographic studies may also reveal conditions that moderate tendencies to excessive gambling and ways in which individuals cope with emerging gambling problems. They also describe attitudes and moralities that relate to gambling and that consequently have an impact on the extent to which it is practiced. All this knowledge is useful both when designing problem gambling surveys and in the interpretation of results. While qualitative ethnographic studies provide a reality check for quantitative survey studies, quantitative survey studies provide hard facts and figures about gambling behavior.

Studies of minority ethnic groups and specific age groups

There are a number of studies on gambling among minority ethnic groups [90, 325–340]. The perspectives of these studies are diverse, but they have in common that they are occasioned by the assumption or fact that members of a minority ethnic group gamble more than citizens in general and that this is a potential or real problem.

The relatively high propensity to gamble among members of minority ethnic groups is explained as a consequence of socio-economic and cultural factors. Among the socio-economic factors discussed are social marginalization, low status, relative poverty, unemployment, and little prospect of becoming affluent through work. Such factors push members of minority ethnic groups towards the dream world of gambling with its illusion of quick and easy money in abundance. It has also been suggested that gambling may function as a way to assuage painful emotions that stem from being an immigrant or refugee, such as alienation, rootlessness, traumatization and, in the case of male heads of families, loss of family authority.

As to cultural factors, it has been proposed that immigrants and refugees from countries where there is little gambling may lose their heads when suddenly confronted with high availability of many forms of legal gambling. They bet big and recklessly since they have little previous experience of gambling and unrealistic beliefs about the chances of winning. Certain cultural traits may be highlighted as explaining high involvement in gambling, such as a fatalistic outlook, an overestimation of the importance of personal skill, belief in magic, and a propensity to take high risks. Among some ethnic groups, casinos have become popular places for entertainment and socializing with compatriots. This may be so because gambling is a traditional social activity, as among the Chinese. It may also be due to distaste for bars and other Western public places for socializing that are characterized by courtship between lone men and women, consumption of alcohol and relatively frequent violence, and often also which reflect class distinctions. The cosmopolitan, egalitarian, safe and controlled casino appears a more suitable place for an evening out, meeting old friends, and making new ones.

Cultural factors may deter a person with gambling problems from seeking help. One such factor is a cultural perception of heavy gambling as a vice rather than an addiction or social problem, which makes the problem gambler ashamed of the habit and reluctant to talk about it. Other factors that have been suggested in the literature are language problems and limited knowledge about help facilities.

The potential beneficial consequences of gambling are seldom discussed in the studies of minority ethnic groups. This is a bit surprising, since members of such groups themselves often point out that visiting gambling venues (i.e. casinos) is a way of breaking social isolation in entertainment environments that are perceived as safe, hospitable and non-discriminatory.

Shifting from the subject of ethnic groups to age groups, there is quite a substantial literature on adolescent problem gambling [2, 341–343]. Most of this literature

is epidemiological and psychological, often with a social learning perspective. It will therefore not be discussed here.

As to the gambling of senior citizens, the academic literature is more diversified [344, 345]. Some of it is psychological and some discusses senior gambling as a potential social and public health problem. There are, however, a few studies that explore social and cultural aspects of the gambling of elderly people. Typically, these studies conclude that gambling is of some positive value in the life of senior citizens [197, 346–351]. Gambling offers easily accessible, safe and relatively inexpensive entertainment that enhances quality of life, may help to break social isolation, and may have positive health effects.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Ethnographic studies of gambling among ethnic minority groups provide valuable knowledge of the motives for partaking in gambling and about the determinants of various levels of involvement. Such studies give hints about risk factors for developing and retaining gambling problems. A limitation, however, is that virtually all the studies are problem-centered and concern ethnic groups where there is relatively high involvement in gambling. Apparently, there are no studies of minority ethnic groups that play less than citizens in general and have lower than average prevalence of gambling problems. Cultural factors that protect against problem gambling are thus not explored. These may include religious, moralistic or ethical factors, and may apply differently to men compared to women. Some of the studies on the gambling of the elderly explore the positive consequences of gambling, which is unusual in a field where most attention is directed at negative consequences and problems.

Historical studies and literature history

Historical studies of gambling are quite similar to ethnographic studies, as they describe particular gambling practices, say something about gamblers' behavior and attitudes, and tell about the cultural, societal and organizational context. Such studies have explored gambling among the wealthy in revolutionary Paris [352], the gentry in old Virginia [353], the people of medieval Spain [354], Indians in North America [355] and in pre-Columbian Mesoamerica [356], lottery buyers in 19th century Europe [357] and early 20th century Sweden [358], the people and aristocracy of 18th century France [359, 360], British workers at the end of the 19th and beginning of the 20th centuries [64], Australian colonists in the early 19th century [89], dice players in Roman antiquity [361], Faro players in 19th century western USA [362], people in ancient and medieval Jewish society [363, 364], people in the colonial Philippines [365], Victorian bookmakers and their customers in England

[366], female gamblers in 1790s Britain [367], black Americans in Chicago from 1900 to 1940 [368], and among Venetian noblemen in the 16th and 17th centuries [369]. Some literary studies have much the same aim: to give a picture of gambling practices and attitudes towards gambling in a certain historical setting, by the reading of works of fiction of that time [265, 370–376].

As is evident from the above list of historical works and their topics, to describe even their main findings and discussions would require too much space. In general, however, by providing historical, social and cultural context, good historical works offer an understanding of why gambling was practiced in a certain way, and why it had its distinctive mood and organization. The viewing in retrospect, over the passage of time, of events and ways of life often reveals essential features and significances that people of the time themselves could not clearly see because of the myopia of contemporaneity.

Furthermore, there are studies that describe and analyze gambling and changing attitudes to gambling over long periods of time, i.e. decades and centuries [63, 209, 377–381]. A few works suggest that gambling in the USA follows cycles of acceptance and disapproval [67, 382–384]. A period of liberalization and increased gambling among the population reaches a climax of excess, causing a backlash of disapproval and restrictions of gambling opportunities. People gamble less, but then the passion for gambling intensifies again, the cycle is completed, and the process repeats itself. Such a cyclical pattern is discernible also in Europe [352]. These gambling cycles call to mind stock market bubbles, which occur with certain regularity and are followed by periods when a sober and relatively risk-conscious attitude to stock investments predominates.

A general observation in many historical works, as well as in ethnographic and other texts on gambling in particular societies, is that the extent and mode of gambling reflects the character of that society and the cultural climate of the time [87, 91, 385]. As Roger Caillois states [68]: “It is not absurd to try diagnosing a civilization in terms of the games that are especially popular there” (p. 83). Thus, for instance, gambling in the USA has been found to reflect the frontier mentality of the 19th century American West [386], the mode of male casino playing in Latin America to reflect the cultural value of *machismo* [91], and gambling among Venetian noblemen in the 16th and 17th centuries to mirror a duality of commercial heritage and feudal military culture [369].

RELEVANCE TO PROBLEM GAMBLING STUDIES

Many historical studies show that excessive gambling is not a recent phenomenon. Apart from that, they are of no direct relevance for contemporary research into problem gambling. However, historical studies are of general interest to gambling scholars since they show how gambling is woven into the social and cultural fabric of societies, demonstrating a remarkable capacity to become adapted to ideological changes and cultural trends. By looking at the past, we hopefully become better at predicting the future. Historical studies also inspire researchers to think about variation and constants. There are many things that are unique to gambling in specific social and historical settings, but there are also some things that are fundamentally the same.

Cultural studies

The mode of gambling as a sign of the times is the theme not only in historical studies, but also in some studies and treatises on contemporary gambling. These works are quite diverse theoretically. Some could be classified as “cultural studies”, as the term is used in a restricted sense in contemporary social science [387], while others are more broadly studies of cultural aspects of contemporary gambling. These works analyze contemporary gambling as a cultural phenomenon and assume that contemporary society, “postmodern” society, or “risk society”, has specific qualities that shape attitudes towards gambling and the social organization of gambling.

A much cited work in this vein is the book *The Age of Chance: Gambling in Western Culture* by Gerda Reith [270]. The first half of the book deals with the cultural history of gambling in Western societies while the second half is a cultural analysis of contemporary gambling. As the title indicates, Reith claims that we have entered the “Age of Chance”, which is also the age of post-modernity and risk society [388, 389]. In this age, gambling is argued to gain new and existential significance [270]:

In an Age of Chance, surrounded by a multitude of risks and existing precariously in a general climate of ontological insecurity, the actions of the gambler have implications for existence that extend far beyond the individual game being played. (p. 184)

While Reith’s book, as well as a few other texts on gambling [390], draw on the notion of risk society, there are works that discuss gambling in post-modern consumer society, characterized by the commerce in illusions, fabrication of identities, and reliance on symbols rather than on facts [391–393]. Other authors have explored the different attitudes towards gambling in consumer society as opposed to industrial society without employing a discourse about post-modernity [66^{ch.5}, 92, 394–396]. They note that gambling in industrial society conflicted with the ethos of thrift, while gambling in the consumer society is assimilated as a consumption of leisure; hence, the shift in moral attitude from condemning to accepting gambling.

The notion of “pathological gambling” as a medical and individual problem is the subject of critique in numerous cultural studies and works discussing the scientific concepts and paradigms used both in problem gambling research and in current political discourse [394, 396–406]. While such discussions may not tell much about the motivations of gamblers and the determinants of gambling involvement, they raise important questions about how excessive gambling may be viewed in a more general light, and about the position of researchers in the societal, and thus to some extent inevitably ideological, production of knowledge. Reflection on these questions is of benefit since it helps to view pieces of knowledge building in their wider epistemological and cultural context.

Finally, there are works that analyze cultural dimensions of contemporary gambling settings with a focus on design and cultural geographical space [407–411]. While not investigating gambling as activity, these studies concern the symbolism of places constructed for gambling and how gambling interacts with the socio-geographic environment. Large-scale commercial gambling may significantly shape cityscapes as well as the distribution and flow of human beings in geographical space [409]. This impact – evident in places such as Las Vegas and Macao – is a subject of human geography.

RELEVANCE TO PROBLEM GAMBLING STUDIES

Cultural studies are a mixed bag of observation and ideas. Their usefulness for investigations of gambling involvement and problem gambling is of the same general kind as that of historical studies. That is, there is no direct relevance but good cultural studies encourage us to reflect on the role of gambling in society and culture. The production of knowledge about excessive gambling is inevitably colored by the society in which it takes place and current cultural values. Being conscious about the societal and cultural framing of science is of benefit as it helps researchers to view their contributions in the wider epistemological context.

Comprehensive models of gambling behavior

THIS SECTION DISCUSSES comprehensive and general models of gambling behavior. These can be viewed as belonging to two general types: motivational models and involvement models. The first, motivational models, concern motives for participating in gambling, and the second, involvement models, provide schemes explaining varying degrees of involvement in gambling.

Motivational models

When individuals are asked in questionnaires as to their reasons for gambling, the alternative “to win” or “to win money” is often the most common pick [56^{p. 3.13}, 96^{p. 144}, 412]. This is natural, since money is the tangible reward of gambling [106^{p. 30}], which makes money “the dominant language of gambling” [194^{p. 160}]. However, everyone with any experience of gambling knows that the motives for participating vary considerably between games and gamblers.

In order to provide insight into why people gamble, scholars may identify various motives for gambling that they have uncovered in the course of their research. The identification of motives may result in a plain enumeration of them or in a model. The motives provide an answer to the question: “Why do people participate in (this type of) gambling?” From a leisure study perspective for instance, it has been argued, as outlined earlier, that recreational casino gambling in the USA has eight motivational components [191], gambling as: learning and evaluating, a “rush”, self-definition, risk-taking, self-classification, emotional self-classification, competing, and communing. A study of betting behavior concluded that there were four principal motives for betting on horses in the UK: financial gain, intellectual challenge, excitement, and social interaction [186]. A quantitative Korean study revealed five factors that motivated gambling: socialization, amusement, avoidance, excitement, and monetary motives [413]. A study in New Zealand revealed eighteen motives for starting to gamble and thirteen for continuing [414].

The present author has, from an anthropological perspective and on the basis of participant observation in a wide variety of Swedish gambling settings, developed a comprehensive motivational model for leisure gambling [415]. Of the model’s five motives, four are optional and may be present to varying extents and in varying combinations in specific games, and may be perceived as motivating to varying degrees depending on the individual gambler’s disposition and preferences. The fifth motive is essential to gambling and always present.

- 1) The *dream of hitting the jackpot*. This motive is salient in lotteries and other games where, for a small stake, people are offered the possibility to win huge sums of money that promise to transform life for the better.
- 2) *Social rewards*. The social rewards of gambling pertain to three dimensions: communion (socializing with other people), competition (playing against opponents) and ostentation (the player displaying wealth, skill and strong character, thereby gaining prestige).
- 3) *Intellectual challenge*. Gambling has the role of an intellectually stimulating hobby and interest.
- 4) The *mood change* induced by games. Some games provide plenty of excitement (e.g. horse betting with large stakes), while highly repetitive games (e.g. slot machines) may be perceived as relaxing and a way of shutting out the outside world.
- 5) The *chance of winning* constitutes the core of all gambling games. Winning has profound psychological and cultural significance. Winning produces a primordial joyful feeling, a most rewarding experience to any gambler.

The model does not pretend to say much about varying levels of involvement in gambling. However, individual variations in the strength of the five motivations obviously relate to individual degrees of involvement in gambling. A very strong motivation can thus be seen as producing gambling at risky levels, and multiple motivations to increase an individual's risk of developing problem gambling. The model has a certain correspondence to constellations of problem gambling factors that have been identified in psychological research, such as the "Four Es of problem gambling": Escape, Esteem, Excess and Excitement [416, 417].

RELEVANCE TO PROBLEM GAMBLING STUDIES

Motivational models are useful as far as they succeed in uncovering the true motives people have for gambling. Models built entirely on responses that people give to questionnaire items may not succeed in this, as the actual motives may be overshadowed by the truism that people gamble to win money. Models derived from player tracking studies and ethnographic research, as well as from in-depth interviews and focus groups, appear more promising. Knowing the true motives for why people participate in gambling is obviously of value for research that aims to uncover determinants of varying levels of gambling involvement.

Involvement models

Involvement models provide schemes for explaining varying degrees of participation in gambling. The most comprehensive of such models integrate genetic, biological, psychological, economic, social, societal, and cultural factors. The models typically do not present any new facts regarding gambling behavior. They aspire to integrate facts and knowledge from previous research. Typically, the models are outlined in figures where factors appear in boxes, with lines and arrows between these indicating causal or other connections.

Brief presentations of some representative examples of comprehensive involvement models follow here. This will hopefully give the reader an idea of their rationales and design. The order in which the models are presented roughly reflects the extent to which they include social and cultural factors: from few such factors to mostly such factors.

“Pathway model of problem and pathological gambling” [12, 418]. This is probably the most well-known comprehensive model for problem gambling. The model identifies three distinct subgroups of problem gamblers: “behaviorally conditioned”, “emotionally vulnerable”, and “antisocial impulsivists” [418]. These subgroups of gamblers develop problems in distinctive ways, which are outlined in specific sub-models and in an integrated model. The integrated model contains about 25 factors, most of which are psychological and biological – such as impulsivity, depression, subjective excitement, substance abuse, and irrational beliefs. There are also two explicit socio-cultural “ecological factors” – “increased availability” and “increased accessibility” – which at a basic level causally influence the other factors. The category “classical and operant conditioning” may include social factors present in gambling venues.

“Impulsivity and pathological gambling: A descriptive model” [419]. This model focuses on dysfunctional impulsivity as being the cause of some persons’ gambling problems. It assumes the presence of a number of predisposing psycho-biological factors and a cyclical process involving impulsivity, gambling behavior, subjective and behavioral reinforcement, affective interpretation, and cognitions. The reinforcing factors include social rewards gained in gambling environments.

“Cognitive-behavioral model of problem gambling: A biopsychosocial perspective” [420, 421]. The model contains about 25 mostly biological and psychological factors, of which “involvement in gambling subculture” is clearly socio-cultural. A few other factors can be assumed to have socio-cultural dimensions, such as “gambling attitudes” and “early gambling history”.

“A conceptual model of gambling behavior: Fishbein’s theory of reasoned action” [423]. This model applies the theory of reasoned action [424] to gambling. The theory assumes that behavioral intentions are dependent on a person’s attitudes towards the behavior and how other people view the behavior (subjective norms). A person’s decision to behave in a certain way is based on a rational calculus of weighted values of attitudes and subjective norms. The weighting depends on certain factors, such as personal disposition. The theory holds that the decision to act or not is rational, resulting in an optimal choice, but that the information on which the decision is made may be incomplete and inaccurate. The model of gambling behavior consists of a formula including about 25 factors, among them variables such as personality, demographics, locus of control, and “motivation/need structure”. The subjective norms of others are clearly a social factor and an individual’s beliefs about gambling are formed by education and socio-economic circumstances.

“Biopsychosocial model of pathological gambling” [5]. The model outlines causal and mediating relationships and is composed of eight steering components, which in turn have their sub-factors. The steering components are: potentiating variables, antecedents, beliefs, alternative behaviors, capability, consequences, identity and spirituality/values. Most of the factors are psychological. Availability of gambling is a societal factor and reinforcement of gambling behavior has a social dimension. The components identity and spirituality/values are framed by society and culture.

“Social cognitive model of lottery gambling behaviour” [425, 426]. The model builds on social cognitive theory [35] and assumes the interaction between three sets of variables. The first set comprises behavior variables: the frequency of lottery participation, the amounts spent, and chasing losses. The second set comprises personal variables: demographic, psychological, and cognitive. The third set comprises environmental variables, including: prize money, availability of lottery, and social environment. Social variables are thus given about equal importance in shaping gambling behavior as are personal variables.

“Psycho-structural cybernetic model, feedback and problem gambling: A new theoretical approach” [427]. In this model, problem gambling behavior is generated by the interaction between two mechanisms. One is located within the agent, comprising psychology and biology. The other is external and structural, including culture, economic disparity, community structure, political/public health policy and broadcast agents. Crucial to the structural mechanism are streams of cybernetic information processing. There are 10 main factors in the model.

“Bio-psycho-social-sociological model” [397]. This model includes biological, psychological and social factors that influence involvement in gambling and, on top of this, a further layer of “sociological imagination”. The model is constructed for the purpose of improving the treatment of problem gamblers and sociological imagination is suggested as a key to this – that is, that those who gamble excessively should be made conscious of the sociological dimension of their gambling problems, rather

than believing that their problems result from individual pathology or weak character. Such a consciousness of the commercial principles of the gaming market and the politics of gambling regulation is assumed to have a healing power and increase a person's chances of succeeding to quit gambling excessively.

“Synoptic model of gambling behavior” [428]. The model integrates a sociological perspective with elements of cognitive psychology and focuses on the culturally and socially generated meanings of gambling. The reality of the gambler is differentiated into eight sets of variables. At the macro level, there are (1) *status variables* (e.g. socio-economic status, occupation, education), (2) *situational variables* (e.g. availability of gambling, friends who gamble), and (3) *contextual variables* (e.g. gaming regulation). The first three variables are subject to (4) *social transformation rules* (i.e. social norms that apply to particular forms of gambling), that feed into (5) *gambling event variables* (consisting of game rules and the practicalities of playing). At the micro level, the gambling events shaped and loaded with sociocultural meaning at the macro level are imbued with individual meaning through (6) *psychological variables and transformation rules* (e.g. personality traits, locus of control). On the basis of these rules, the individual may choose to play a certain game and thus engage in (7) *gambling action*, the perception of which is influenced by (8) *social feedback signal variables* (approval or disapproval by others) that connect back in a loop to the (6) *psychological variables and transformation rules*. In short, the macro-level variables shape the image that a certain person has of a specific form of gambling and thus predict whether or not the person is likely to try the game; the micro-level variables dynamically determine to what extent the individual will engage in the game once he or she has tried it.

“Model to explain the relationships between gamblers, the gambling institution, and outside society” [107]. This is a socio-cultural model with few psychological factors, which have been outlined above in the section on subcultural studies. Heavy gambling is seen as resulting from the commitment to gambling institutions (e.g. a casino). Commitment is negatively reinforced by conflicts with outside society and the stigmatization resulting from intense involvement in gambling, and at the same time positively reinforced by the social rewards gained while gambling, this taking place within the institutional arrangements of the provider of gambling. In all, the model comprises about 20 factors.

RELEVANCE TO PROBLEM GAMBLING STUDIES

The involvement models presented have different objectives. Those presented early in the list aim primarily at explaining why one individual and not another one develop problem gambling. Therefore, there is a focus on individual factors, i.e. biological and psychological. Those presented at the end of the list primarily aim at explaining why certain groups of people gamble more than others. Therefore, there is a focus on the social and cultural variables that apply on group level. All these models are potentially useful for research with the purpose of identifying motives for gambling, explaining varying levels of involvement, and identifying risk factors – individual and/or socio-cultural – for problem gambling. However, the practical usefulness clearly varies. Some relationships in some models appear quite unproblematic to apply in quantitative research – the factors involved are rather easy to isolate and quantify and the causal relationships are not overly complicated. Other models seem virtually impossible to bring to instrumental use in quantitative research. That a specific model might not be useful for that purpose is not to be considered as a fault. The model may be intended to be primarily conceptual, not instrumental.

Concluding discussion

Gambling – a multidimensional phenomenon

The research reviewed shows that gambling is a multidimensional phenomenon, which can be studied from many perspectives. This is even more evident if we keep in mind that the review excludes quite a few types of studies in the social, cultural and economical sciences, as well as the most extensive body of research in gambling: the psychological studies. The dimensions of gambling span from the neurological impulse in the brain of a gambler to push a button on a slot machine, to cities built on gambling and the regulatory frameworks that govern the business of gaming.

Some gamblers push the button on the slot machine way too many times and it is this type of destructive behavior that has occasioned this review: the public health issue of problem gambling. In our time, excessive gambling is conceived mainly as a health problem – a risky overconsumption, an addiction or pathological compulsion – rather than a sin, a vice, or stupidity for which the individual has only himself to blame. Just as excessive gambling in earlier times had its cures – religious penance, moral correction, and listening to reason – today there are public health approaches, hopefully more effective than earlier efforts, regarding how to prevent people from ruining their lives by playing too much and how to help those already suffering from the negative consequences of excessive gambling. In order to implement these measures of prevention, intervention and treatment, knowledge is needed.

The knowledge needed is essentially of two kinds. The first kind of knowledge is beyond the scope of this review: why do some individuals, and not others, start to play excessively, given similar social and cultural contexts? This question is commonly answered by psychologists who study how individual minds differ due to genetic and biological constitution, as well as particular histories of emotional experiences, social learning, and behavioral reinforcement.

The second kind of knowledge needed deals with the collective level, rather than the individual level. This knowledge concerns two issues: firstly, what motivates people to gamble; and secondly, the reasons why certain categories of people are unusually highly involved in gambling, some having problems keeping their gambling within reasonable limits.

Motivation and involvement as risk factors for problem gambling

A straightforward approach for using the knowledge gained by social, economic and cultural studies in problem gambling research is to view motivational and involvement factors as potential risk factors for problem gambling. Strong motivation and high involvement does not necessarily mean problem gambling, but since problem gambling presupposes high involvement, at least some of the factors that determine the degree of involvement ought to be related to a heightened risk for gambling problems.

It has been observed in gambling studies that the concept of an “at risk gambler” is fuzzy and plagued with problems of definition [429]. However, a promising approach to the issue of “at risk gambling” and risk factors is suggested by the Ontario Problem Gambling Research Centre (OPGRC) [430], who separate risk factors for problem gambling into indirect and direct risks. The indirect risk factors are: social, emotional and biological predisposition, as well as environmental conditions (e.g. the accessibility of gambling and promotional activities of gaming providers). The direct factors are separated into risk cognitions and risk practices. Risk cognitions include the illusion of control, superstitions, and serious misunderstandings about odds and probabilities. Risk practices include betting more than intended, chasing losses, and procuring money for gambling in morally or legally unacceptable ways. Risk cognitions and risk practices interact by reinforcing each other.

This way of reasoning prompts a reconsideration of the relation between the categories of “at risk” and “problem gambling”. The conventional view is that an accumulation of a certain number of symptoms of pathological gambling constitutes “at risk” gambling (e.g. 1–2 points on the South Oaks Gambling Screen (SOGS) [431]), and when a certain number of additional symptoms are present, “problem gambling” (a SOGS score of 3–4) or “pathological” gambling (i.e. a SOGS score of 5 or more) is assumed. The view suggested by the OPGRC is that, rather than viewing certain behaviors as symptoms, they should be regarded as direct risk behaviors. These are acts that may be unwise or impulsive but that, if not repeated too often, may not mean more than a temporary lapse of judgment of the kind that all of us experience when excited or not fully focused.

Thus, some of the behaviors usually viewed as signs of problem gambling are considered instead to be direct risk factors. Problem gambling as such (including pathological gambling) is defined as “the constellation of negative consequences that result from risk practices.” These problems affect problem gamblers, people in their social network, and society at large [430]. For example, borrowing money to gamble is a direct risk factor for developing gambling problems, but even in combination with other risk factors it need not be a problematic behavior. The person may himself or herself lend money to others in gambling environments; borrowing and lending small sums of money may be a way to reaffirm social belonging and

solidarity. It is first when borrowing, or some other risk behavior, has negative consequences that actual problem gambling is present, such as a person being deep in gambling debt and unable to pay for food or rent.

As the number of risk practices of a person increases, so too does the probability that it will lead to detrimental consequences. However, the point when this happens is not the same for all individuals and not even the same for one individual at one time compared to another time. There is a host of dynamic features, internal and external to the gambler, that influence whether or not risk practices will lead to problem gambling. Among these features is a set of protective factors that lessen the risk of a person developing gambling problems. This approach to viewing risk gambling and problem gambling is thus in accordance with the observation that many individuals are constantly moving on the continuum between problem-free gambling and problem gambling [432, 433].

Relevance of the research reviewed to problem gambling studies

Since the relevance of each of the social, economic and cultural research areas discussed has already been summarized, some more general remarks will be made here.

In most of the research discussed, motives for gambling are exposed. These include the social rewards of gambling, the belonging to a group of dedicated gamblers, the existential and quasi-religious dimensions of chance games, the hope of economic betterment, the wish to have some extra money to buy relatively expensive goods, the dream of transforming one's life by hitting a multi-million jackpot, the intellectual challenge of some games, the emotional experience of playing, the broader entertainment value of play and gaming environments, and the primordial joy of winning.

All these features of gambling exercise a pull on individuals. This force of attraction has a stronger impact on individuals if their satisfaction with work, social relations and leisure other than gambling is low. In cases of outright dissatisfaction, it constitutes a force that pushes people away from ordinary life. Such push factors have also been discussed in the literature, and include: social frustration, boredom and a general dissatisfaction with life in modern society, and social and cultural estrangement stemming from being a member of an ethnic minority.

Knowledge about the various motives for gambling allows us to understand why people engage in leisure gambling. If the motives are viewed as pull factors, and dissatisfaction and frustrations that individuals feel in their ordinary lives are viewed as push factors in a push-pull model, then we can understand why some individuals become highly involved in gambling and may experience problems. Such a model – in which the number of push/pull forces as well as their intensity is considered – thus includes indirect risk factors for problem gambling.

In the research reviewed, reasons for high involvement in gambling are in the forefront of the micro-sociological studies, especially those on gambling subcultures. These studies show how, for some individuals, gambling becomes a way of life. Such studies, as well as ethnographic studies more generally, also reveal situational rationalities peculiar to gambling environments, i.e. modes of thinking shaped by the contexts and environments of playing games that to an outside observer appear irrational and distorted. Such thinking and the resulting behaviors are direct risk factors for gambling problems.

Two promising quantitative approaches that may complement problem gambling prevalence studies have been identified in the research reviewed. One approach is the geographical analysis of gambling participation, which enables us to study the connection between availability of gambling and the extent of problem gambling. Another approach is the statistical study of betting slips, electronic databases of online gambling behavior, and other hard evidence of how gamblers play. Such player tracking studies do not rely on self-report but on evidence of actual decisions made when gambling.

Most of the comprehensive models of gambling behavior discussed integrate psychological factors with social, economic and cultural factors. While the motivational models apply mostly to the leisure gambler, the involvement models account for problem gambling. The variety of such models tells us two things: first, that problem gambling is complex, which makes it necessary to include a great number of factors in the models – factors that researchers may define differently and consider to have different relations of causality; and second, that problem gambling research has varying objectives, where some research focuses on the individual and other research focuses on the social contexts of gambling.

Some of the qualitative approaches reviewed are of little direct relevance to problem gambling studies: the cross-cultural, historic and cultural studies. Such research is, however, of indirect value, since it prompts us to reflect on gambling as a social and cultural phenomenon. While the bulk of scientific discoveries and uncovering of facts by empirical research is made by focusing on specific issues that are dissected in detail, scientific progress is more generally promoted by researchers occasionally taking a broader view on the subject of investigation.

These broader views may spawn new ideas for research questions. One example, from this knowledge review, is whether problem gambling exists in non-commercial gambling on chance games and in skill games where gamblers are equally skilled. Another advantage of such broad views is that they highlight the social and cultural context of research. Gambling and problem gambling is conceptualized in different ways across historical periods and societies, and researchers should be aware of how their activities relate to these conceptualizations. Scientists may feel that they work perfectly objectively and detached from moral and political contexts, but in reality all science is framed and influenced by society and culture at large; the fruits of research are not only scientific but also social.

Much contemporary research into gambling concerns problems and excessive play. Leisure and consumer studies, economic studies on the process utility of gambling, as well as various kinds of cultural approaches, highlight the positive sides of gambling. They explain why people like to gamble; they tell about the fun, excitement and rewards that people get from gambling. These positive aspects should be taken into consideration when evaluating the overall public health effects of gambling and more broadly the costs and benefits of gambling in society.

Much research into gambling also provides – explicitly or implicitly – answers to the question of why people gamble. We have seen that there are good answers to that question, and we can also observe that in most Western societies the majority of the population gamble. This is quite natural, given that gambling products are affordable to anyone and the high and varied appeal of the games. A more intriguing question might therefore be why some people *do not* gamble.

Towards a cross-fertilization between quantitative and qualitative gambling studies

There is an unfortunate gap between the medical paradigm in gambling studies and socio-cultural approaches. The medical paradigm focuses on gambling as pathology and has a tendency to see pathological traits even in gambling behavior that is generally perceived to be normal. The socio-cultural approaches are mostly concerned with the problem-free leisure gambler, and there is a tendency to criticize the “medicalization” of gambling behavior. Excessive gambling is viewed as a social problem and the very concept of “pathological gambling” may be viewed as stigmatizing labeling of behavior perceived as deviant relative to the values of mainstream society.

The public health approach, to conceptualize and study gambling, has the potential to bridge the gap between the medical and socio-cultural paradigms: “public” referring here to society and culture, and “health” to well-being and quality of life in a wider sense than implied by the concept “medical” [434]. The approach is well-suited to handling the fact that people’s gambling forms a continuum from problem-free leisure activity to utterly self-destructive behavior, often of a compulsive character: the player cannot stop despite a rational wish to do so. This review has adopted the public health perspective and pointed out social, economic and cultural research on gambling that may be useful in identifying factors that influence the risk of individuals to develop gambling problems.

Quantitative and qualitative studies of gambling complement each other and the ideal is the cross-fertilization between these two approaches. On the one hand, findings from qualitative studies may be useful for designing quantitative investigations (for instance, when formulating survey questions) and in the interpretation of results (i.e. giving hints about causal relationships). Furthermore, qualitative studies provide a reality check for quantitative survey studies (i.e. “What do these figures

really mean? Does this type of problem gambler actually exist?”). On the other hand, quantitative survey studies provide hard facts and figures that give perspective to qualitative studies (i.e. “How common is this?”).

Quantitative studies dissemble the phenomena of gambling and problem gambling into components that can be measured. This inevitably results in a loss of authenticity and context. The problem gambler emerges as a bundle of risk factors, cognitions, symptoms, and behaviors. Games appear as constellations of frequency of bets, reinforcing mechanisms and other specific features. Qualitative studies tell about real gamblers. They may tell how gambling problems may emerge during a person’s life, how they fluctuate over time, and how different types of problems relate to different forms of play. Qualitative studies also tell about actual gambling environments, which are always perceived by people as more than the sum of their components of game features. Some gambling settings, such as casinos and trotting tracks, have their particular atmosphere and traditions, and it is the setting as a whole, as a cultural realm of its own, which is the essential attraction.

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This report reviews the academic literature on social, economic and cultural research on gambling. The objective is to sum up what the literature says about the motives people have for gambling and the factors that influence their degree of involvement in gambling. Suggestions are made as to the usefulness of this knowledge for studies on problem gambling, which often rely on medical concepts of excessive gambling as pathology. This review – citing 434 works – may thus be helpful to scholars, health practitioners and policy makers who deal with problem gambling issues, and of interest also to those with a more general desire to learn more about why people gamble.

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